

# Memorandum

Date: August 7, 2023

From: Division of Food Ingredients Chemistry Review Group 2

To: Division of Food Ingredients Regulatory Review Group 1 Attn: S. West-Barnette

**Subject:** CAP 0C0317: Exponent, Inc., on behalf of Ecoflora SAS. Jagua (genipin-glycine) blue for use as a color additive in various foods. Submissions dated January 31, 2019, May 21, 2020, April 1, 2021, and November 23, 2021.

#### Introduction

Exponent, Inc. (Exponent), on behalf of Ecoflora SAS (Ecoflora), is petitioning to amend 21 CFR part 73 to allow for the use of jagua (genipin-glycine) blue derived from jagua (*Genipa americana* L.) fruit pulp as a color additive in flavored milk, dairy drinks and substitutes, dairy and dairy alternative yogurt, ice cream, frozen dairy and dairy alternative desserts, puddings, gelatins, ices, sorbets, ready-to-eat (RTE) multi-colored cereals, flavored potato chips, tortilla, corn, and other chips, candy, chewing gum, non-alcoholic fruit based/flavored drinks, nutritional beverages, smoothies, flavored cream cheese-based spreads, icings, frostings, jams, syrups, fruit toppings and fillings, at levels consistent with good manufacturing practice (GMP).

In a letter dated March 3, 2020, we declined to file the petition because the toxicology information was inadequate to support the safety of jagua (genipin-glycine) blue at the dietary exposure resulting from the proposed uses. Subsequently, Ecoflora removed several food categories from their proposed uses and submitted a revised dietary exposure assessment as a part of the submission dated May 21, 2020. In an amendment dated November 23, 2021, Ecoflora requested that the petition include the liquid form of jagua (genipin-glycine) blue in addition to the powder form.

This memorandum provides dietary exposure estimates for jagua (genipin-glycine) blue and for the polymer (main coloring component) in jagua (genipin-glycine) blue from the proposed uses as stated in the revised dietary exposure assessment dated May 21, 2020, and in the amendment dated November 23, 2021. Information regarding the other chemistry-related aspects of the petition will be reviewed by the Office of Cosmetics and Colors (OCAC).

### Identity

Jagua (genipin-glycine) blue is a dark blue water-soluble powder or liquid prepared by reacting the juice of unripe jagua (*Genipa americana* L.) fruits with the amino acid glycine. The major coloring component of jagua (genipin-glycine) blue is a polymer that forms as a result of the reaction between genipin (iridoid present in the fruit) and glycine. The polymer is designated by CAS No. 1314879-21-4. Dimers of the reaction between genipin and glycine constitute the minor coloring components present in jagua (genipin-glycine) blue and are designated by CAS No. 1313734-13-2, CAS No. 104359-67-3, and CAS No. 1313734-14-3.

## **Dietary Exposure Estimate**

### Dietary Exposure for Jagua (Genipin-Glycine) Blue

Ecoflora is requesting that jagua (genipin-glycine) blue powder or liquid be used in certain foods at levels consistent with GMP. In order to estimate dietary exposure to jagua (genipin-glycine) blue from the proposed uses, Ecoflora provided the maximum use levels of jagua blue (genipin-glycine) powder that represent GMP for the proposed food uses (see Table 1 in the submission dated May 21, 2020 and Table 1, below). In the amendment dated November 23, 2021, Ecoflora stated that the use of the liquid form of jagua (genipin-glycine) blue would be substitutional for the powder form and that, on the polymer basis, the use levels are the same for both forms.

| -                               | Table 1. Proposed Food Uses and Maximum Use Levels for Jagua (Genipin-Glycine) Blue         Powder |   |   |  |  |  |  |  |  |  |  |
|---------------------------------|--|---|---|--|--|--|--|--|--|--|--|
| Food Category                   | Food<br>Subcategory  | Maximum Use Level of Jagua (Genipin-Glycine)<br>Blue Powder in the Finished Food (%)<br>Intended color <sup>1</sup> |   |  |  |  |  |  |  |  |  |
|                                 |  | Blue  | Green, purple, brown  |  |  |  |  |  |  |  |  |
| Flavored Milk                   | Flavored milk  | 0.040 <sup>2</sup>  | 0.021<br>(green <sup>2</sup> , purple, brown)   |  |  |  |  |  |  |  |  |
| Dairy Drinks<br>and Substitutes | Milk shakes  | 0.040   | 0.021<br>(green, purple, brown)   |  |  |  |  |  |  |  |  |
|                                 | Milk substitutes   | 0.040 <sup>2</sup>  | 0.021<br>(green <sup>2</sup> , purple <sup>2</sup> , brown <sup>2</sup> )   |  |  |  |  |  |  |  |  |
|                                 | Other dairy drinks   | N/A   | 0.021<br>(green, purple, brown)   |  |  |  |  |  |  |  |  |
| Yogurt                          | Regular and Greek yogurt<br>Non-dairy yogurt   | 0.030   | 0.016<br>(green, purple, brown)   |  |  |  |  |  |  |  |  |
|                                 |  | 0.050   | 0.026<br>(green, purple, brown)   |  |  |  |  |  |  |  |  |
| Desserts                        | Ice cream and frozen dairy<br>and non-dairy desserts<br>Pudding                                    | 0.100<br>N/A  | $\begin{array}{c} 0.053\\ (\text{green, purple, brown})\\ 0.021\\ (\text{green}^2 \text{ purple}^2 \text{ brown})\end{array}$ |  |  |  |  |  |  |  |  |
|                                 | Gelatins, ices, sorbets  | 0.030   | (green <sup>2</sup> , purple <sup>2</sup> , brown)<br>0.016   |  |  |  |  |  |  |  |  |
| RTE Cereals                     | Multi-colored RTE cereal   | 0.500   | 0.290<br>(green, purple, brown)   |  |  |  |  |  |  |  |  |
| Savory Snacks                   | Flavored potato chips  | N/A   | 0.154 <sup>3</sup><br>(green, brown)  |  |  |  |  |  |  |  |  |
|                                 | Tortilla, corn, other chips  | 0.300   | 0.154   |  |  |  |  |  |  |  |  |

| Food Category | Food<br>Subcategory          | Maximum Use Level of Jagua (Genipin-Glycine<br>Blue Powder in the Finished Food (%)<br>Intended color <sup>1</sup> |                        |  |  |  |
|---------------|------------------------------|--|------------------------|--|--|--|
|               |                              | Blue   | Green, purple, brown   |  |  |  |
|               |                              |  | (green, purple, brown) |  |  |  |
| Candy         | Candy (containing or not     | $0.200^4$  | 0.1034                 |  |  |  |
|               | containing chocolate)        |  | (green, purple, brown) |  |  |  |
|               | Chewing gum                  | 0.200  | 0.103                  |  |  |  |
|               |                              |  | (green, purple, brown) |  |  |  |
| Non-alcoholic | Fruit based drinks           | 0.020  | 0.011                  |  |  |  |
| Beverages     | (including fruit flavored    |  | (green, purple, brown) |  |  |  |
|               | drinks)                      |  |                        |  |  |  |
|               | Nutritional beverages        | N/A  | 0.016                  |  |  |  |
|               |                              |  | (green, purple, brown) |  |  |  |
|               | Smoothies                    | N/A  | 0.016                  |  |  |  |
|               |                              |  | (green, purple)        |  |  |  |
| Fats and Oils | Flavored cream cheese-       | N/A  | 0.011                  |  |  |  |
|               | based spread                 |  | (green, purple, brown) |  |  |  |
| Jams, Syrups, | Icing and frosting; fruit    | 0.030  | 0.016                  |  |  |  |
| Toppings      | toppings, fillings, and jam; |  | (green, purple, brown) |  |  |  |
|               | syrup/toppings for           |  |                        |  |  |  |
|               | beverages, desserts, and     |  |                        |  |  |  |
|               | breakfast syrups             |  |                        |  |  |  |

| Table 1. Proposed Food Uses an | d Maximum Use Levels for Jagua (Genipin-Glycine) Blue |
|--------------------------------|---|
| Powder                         |   |

N/A = Not applicable; color not intended

<sup>1</sup> Intended color(s) in parenthesis are shown beneath the maximum use level for each proposed food use.

<sup>2</sup>Color use is seasonal.

<sup>3</sup>Use level corresponds to the seasoning that could contain jagua (genipin-glycine) blue powder.

<sup>4</sup> Use level corresponds to the portion of candy that could contain jagua (genipin-glycine) blue powder.

The petition contains a dietary exposure assessment report that was prepared by Exponent on behalf of Ecoflora. Exponent estimated dietary exposure to jagua (genipin-glycine) blue using 2-day food consumption data from the 2013–2016 National Health and Nutrition Examination Survey (NHANES). Exponent reviewed the NHANES food codes for these survey years and identified those food codes corresponding to the food categories indicated in Table 1, above. Only those food codes that were reported as having consumers for the 2013–2016 survey years were included in the dietary exposure estimate. Exponent assumed that all NHANES food codes corresponding to the food categories in Table 1 would be colored with jagua (genipin-glycine) blue with the exception of the following: 1) chocolate flavored products and foods that have a standard of identity that do not allow for the addition of color additives (i.e., chocolate candy and portions of candy containing chocolate); 2) "home recipe" foods as indicated by the NHANES food description or foods that are typically homemade; and 3) baby foods, which are not a proposed use for jagua (genipin-glycine) blue.

Exponent noted that while food code 11560000 corresponding to chocolate milk drink would not contain jagua (genipin-glycine) blue, it was included in the dietary exposure estimate as a surrogate to represent a flavor other than chocolate because there were no other food codes corresponding to these milk drinks. In addition, while "home recipe" foods were excluded from the dietary exposure estimate, the food

codes representing "home recipe" milk shakes (11541120 and 11541135) were included in the dietary exposure estimate in order to account for the ice cream component that is typically purchased, not homemade.

Exponent provided a list of all food codes from the 2013–2016 NHANES that could contain jagua (genipin-glycine) blue (see Appendix I of the submission dated May 21, 2020). Exponent also provided a complete list of food codes that were excluded from the dietary exposure assessment (see Appendix II of the submission dated May 21, 2020). In a deficiency letter dated March 31, 2021, we asked for clarification regarding the exclusion of several food codes and the portions of foods that could contain jagua (genipin-glycine) blue identified for several other food codes. Exponent responded in a submission dated April 1, 2021, that provided a revised dietary exposure estimate including the additional food codes and correct portions of foods that could contain jagua (genipin-glycine) blue. Appendix 1, below, contains the complete list of food codes used in the dietary exposure estimate. We have no further questions regarding the food codes used in the dietary exposure estimate.

For most of the food codes, Exponent presumed that 100% of the food would contain jagua (genipinglycine) blue at the maximum use levels.<sup>1</sup> However, for those food codes in which only a component of the food code would be expected to contain jagua (genipin-glycine) blue, only the portion of the food corresponding to this component was included in the dietary exposure estimate. To determine the portion (weight percent) of a food that could be attributed to the component containing jagua (genipin-glycine) blue, Exponent used the United States Department of Agriculture (USDA) Food and Nutrient Database for Dietary Studies (FNDDS), except for potato chips for which the portion that could contain jagua (genipin-glycine) blue was determined based on the U.S. Environmental Protection Agency (EPA) What We Eat In America-Food Commodity Intake Database (WWEIA-FCID). The maximum use levels (Table 1, above) were applied only to the portion of the foods that would contain jagua (genipin-glycine) blue. For example, food code 42302010 (Yogurt, Greek, with oats) contains the proposed use of jagua (genipin-glycine) blue in the yogurt component of the food. Exponent determined that the yogurt component accounts for 80% of the food and applied the maximum use levels only to the yogurt component for that food code.

The USDA's FNDDS does not provide recipes that would allow for the determination of the portion of the icing and frosting component in baked goods or the seasoning component in flavored potato chips. Therefore, to approximate the portion of the icing/frosting or fruit filing component in baked goods, Exponent compared weights reported in USDA's FNNDS for the food with the component that could contain jagua (genipin-glycine) blue and the corresponding food without the component, identified the highest contribution of the component, and rounded the resulting value up to the nearest 5%. For example, cupcakes (food codes 53120275 and 53120270) had the highest icing contribution (36%) among several types of frosted cakes.<sup>2</sup> After rounding to the nearest 5%, it was conservatively assumed that the icing and frosting component accounts for 40% of a frosted cake. Using a similar approach, Exponent determined that the average icing/frosting portion accounts for 30% in cookies and 20% in pastries, and that the average fruit filling portion accounts for 85% in pies and 55% in pastries. It was also presumed that a sandwich cracker would be similar that of a frosted/filled cookie and therefore, the average filling portion in sandwich crackers was assumed to be 30%.

<sup>&</sup>lt;sup>1</sup> For non-reconstituted powder mixes of flavored milk and nutritional beverages, the percent was adjusted to the reconstituted beverage amount assuming the 'quantity not specified' portion weight value from USDA's FNDDS to make a 250 g serving of beverage.

<sup>&</sup>lt;sup>2</sup> The weight of white cake or cupcake was determined to be 66 g (with icing or filing; food code 53120270) and 42 g (without icing or filing; food code 53120275). Therefore, the percent of icing/frosting used as icing or filing was determined as follows: % icing/frosting = [(66-42)/66] x 100% = 36%.

To determine the portion of flavored chips that could contain jagua (genipin-glycine) blue, Exponent used the EPA's WWEIA-FCID recipe for food code 54401080 (salty snacks, corn or cornmeal base, tortilla chips) as a representative recipe for potato chips. Using the recipe, Exponent estimated that the non-grain ingredients account for 23% of the food and, after rounding the value to the nearest 5%, assumed that 25% represents the seasoning portion on flavored potato chips.

For candy, if the food product was candy-coated (and presumed to contain jagua (genipin-glycine) blue) with a non-colored interior, the candy-coating portion of the candy was determined using USDA's FNDDS food weights data and comparing the weights of 1 cup of M&M's milk chocolate candies and 1 cup of milk chocolate candy, plain.<sup>3</sup> Exponent rounded the resulting value up to the nearest 5% and conservatively presumed that all enrobed candies consisted of 20% coating that could contain jagua (genipin-glycine) blue.

Exponent used a similar approach for other candy products. For chocolate-coated candies where the interior portion could be colored, USDA's FNDDS food weights data for a plain marshmallow and a chocolate covered marshmallow were used to determine the portion corresponding to the candy interior. Exponent estimated that the candy interior that could contain jagua (genipin-glycine) blue was 65% of chocolate-covered products.

For yogurt-covered raisins, using USDA's FNDDS food weights data for a yogurt covered raisin and an uncoated raisin, Exponent estimated that 60% of yogurt-coated raisins would be the yogurt coating that could contain jagua (genipin-glycine) blue.

For yogurt- and sugar-coated nuts, Exponent used USDA's FNDDS food weights data for uncoated almonds and yogurt-covered or sugar-coated almonds and, in a similar manner to that described above, determined that for both types of coated nuts, the coating that could contain jagua (genipin-glycine) blue was presumed to be 70% of the food.

For other non-chocolate candy products that did not fit into one of the candy categories mentioned above, Exponent presumed that 100% of the candy could contain jagua (genipin-glycine) blue. Plain chocolate candy and candy containing chocolate and a non-candy component (e.g., chocolate covered raisins) were excluded because the standards of identity for chocolate and white chocolate do not allow for the addition of color additives. In addition, candy bar brands typically not colored blue, green, purple, or brown were also excluded.

Exponent adjusted the jagua (genipin-glycine) blue use levels taking into consideration that the intended use of jagua (genipin-glycine) blue is to impart color and only food products that are visibly blue or colored products that contain a blue coloring to create a desired color (e.g., green, purple, or brown) would contain jagua (genipin-glycine) blue. To determine the percent of food products within a given food category that would be expected to contain an intended color, Exponent reviewed representative food products online and for each product reviewed, categorized the product into three color groups: 1) blue, 2) green, purple, or brown, and 3) all other colors based on a visual inspection of the product image. The percent of food products in color groups 1) and 2) was rounded up to the nearest 5% and the remaining percentage was assigned to color group 3). If the products reviewed were not colored blue, Exponent conservatively assumed the percentage assigned to the blue color group to be half of the percentage corresponding to the green, purple, or brown color group (Appendix III of the submission

<sup>&</sup>lt;sup>3</sup> The weights of one cup of M&M's milk chocolate candies (food code 91746100) and one cup of plain chocolate candy (food code 91705010) were determined to be 208 g and 168 g, respectively. Therefore, the percent of candy coating was determined as follows: % candy coating = [(208-168)/208] x 100% = 19%.

dated May 21, 2020). In addition, Exponent applied an additional adjustment factor of 0.5 to foods for which the intended color is seasonal. The factor of 0.5 was chosen based on a conservative assumption that seasonal colors occur at most two out of four seasons. The percent of foods from each food category within the 1) blue and 2) green, purple, or brown color groups was multiplied by the corresponding maximum use level specified in Table 1, above, to determine the use levels for jagua (genipin-glycine) blue in foods within a given food category (Table 3 in the submission dated May 21, 2020). Finally, the use levels were further adjusted based on the portion (weight percent) of the finished food that would contain the intended color. The use levels for all food codes included in the dietary exposure estimate can be found in Appendix 1, below.

Exponent estimated an eaters-only dietary exposure to jagua (genipin-glycine) blue powder using 2-day food consumption data from the 2013-2016 NHANES, the maximum use levels for jagua (genipin-glycine) blue powder provided in Table 1, above, the portion (weight percent) of the food that would be colored with jagua (genipin-glycine) blue, and the percent of the foods in a given food category that would contain the intended color (see the Excel file provided in the submission dated May 21, 2020 and Appendix 1, below). An eaters-only dietary exposure to jagua (genipin-glycine) blue powder was estimated for the U.S. population aged 2 years and older, as well as for children aged 2–5 years, children aged 6–12 years, adolescents aged 13–18 years, and adults 19 years and older (Table 4 of the submission dated May 21, 2020 and Table 1 of the submission dated April 1, 2021). The eaters-only dietary exposure for jagua (genipin-glycine) blue powder from the proposed uses is presented in Table 2, below.

| Table 2. Eaters-Only Dietary Exposure to Jagua (Genipin-Glycine) Blue Powder from the         Proposed Uses |          |                  |   |  |  |  |  |  |  |
|---|----------|------------------|---|--|--|--|--|--|--|
| Population  | % Eaters | Mean<br>(mg/p/d) | 90 <sup>th</sup> Percentile<br>(mg/p/d) |  |  |  |  |  |  |
| U.S. Population aged 2 years and older  | 87       | 34               | 78                                      |  |  |  |  |  |  |
| Children 2–5 years  | 97       | 34               | 76                                      |  |  |  |  |  |  |
| Children 6–12 years   | 97       | 44               | 92                                      |  |  |  |  |  |  |
| Adolescents 13–18 years   | 90       | 40               | 92                                      |  |  |  |  |  |  |
| Adults 19 years and older   | 84       | 31               | 74                                      |  |  |  |  |  |  |

Dietary Exposure to the Polymer Component of Jagua (Genipin-Glycine) Blue

We were requested to provide a dietary exposure to the polymer, the main coloring component in jagua (genipin-glycine) blue, from the proposed uses of jagua (genipin-glycine) blue.<sup>4</sup> Ecoflora provided a specification limit for the polymer in jagua (genipin-glycine) blue powder of 20–40%. Because the proposed uses of the powder and liquid forms of jagua (genipin-glycine) blue are substitutional and their use levels are the same on the polymer basis, the dietary exposure to the polymer component is the same for the proposed uses (Table 2, above) by the maximum specification limit for the polymer component in the polymer form of 40%, results in an upper-bound eaters-only dietary exposure to the polymer component (see Table 3, below).

<sup>&</sup>lt;sup>4</sup> See e-mail from A. Khan to R. Kolanos dated July 16, 2021.

| Jagua (Genipin-Glycine) Blue           |          |                  | -                                       |
|--|----------|------------------|---|
| Population                             | % Eaters | Mean<br>(mg/p/d) | 90 <sup>th</sup> Percentile<br>(mg/p/d) |
| U.S. Population aged 2 years and older | 87       | 14               | 31                                      |
| Children 2–5 years                     | 97       | 14               | 30                                      |
| Children 6–12 years                    | 97       | 18               | 37                                      |
| Adolescents 13–18 years                | 90       | 16               | 37                                      |
| Adults 19 years and older              | 84       | 12               | 30                                      |

# Table 3. Eaters-Only Dietary Exposure to the Polymer Component from the Proposed Uses of Jagua (Genipin-Glycine) Blue

#### Conclusion

In this memorandum, the eaters-only dietary exposure to jagua (genipin-glycine) blue powder from the proposed uses was estimated to be 34 mg/p/d at the mean and 78 mg/p/d at the 90<sup>th</sup> percentile for the U.S. population aged 2 years and older and 34 mg/p/d at the mean and 76 mg/p/d at the 90<sup>th</sup> percentile for children aged 2–5 years (Table 2, above). The eaters-only dietary exposure to the polymer component of the powder or liquid form of jagua (genipin-glycine) blue was estimated to be 14 mg/p/d at the mean and 31 mg/p/d at the 90<sup>th</sup> percentile for the U.S. population aged 2 years and older and 14 mg/p/d at the mean and 30 mg/p/d at the 90<sup>th</sup> percentile for children aged 2–5 years (Table 3 above). Eaters-only exposures to jagua (genipin-glycine) blue powder and the polymer component of the powder or liquid form of jagua (genipin-glycine) blue and the polymer component of the powder is 13–18 years, and adults 19 years and older (Tables 2 and 3 above).

We have no further questions regarding the dietary exposure estimate. The petition is suitable for regulation with respect to the exposure-related information.

Renata Kolanos, Ph.D.

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| NHANES<br>Food Code | NHANES Food<br>Description                     | Proposed<br>Food Category       | Proposed<br>Food Subcategory | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the<br>Diatary |
|---------------------|--|---------------------------------|------------------------------|---|--|----------------------------|--|----------------------------|--|
|                     |  |                                 |                              |   | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                                 |
| 11115400            | Kefir, NS as to fat content                    | Dairy Drinks and<br>Substitutes | Other dairy drinks           | 100   | 20   | 40                         | 0  | 0.021                      | 80   |
| 11320000            | Soy milk                                       | Dairy Drinks and<br>Substitutes | Milk substitutes             | 100   | 10   | 20                         | 0.040  | 0.021                      | 80   |
| 11320100            | Soy milk, light                                | Dairy Drinks and<br>Substitutes | Milk substitutes             | 100   | 10   | 20                         | 0.040  | 0.021                      | 80   |
| 11320200            | Soy milk, nonfat                               | Dairy Drinks and<br>Substitutes | Milk substitutes             | 100   | 10   | 20                         | 0.040  | 0.021                      | 80   |
| 11340000            | Imitation milk, non-soy,<br>sweetened          | Dairy Drinks and<br>Substitutes | Milk substitutes             | 100   | 10   | 20                         | 0.040  | 0.021                      | 80   |
| 11350000            | Almond milk, sweetened                         | Dairy Drinks and<br>Substitutes | Milk substitutes             | 100   | 10   | 20                         | 0.040  | 0.021                      | 80   |
| 11350020            | Almond milk,<br>unsweetened                    | Dairy Drinks and<br>Substitutes | Milk substitutes             | 100   | 10   | 20                         | 0.040  | 0.021                      | 80   |
| 11360000            | Rice milk                                      | Dairy Drinks and<br>Substitutes | Milk substitutes             | 100   | 10   | 20                         | 0.040  | 0.021                      | 80   |
| 11370000            | Coconut milk                                   | Dairy Drinks and<br>Substitutes | Milk substitutes             | 100   | 10   | 20                         | 0.040  | 0.021                      | 80   |
| 11400000            | Yogurt, NFS                                    | Yogurt                          | Yogurt, regular and<br>Greek | 100   | 15   | 25                         | 0.030  | 0.016                      | 90   |
| 11400010            | Yogurt, Greek, NS as to type of milk or flavor | Yogurt                          | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90   |
| 11410000            | Yogurt, NS as to type of milk or flavor        | Yogurt                          | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90   |
| 11420000            | Yogurt, vanilla, NS as to type of milk         | Yogurt                          | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90   |
| 11421000            | Yogurt, vanilla, whole milk                    | Yogurt                          | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90   |
| 11422000            | Yogurt, vanilla, low fat<br>milk               | Yogurt                          | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90   |

# Appendix 1. NHANES Food Codes Used in the Dietary Exposure Estimate for Jagua (Genipin-Glycine) Blue

| NHANES<br>Food Code | NHANES Food<br>Description                     | Proposed<br>Food Category | Proposed<br>Food Subcategory | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|---------------------------|------------------------------|---|--|----------------------------|--|----------------------------|---|
|                     |  |                           |                              |   | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 11422100            | Yogurt, vanilla, low fat<br>milk, light        | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11423000            | Yogurt, vanilla, nonfat<br>milk                | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11424000            | Yogurt, vanilla, nonfat<br>milk, light         | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11424500            | Yogurt, Greek, vanilla,<br>whole milk          | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11424510            | Yogurt, Greek, vanilla,<br>low fat             | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11424520            | Yogurt, Greek, vanilla,<br>nonfat              | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11430000            | Yogurt, NS as to type of milk, fruit           | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11431000            | Yogurt, whole milk, fruit                      | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11432000            | Yogurt, low fat milk, fruit                    | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11432500            | Yogurt, fruit, low fat<br>milk, light          | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11433000            | Yogurt, nonfat milk, fruit                     | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11433500            | Yogurt, fruit, nonfat milk, light              | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11433990            | Yogurt, Greek, NS as to<br>type of milk, fruit | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11434000            | Yogurt, Greek, whole<br>milk, fruit            | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11434010            | Yogurt, Greek, low fat<br>milk, fruit          | Yogurt                    | Yogurt, regular and Greek    | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |
| 11434020            | Yogurt, Greek, nonfat<br>milk, fruit           | Yogurt                    | Yogurt, regular and<br>Greek | 100   | 15   | 25                         | 0.030  | 0.016                      | 90  |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category       | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | in a Giv<br>Catego | Foods<br>en Food<br>ory that<br>e Colored | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|---------------------------------|--|---|--------------------|---|--|----------------------------|---|
|                     |   | r oou entegory                  |  |   | Blue               | Green,<br>purple,<br>brown                | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 11434090            | Yogurt, NS as to type of<br>milk, flavors other than<br>fruit             | Yogurt                          | Yogurt, regular and Greek                                  | 100   | 15                 | 25  | 0.030  | 0.016                      | 90  |
| 11434100            | Yogurt, whole milk, flavors other than fruit                              | Yogurt                          | Yogurt, regular and Greek                                  | 100   | 15                 | 25  | 0.030  | 0.016                      | 90  |
| 11434200            | Yogurt, low fat milk,<br>flavors other than fruit                         | Yogurt                          | Yogurt, regular and Greek                                  | 100   | 15                 | 25  | 0.030  | 0.016                      | 90  |
| 11434300            | Yogurt, nonfat milk,<br>flavors other than fruit                          | Yogurt                          | Yogurt, regular and Greek                                  | 100   | 15                 | 25  | 0.030  | 0.016                      | 90  |
| 11435000            | Yogurt, Greek, NS as to<br>type of milk, flavors other<br>than fruit      | Yogurt                          | Yogurt, regular and<br>Greek                               | 100   | 15                 | 25  | 0.030  | 0.016                      | 90  |
| 11435010            | Yogurt, Greek, whole<br>milk, flavors other than<br>fruit                 | Yogurt                          | Yogurt, regular and<br>Greek                               | 100   | 15                 | 25  | 0.030  | 0.016                      | 90  |
| 11435020            | Yogurt, Greek, low fat<br>milk, flavors other than<br>fruit               | Yogurt                          | Yogurt, regular and<br>Greek                               | 100   | 15                 | 25  | 0.030  | 0.016                      | 90  |
| 11435030            | Yogurt, Greek, nonfat<br>milk, flavors other than<br>fruit                | Yogurt                          | Yogurt, regular and<br>Greek                               | 100   | 15                 | 25  | 0.030  | 0.016                      | 90  |
| 11435100            | Yogurt, Greek, with oats  | Yogurt                          | Yogurt, regular and Greek                                  | 80  | 15                 | 25  | 0.030  | 0.016                      | 72  |
| 11436000            | Yogurt, liquid  | Dairy Drinks and<br>Substitutes | Other dairy drinks   | 100   | 20                 | 40  | 0  | 0.021                      | 80  |
| 11446000            | Yogurt parfait, low fat,<br>with fruit                                    | Yogurt                          | Yogurt, regular and Greek                                  | 50  | 15                 | 25  | 0.030  | 0.016                      | 45  |
| 11459990            | Yogurt, frozen, NS as to<br>flavor, NS as to type of<br>milk              | Desserts                        | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100   | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 11460000            | Yogurt, frozen, flavors<br>other than chocolate, NS<br>as to type of milk | Desserts                        | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100   | 17.5               | 35  | 0.100  | 0.053                      | 360   |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category       | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | in a Giv<br>Catego | Foods<br>en Food<br>ory that<br>e Colored | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|---------------------------------|--|---|--------------------|---|--|----------------------------|---|
| 1000 2000           |   | r oou entegory                  | I oou Suscuregory  |   | Blue               | Green,<br>purple,<br>brown                | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 11460170            | Yogurt, frozen, flavors<br>other than chocolate,<br>lowfat milk                                 | Desserts                        | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100   | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 11460250            | Yogurt, frozen, flavors<br>other than chocolate, with<br>sorbet or sorbet-coated                | Desserts                        | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100   | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 11460300            | Yogurt, frozen, flavors<br>other than chocolate,<br>nonfat milk                                 | Desserts                        | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100   | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 11460410            | Yogurt, frozen, flavors<br>other than chocolate,<br>nonfat milk, with low-<br>calorie sweetener | Desserts                        | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100   | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 11461000            | Yogurt, frozen, chocolate-<br>coated  | Desserts                        | Ice cream and frozen<br>dairy desserts<br>(including bars) | 77.6  | 17.5               | 35  | 0.100  | 0.053                      | 279.36  |
| 11461260            | Yogurt, frozen, cone,<br>flavors other than<br>chocolate  | Desserts                        | Ice cream and frozen<br>dairy desserts<br>(including bars) | 87.805  | 17.5               | 35  | 0.100  | 0.053                      | 316.098   |
| 11461270            | Yogurt, frozen, cone,<br>flavors other than<br>chocolate, lowfat milk                           | Desserts                        | Ice cream and frozen<br>dairy desserts<br>(including bars) | 94.125  | 17.5               | 35  | 0.100  | 0.053                      | 338.85  |
| 11519040            | Strawberry milk, NFS  | Flavored milk                   | Flavored milk  | 100   | 10                 | 40  | 0.040  | 0.021                      | 120   |
| 11519050            | Strawberry milk, whole  | Flavored milk                   | Flavored milk  | 100   | 10                 | 40  | 0.040  | 0.021                      | 120   |
| 11519105            | Strawberry milk, reduced fat  | Flavored milk                   | Flavored milk  | 100   | 10                 | 40  | 0.040  | 0.021                      | 120   |
| 11519200            | Strawberry milk, low fat  | Flavored milk                   | Flavored milk  | 100   | 10                 | 40  | 0.040  | 0.021                      | 120   |
| 11519205            | Strawberry milk, fat free   | Flavored milk                   | Flavored milk  | 100   | 10                 | 40  | 0.040  | 0.021                      | 120   |
| 11519215            | Strawberry milk, non-<br>dairy  | Dairy Drinks and<br>Substitutes | Milk substitutes   | 100   | 10                 | 20  | 0.040  | 0.021                      | 80  |
| 11531000            | Eggnog, regular   | Dairy Drinks and<br>Substitutes | Other dairy drinks   | 100   | 20                 | 40  | 0  | 0.021                      | 80  |

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| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category       | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |  |
|---------------------|--|---------------------------------|--|---|--|----------------------------|--|----------------------------|---|--|
| Toola Coac          |  | 1 oou Category                  | 1 oou Subcategory  |   | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |  |
| 11531500            | Eggnog, lowfat / light   | Dairy Drinks and<br>Substitutes | Other dairy drinks   | 100   | 20   | 40                         | 0  | 0.021                      | 80  |  |
| 11541120            | Milk shake, home recipe,<br>flavors other than<br>chocolate        | Dairy Drinks and<br>Substitutes | Milk shakes  | 100   | 17.5   | 35                         | 0.040  | 0.021                      | 140   |  |
| 11541135            | Milk shake, home recipe,<br>flavors other than<br>chocolate, light | Dairy Drinks and<br>Substitutes | Milk shakes  | 100   | 17.5   | 35                         | 0.040  | 0.021                      | 140   |  |
| 11542200            | Milk shake, fast food,<br>flavors other than<br>chocolate          | Dairy Drinks and<br>Substitutes | Milk shakes  | 100   | 17.5   | 35                         | 0.040  | 0.021                      | 140   |  |
| 11543010            | Milk shake, bottled,<br>flavors other than<br>chocolate            | Dairy Drinks and<br>Substitutes | Milk shakes  | 100   | 17.5   | 35                         | 0.040  | 0.021                      | 140   |  |
| 11551050            | Licuado or Batido  | Non-alcoholic<br>beverages      | Smoothies  | 100   | 10   | 15                         | 0  | 0.016                      | 20  |  |
| 11553100            | Fruit smoothie, NFS  | Non-alcoholic<br>beverages      | Smoothies  | 100   | 10   | 15                         | 0  | 0.016                      | 20  |  |
| 11553110            | Fruit smoothie, with whole fruit and dairy                         | Non-alcoholic<br>beverages      | Smoothies  | 100   | 10   | 15                         | 0  | 0.016                      | 20  |  |
| 11553120            | Fruit smoothie, with<br>whole fruit and dairy,<br>added protein    | Non-alcoholic<br>beverages      | Smoothies  | 100   | 10   | 15                         | 0  | 0.016                      | 20  |  |
| 11553130            | Fruit smoothie juice<br>drink, with dairy                          | Non-alcoholic<br>beverages      | Smoothies  | 100   | 10   | 15                         | 0  | 0.016                      | 20  |  |
| 11560000            | Chocolate milk drink   | Dairy Drinks and<br>Substitutes | Other dairy drinks   | 100   | 20   | 40                         | 0  | 0.021                      | 80  |  |
| 11830400            | Strawberry beverage<br>powder, dry mix, not<br>reconstituted       | Flavored milk                   | Flavored milk  | 1563  | 10   | 40                         | 0.040  | 0.021                      | 1875.6  |  |
| 13110000            | Ice cream, NFS   | Desserts                        | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100   | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |

| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | in a Giv<br>Catego | Foods<br>en Food<br>ory that<br>e Colored | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|---------------------------|--|--|--------------------|---|--|----------------------------|---|
|                     |  |                           |  | (Genipin-<br>Glycine)<br>Blue                  | Blue               | Green,<br>purple,<br>brown                | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 13110100            | Ice cream, regular, flavors other than chocolate                           | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13110120            | Ice cream, rich, flavors other than chocolate                              | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13110200            | Ice cream, soft serve,<br>flavors other than<br>chocolate                  | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13110220            | Ice cream, soft serve, NS<br>as to flavor                                  | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13110320            | Ice cream, no sugar<br>added, flavors other than<br>chocolate              | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13120050            | Ice cream bar or stick, not<br>chocolate covered or cake<br>covered        | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13120100            | Ice cream bar or stick,<br>chocolate covered                               | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13120110            | Ice cream bar or stick,<br>chocolate or caramel<br>covered, with nuts      | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13120121            | Ice cream bar or stick,<br>rich ice cream, thick<br>chocolate covering     | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13120130            | Ice cream bar or stick,<br>rich ice cream, chocolate<br>covered, with nuts | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13120300            | Ice cream bar, cake<br>covered   | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | in a Giv<br>Catego | Foods<br>en Food<br>ory that<br>e Colored | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|---------------------------|--|--|--------------------|---|--|----------------------------|---|
| 1 oou couc          |   | r oou category            | I oou Subcategory  | (Genipin-<br>Glycine)<br>Blue                  | Blue               | Green,<br>purple,<br>brown                | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 13120310            | Ice cream bar, stick or<br>nugget, with crunch<br>coating                           | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13120400            | Ice cream bar or stick with fruit   | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13120500            | Ice cream sandwich  | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13120550            | Ice cream cookie<br>sandwich  | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13120700            | Ice cream cone with nuts,<br>flavors other than<br>chocolate                        | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 82.693   | 17.5               | 35  | 0.100  | 0.053                      | 297.6948  |
| 13120710            | Ice cream cone, chocolate<br>covered, with nuts,<br>flavors other than<br>chocolate | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13120720            | Ice cream cone, chocolate<br>covered or dipped, flavors<br>other than chocolate     | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 84.507   | 17.5               | 35  | 0.100  | 0.053                      | 304.2252  |
| 13120730            | Ice cream cone, no<br>topping, flavors other than<br>chocolate                      | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 94.286   | 17.5               | 35  | 0.100  | 0.053                      | 339.4296  |
| 13120790            | Ice cream sundae cone   | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5               | 35  | 0.100  | 0.053                      | 360   |
| 13120800            | Ice cream soda, flavors other than chocolate  | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 26.32  | 17.5               | 35  | 0.100  | 0.053                      | 94.752  |
| 13121000            | Ice cream sundae, NS as<br>to topping, with whipped<br>cream                        | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 57.69  | 17.5               | 35  | 0.100  | 0.053                      | 207.684   |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |  |
|---------------------|---|---------------------------|--|--|--|----------------------------|--|----------------------------|---|--|
| 1 oou couc          | Description   | r oou category            | Toou Subcategory   | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |  |
| 13121000            | Ice cream sundae, NS as<br>to topping, with whipped<br>cream                    | Jams, syrups,<br>toppings | Fruit toppings, fillings, and jam                          | 30.6   | 15   | 40                         | 0.030  | 0.016                      | 33.66   |  |
| 13121100            | Ice cream sundae, fruit<br>topping, with whipped<br>cream                       | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 53.27  | 17.5   | 35                         | 0.100  | 0.053                      | 191.772   |  |
| 13121100            | Ice cream sundae, fruit<br>topping, with whipped<br>cream                       | Jams, syrups,<br>toppings | Fruit toppings, fillings, and jam                          | 30.6   | 15   | 40                         | 0.030  | 0.016                      | 33.66   |  |
| 13121300            | Ice cream sundae,<br>chocolate or fudge<br>topping, with whipped<br>cream       | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 53.3 <sup>2</sup>                              | 17.5   | 35                         | 0.100  | 0.053                      | 191.88  |  |
| 13122100            | Ice cream pie, no crust   | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13122500            | Ice cream pie, with cookie<br>crust, fudge topping, and<br>whipped cream        | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 47.503   | 17.5   | 35                         | 0.100  | 0.053                      | 171.0108  |  |
| 13127000            | Dippin' Dots, flash frozen<br>ice cream snacks, flavors<br>other than chocolate | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13130300            | Light ice cream, flavors other than chocolate                                   | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13130320            | Light ice cream, no sugar added, NS as to flavor                                | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13130330            | Light ice cream, no sugar<br>added, flavors other than<br>chocolate             | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13130600            | Light ice cream, soft<br>serve, flavors other than<br>chocolate                 | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |  |
|---------------------|---|---------------------------|--|--|--|----------------------------|--|----------------------------|---|--|
|                     |   |                           |  | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |  |
| 13130620            | Light ice cream, soft<br>serve cone, flavors other<br>than chocolate                            | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 92.3 <sup>2</sup>                              | 17.5   | 35                         | 0.100  | 0.053                      | 332.28  |  |
| 13130700            | Light ice cream, soft<br>serve, blended with candy<br>or cookies                                | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100 <sup>2</sup>                               | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13135000            | Ice cream sandwich, made<br>with light ice cream,<br>flavors other than<br>chocolate            | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13136000            | Ice cream sandwich, made<br>with light, no sugar added<br>ice cream                             | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13140100            | Light ice cream, bar or stick, chocolate coated   | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13140110            | Light ice cream, bar or<br>stick, chocolate covered,<br>with nuts                               | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13140500            | Light ice cream, cone,<br>flavors other than<br>chocolate                                       | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 92.308   | 17.5   | 35                         | 0.100  | 0.053                      | 332.3088  |  |
| 13140575            | Light ice cream, no sugar<br>added, cone, flavors other<br>than chocolate                       | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 92.308   | 17.5   | 35                         | 0.100  | 0.053                      | 332.3088  |  |
| 13140660            | Light ice cream, sundae,<br>soft serve, chocolate or<br>fudge topping, without<br>whipped cream | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 75.152   | 17.5   | 35                         | 0.100  | 0.053                      | 270.5472  |  |
| 13140670            | Light ice cream, sundae,<br>soft serve, fruit topping,<br>without whipped cream                 | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 75.15  | 17.5   | 35                         | 0.100  | 0.053                      | 270.54  |  |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category | Proposed<br>Food Subcategory  | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |  |
|---------------------|---|---------------------------|---|--|--|----------------------------|--|----------------------------|---|--|
|                     |   |                           |   | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |  |
| 13140670            | Light ice cream, sundae,<br>soft serve, fruit topping,<br>without whipped cream                     | Jams, syrups,<br>toppings | Fruit toppings, fillings, and jam                                   | 24.85  | 15   | 40                         | 0.030  | 0.016                      | 27.335  |  |
| 13140680            | Light ice cream, sundae,<br>soft serve, not fruit or<br>chocolate topping,<br>without whipped cream | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars)          | 75.15  | 17.5   | 35                         | 0.100  | 0.053                      | 270.54  |  |
| 13140680            | Light ice cream, sundae,<br>soft serve, not fruit or<br>chocolate topping,<br>without whipped cream | Jams, syrups,<br>toppings | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 24.85  | 10   | 45                         | 0.030  | 0.016                      | 24.85   |  |
| 13140700            | Light ice cream,<br>creamsicle or dreamsicle  | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars)          | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13140710            | Light ice cream,<br>creamsicle or dreamsicle,<br>no sugar added                                     | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars)          | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13150000            | Sherbet, all flavors  | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars)          | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13160160            | Fat free ice cream, no<br>sugar added, flavors other<br>than chocolate                              | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars)          | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13160400            | Fat free ice cream, flavors other than chocolate  | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars)          | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13161000            | Milk dessert bar, frozen,<br>made from lowfat milk  | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars)          | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |
| 13161500            | Milk dessert sandwich<br>bar, frozen, made from<br>lowfat milk                                      | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars)          | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |  |

| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|---------------------------|--|--|--|----------------------------|--|----------------------------|---|
|                     | 2 osci pion  | r oou entegory            | 1 oou our curregory  | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 13161600            | Milk dessert bar, frozen,<br>made from lowfat milk<br>and low calorie sweetener  | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |
| 13161630            | Light ice cream, bar or<br>stick, with low-calorie<br>sweetener, chocolate<br>coated   | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |
| 13200110            | Pudding, NFS   | Desserts                  | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 13210110            | Pudding, bread   | Desserts                  | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 13210180            | Pudding, Mexican bread   | Desserts                  | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 13210270            | Custard, Puerto Rican style  | Desserts                  | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 13210280            | Pudding, flavors other<br>than chocolate, NS as to<br>from dry mix or ready-to-<br>eat   | Desserts                  | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 13210290            | Pudding, flavors other<br>than chocolate, low<br>calorie, containing<br>artificial sweetener, NS as<br>to from dry mix or ready-<br>to-eat | Desserts                  | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 13210300            | Custard  | Desserts                  | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 13210350            | Flan   | Desserts                  | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 13210410            | Pudding, rice  | Desserts                  | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 13210450            | Pudding, rice flour, and nuts  | Desserts                  | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 13210520            | Pudding, tapioca, made<br>from dry mix, made with<br>milk  | Desserts                  | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 13210610            | Pudding, coconut   | Desserts                  | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |

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| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category | Proposed<br>Food Subcategory | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Use Level<br>Used in the                   |  |
|---------------------|--|---------------------------|------------------------------|--|--|----------------------------|--|----------------------------|--|--|
| 1 oou couc          | Description  | i oou category            | Tood Subcategory             | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg) |  |
| 13210750            | Pudding, pumpkin   | Desserts                  | Pudding                      | 100  | 10   | 50                         | 0  | 0.021                      | 110  |  |
| 13210810            | Pumpkin pudding, Puerto<br>Rican style   | Desserts                  | Pudding                      | 100  | 10   | 50                         | 0  | 0.021                      | 110  |  |
| 13210820            | Fresh corn custard, Puerto<br>Rican style  | Desserts                  | Pudding                      | 100  | 10   | 50                         | 0  | 0.021                      | 110  |  |
| 13220110            | Pudding, flavors other<br>than chocolate, prepared<br>from dry mix, milk added   | Desserts                  | Pudding                      | 100  | 10   | 50                         | 0  | 0.021                      | 110  |  |
| 13220210            | Pudding, flavors other<br>than chocolate, prepared<br>from dry mix, low calorie,<br>containing artificial<br>sweetener, milk added | Desserts                  | Pudding                      | 100  | 10   | 50                         | 0  | 0.021                      | 110  |  |
| 13220240            | Pudding, ready-to-eat,<br>flavors other than<br>chocolate, reduced fat   | Desserts                  | Pudding                      | 100  | 10   | 50                         | 0  | 0.021                      | 110  |  |
| 13230110            | Pudding, ready-to-eat,<br>flavors other than<br>chocolate  | Desserts                  | Pudding                      | 100  | 10   | 50                         | 0  | 0.021                      | 110  |  |
| 13230120            | Pudding, ready-to-eat,<br>low calorie, containing<br>artificial sweetener,<br>flavors other than<br>chocolate                      | Desserts                  | Pudding                      | 100  | 10   | 50                         | 0  | 0.021                      | 110  |  |
| 13230200            | Pudding, ready-to-eat,<br>chocolate and non-<br>chocolate flavors<br>combined  | Desserts                  | Pudding                      | 100  | 10   | 50                         | 0  | 0.021                      | 110  |  |
| 13230500            | Pudding, ready-to-eat,<br>tapioca  | Desserts                  | Pudding                      | 100  | 10   | 50                         | 0  | 0.021                      | 110  |  |
| 13230510            | Pudding, ready-to-eat,<br>tapioca, fat free  | Desserts                  | Pudding                      | 100  | 10   | 50                         | 0  | 0.021                      | 110  |  |

| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category  | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|----------------------------|--|--|--|----------------------------|--|----------------------------|---|
| i oou couc          | Description  | r oou category             | i ood Subcategory  | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 13241000            | Pudding, with fruit and vanilla wafers   | Desserts                   | Pudding  | 42.72  | 10   | 50                         | 0  | 0.021                      | 46.992  |
| 13250100            | Mousse, not chocolate  | Desserts                   | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 13252200            | Milk dessert or milk<br>candy, Puerto Rican style  | Desserts                   | Pudding  | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 14420200            | Cheese spread, cream cheese, regular   | Fats and Oils              | Cream cheese-based spread, flavored                        | 100  | 0  | 80                         | 0  | 0.011                      | 90  |
| 14420210            | Cheese spread, cream<br>cheese, light or lite  | Fats and Oils              | Cream cheese-based spread, flavored                        | 100  | 0  | 80                         | 0  | 0.011                      | 90  |
| 28143200            | Chicken in soy-based<br>sauce, rice and<br>vegetables, frozen meal                                   | Jams, syrups,<br>toppings  | Fruit toppings, fillings, and jam                          | 0.6  | 15   | 40                         | 0.030  | 0.016                      | 0.66  |
| 32401000            | Meringues  | Candy                      | Candy not containing chocolate                             | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 41310900            | Bean chips   | Savory snacks and crackers | Tortilla, corn, other chips                                | 100  | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 41410015            | Soy chips  | Savory snacks and crackers | Tortilla, corn, other chips                                | 100  | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 41420380            | Yogurt, soy  | Yogurt                     | Yogurt, dairy<br>alternative                               | 100  | 15   | 25                         | 0.050  | 0.026                      | 140   |
| 41480000            | Tofu, frozen dessert,<br>flavors other than<br>chocolate   | Desserts                   | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |
| 42203000            | Peanut butter and jelly  | Jams, syrups,<br>toppings  | Fruit toppings, fillings,<br>and jam                       | 50   | 15   | 40                         | 0.030  | 0.016                      | 55  |
| 42302010            | Peanut butter and jelly sandwich, NFS  | Jams, syrups,<br>toppings  | Fruit toppings, fillings,<br>and jam                       | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |
| 42302015            | Peanut butter and jelly<br>sandwich, with regular<br>peanut butter, regular<br>jelly, on white bread | Jams, syrups,<br>toppings  | Fruit toppings, fillings,<br>and jam                       | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |
| 42302020            | Peanut butter and jelly sandwich, with regular   | Jams, syrups,<br>toppings  | Fruit toppings, fillings, and jam                          | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |  |
|---------------------|---|---------------------------|--------------------------------------|--|--|----------------------------|--|----------------------------|---|--|
|                     | 2.00.1000   | 1 oou energery            | 1 oou sussengery                     | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |  |
|                     | peanut butter, regular<br>jelly, on wheat bread   |                           |                                      |  |  |                            |  |                            |   |  |
| 42302025            | Peanut butter and jelly<br>sandwich, with regular<br>peanut butter, regular<br>jelly, on whole wheat<br>bread     | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |  |
| 42302055            | Peanut butter and jelly<br>sandwich, with reduced<br>fat peanut butter, regular<br>jelly, on white bread          | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |  |
| 42302060            | Peanut butter and jelly<br>sandwich, with reduced<br>fat peanut butter, regular<br>jelly, on wheat bread          | Jams, syrups,<br>toppings | Fruit toppings, fillings, and jam    | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |  |
| 42302065            | Peanut butter and jelly<br>sandwich, with reduced<br>fat peanut butter, regular<br>jelly, on whole wheat<br>bread | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |  |
| 42302105            | Peanut butter and jelly<br>sandwich, with regular<br>peanut butter, reduced<br>sugar jelly, on white<br>bread     | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |  |
| 42302110            | Peanut butter and jelly<br>sandwich, with regular<br>peanut butter, reduced<br>sugar jelly, on wheat<br>bread     | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |  |
| 42302115            | Peanut butter and jelly<br>sandwich, with regular<br>peanut butter, reduced                                       | Jams, syrups,<br>toppings | Fruit toppings, fillings, and jam    | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |  |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category  | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua - | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |  |
|---------------------|---|----------------------------|--|--|--|----------------------------|--|----------------------------|---|--|
| Toou Couc           | Description   | r oou category             | I ood Subcategory  | (Genipin-<br>Glycine)<br>Blue                    | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |  |
|                     | sugar jelly, on whole<br>wheat bread  |                            |  |  |  |                            |  |                            |   |  |
| 42302155            | Peanut butter and jelly<br>sandwich, with reduced<br>fat peanut butter, reduced<br>sugar jelly, on white<br>bread       | Jams, syrups,<br>toppings  | Fruit toppings, fillings,<br>and jam                       | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |  |
| 42302160            | Peanut butter and jelly<br>sandwich, with reduced<br>fat peanut butter, reduced<br>sugar jelly, on wheat<br>bread       | Jams, syrups,<br>toppings  | Fruit toppings, fillings,<br>and jam                       | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |  |
| 42302165            | Peanut butter and jelly<br>sandwich, with reduced<br>fat peanut butter, reduced<br>sugar jelly, on whole<br>wheat bread | Jams, syrups,<br>toppings  | Fruit toppings, fillings,<br>and jam                       | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |  |
| 42303100            | Peanut butter and jelly<br>sandwich, frozen<br>commercial product<br>without crusts                                     | Jams, syrups,<br>toppings  | Fruit toppings, fillings,<br>and jam                       | 17.86  | 15   | 40                         | 0.030  | 0.016                      | 19.646  |  |
| 42401100            | Yogurt, coconut milk  | Yogurt                     | Yogurt, dairy<br>alternative                               | 100  | 15   | 25                         | 0.050  | 0.026                      | 140   |  |
| 42404010            | Coconut water, sweetened  | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |  |
| 51160110            | Roll, sweet, cinnamon<br>bun, frosted   | Jams, syrups,<br>toppings  | Icing & frosting   | 20   | 10   | 30                         | 0.030  | 0.016                      | 16  |  |
| 51161020            | Roll, sweet, with fruit, frosted  | Jams, syrups,<br>toppings  | Icing & frosting   | 20   | 10   | 30                         | 0.030  | 0.016                      | 16  |  |
| 51161050            | Roll, sweet, frosted  | Jams, syrups,<br>toppings  | Icing & frosting   | 20   | 10   | 30                         | 0.030  | 0.016                      | 16  |  |
| 51161270            | Pan Dulce, with sugar topping   | Jams, syrups,<br>toppings  | Icing & frosting   | 20   | 10   | 30                         | 0.030  | 0.016                      | 16  |  |

| NHANES<br>Food Code   | NHANES Food<br>Description   | Proposed<br>Food Category | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|-----------------------|--|---------------------------|--------------------------------------|--|--|----------------------------|--|----------------------------|---|
| Tool Couc             | Description  | r oou category            | 1 oou Subcategory                    | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 51161280              | Pan Dulce, with raisins<br>and icing   | Jams, syrups,<br>toppings | Icing & frosting                     | 20   | 10   | 30                         | 0.030  | 0.016                      | 16  |
| 51165000              | Coffee cake, yeast type  | Jams, syrups,<br>toppings | Icing & frosting                     | 20   | 10   | 30                         | 0.030  | 0.016                      | 16  |
| 51166500 <sup>1</sup> | Croissant, fruit   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55   | 15   | 40                         | 0.030  | 0.016                      | 60.5  |
| 53100100              | Cake or cupcake, NS as to type   | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53101200              | Cake, angel food, with icing or filling  | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53101250              | Cake, angel food, with<br>fruit and icing or filling                           | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53102200              | Cake or cupcake,<br>applesauce, with icing or<br>filling                       | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53102700              | Cake or cupcake, banana,<br>with icing or filling                              | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53102800              | Cake or cupcake, Black<br>Forest   | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53104260              | Cake or cupcake, carrot,<br>with icing or filling                              | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53104400              | Cake or cupcake, coconut,<br>with icing or filling                             | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53105270              | Cake or cupcake,<br>chocolate, devil's food or<br>fudge, with icing or filling | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53105300              | Cake or cupcake, German<br>chocolate, with icing or<br>filling                 | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53105500              | Cake, chocolate, with icing, diet  | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53108200              | Snack cake, chocolate,<br>with icing or filling                                | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |

| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|---------------------------|--|--|--|----------------------------|--|----------------------------|---|
| 1000 2000           | Description  | r oou entegory            | I oou Subcategory  | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 53108220            | Snack cake, chocolate,<br>with icing or filling,<br>reduced fat and calories | Jams, syrups,<br>toppings | Icing & frosting   | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53109200            | Snack cake, not<br>chocolate, with icing or<br>filling                       | Jams, syrups,<br>toppings | Icing & frosting   | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53111000            | Cake or cupcake,<br>gingerbread  | Jams, syrups,<br>toppings | Icing & frosting   | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53112000            | Cake, ice cream and cake roll, chocolate                                     | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 41.63  | 17.5   | 35                         | 0.100  | 0.053                      | 149.868   |
| 53112100            | Cake, ice cream and cake roll, not chocolate                                 | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 41.63  | 17.5   | 35                         | 0.100  | 0.053                      | 149.868   |
| 53113000            | Cake, jelly roll   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam                       | 22.22  | 15   | 40                         | 0.030  | 0.016                      | 24.442  |
| 53114100            | Cake or cupcake, lemon,<br>with icing or filling                             | Jams, syrups,<br>toppings | Icing & frosting   | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53115200            | Cake or cupcake, marble,<br>with icing or filling                            | Jams, syrups,<br>toppings | Icing & frosting   | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53115320            | Cake or cupcake, nut,<br>with icing or filling                               | Jams, syrups,<br>toppings | Icing & frosting   | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53115410            | Cake or cupcake, oatmeal   | Jams, syrups,<br>toppings | Icing & frosting   | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53115450            | Cake or cupcake, peanut butter   | Jams, syrups,<br>toppings | Icing & frosting   | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53116020            | Cake, pound, with icing or filling   | Jams, syrups,<br>toppings | Icing & frosting   | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53116510            | Cake or cupcake,<br>pumpkin, with icing or<br>filling                        | Jams, syrups,<br>toppings | Icing & frosting   | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53116550            | Cake or cupcake, raisin-<br>nut  | Jams, syrups,<br>toppings | Icing & frosting   | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |

| NHANES<br>Food Code   | NHANES Food<br>Description                                       | Proposed<br>Food Category | Proposed<br>Food Subcategory | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|-----------------------|--|---------------------------|------------------------------|--|--|----------------------------|--|----------------------------|---|
| Toou couc             | Description  | r oou category            |                              | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 53117200              | Cake or cupcake, spice,<br>with icing or filling                 | Jams, syrups,<br>toppings | Icing & frosting             | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53118200              | Cake, sponge, with icing or filling                              | Jams, syrups,<br>toppings | Icing & frosting             | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53118300              | Cake, sponge, chocolate  | Jams, syrups,<br>toppings | Icing & frosting             | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53118500              | Cake, torte  | Jams, syrups,<br>toppings | Icing & frosting             | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53118550              | Cake, tres leche   | Jams, syrups,<br>toppings | Icing & frosting             | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53120270              | Cake or cupcake, white,<br>with icing or filling                 | Jams, syrups,<br>toppings | Icing & frosting             | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53121270              | Cake or cupcake, yellow,<br>with icing or filling                | Jams, syrups,<br>toppings | Icing & frosting             | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 531230701             | Cake, shortcake, sponge<br>type, with whipped cream<br>and fruit | Jams, syrups,<br>toppings | Icing & frosting             | 40   | 10   | 30                         | 0.03   | 0.016                      | 32  |
| 53123080              | Cake, shortcake, sponge<br>type, with fruit                      | Jams, syrups,<br>toppings | Icing & frosting             | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53124110              | Cake or cupcake, zucchini  | Jams, syrups,<br>toppings | Icing & frosting             | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53201000 <sup>1</sup> | Cookie, NFS  | Jams, syrups,<br>toppings | Icing & frosting             | 30   | 10   | 30                         | 0.03   | 0.016                      | 24  |
| 53204000              | Cookie, brownie, NS as to icing                                  | Jams, syrups,<br>toppings | Icing & frosting             | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53204100              | Cookie, brownie, with<br>icing or filling                        | Jams, syrups,<br>toppings | Icing & frosting             | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 532048401             | Cookie, brownie, reduced<br>fat, NS as to icing                  | Jams, syrups,<br>toppings | Icing & frosting             | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53205250 <sup>1</sup> | Cookie, butterscotch,<br>brownie                                 | Jams, syrups,<br>toppings | Icing & frosting             | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53206100              | Cookie, chocolate chip sandwich                                  | Jams, syrups,<br>toppings | Icing & frosting             | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |

| NHANES<br>Food Code | NHANES Food<br>Description                                  | Proposed<br>Food Category | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|---------------------------|--------------------------------------|--|--|----------------------------|--|----------------------------|---|
| roou couc           | Description   | Food Category             | Food Subcategory                     | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 53208000            | Cookie, marshmallow,<br>chocolate-covered                   | Jams, syrups,<br>toppings | Icing & frosting                     | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53208200            | Cookie, marshmallow pie,<br>chocolate covered               | Jams, syrups,<br>toppings | Icing & frosting                     | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53209005            | Cookie, chocolate, with icing or coating                    | Jams, syrups,<br>toppings | Icing & frosting                     | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53209010            | Cookie, sugar wafer,<br>chocolate-covered                   | Jams, syrups,<br>toppings | Icing & frosting                     | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53209015            | Cookie, chocolate sandwich                                  | Jams, syrups,<br>toppings | Icing & frosting                     | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53209020            | Cookie, chocolate<br>sandwich, reduced fat                  | Jams, syrups,<br>toppings | Icing & frosting                     | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53209100            | Cookie, chocolate,<br>sandwich, with extra<br>filling       | Jams, syrups,<br>toppings | Icing & frosting                     | 40   | 10   | 30                         | 0.030  | 0.016                      | 32  |
| 53209500            | Cookie, chocolate and vanilla sandwich                      | Jams, syrups,<br>toppings | Icing & frosting                     | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53210900            | Cookie, graham cracker<br>with chocolate and<br>marshmallow | Jams, syrups,<br>toppings | Icing & frosting                     | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53220000            | Cookie, fruit-filled bar                                    | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 30   | 15   | 40                         | 0.030  | 0.016                      | 33  |
| 53220010            | Cookie, fruit-filled bar, fat free                          | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 30   | 15   | 40                         | 0.030  | 0.016                      | 33  |
| 53220030            | Cookie, fig bar   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 30   | 15   | 40                         | 0.030  | 0.016                      | 33  |
| 53220040            | Cookie, fig bar, fat free                                   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 30   | 15   | 40                         | 0.030  | 0.016                      | 33  |
| 53224250            | Cookie, lemon bar   | Jams, syrups,<br>toppings | Icing & frosting                     | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53225000            | Cookie, macaroon  | Jams, syrups,<br>toppings | Icing & frosting                     | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |
| 53226000            | Cookie, marshmallow, with coconut                           | Jams, syrups,<br>toppings | Icing & frosting                     | 30   | 10   | 30                         | 0.030  | 0.016                      | 24  |

| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category | Proposed<br>Food Subcategory | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Use Level<br>Used in the<br>Dietary        |
|---------------------|--|---------------------------|------------------------------|---|--|----------------------------|--|----------------------------|--|
|                     |  | i oou category            | i oou suscutegory            |   | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg) |
| 53226500            | Cookie, marshmallow,<br>with rice cereal, no bake                    | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53226550            | Cookie, marshmallow,<br>with rice cereal and<br>chocolate chips      | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53233000            | Cookie, oatmeal  | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53233010            | Cookie, oatmeal, with raisins  | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 532330401           | Cookie, oatmeal, reduced fat, NS as to raisins                       | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.03   | 0.016                      | 24   |
| 53233050            | Cookie, oatmeal<br>sandwich, with creme<br>filling                   | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53233080            | Cookie, oatmeal<br>sandwich, with peanut<br>butter and jelly filling | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53234100            | Cookie, peanut butter,<br>with chocolate                             | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53234250            | Cookie, peanut butter<br>with rice cereal, no bake                   | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53235000            | Cookie, peanut butter<br>sandwich                                    | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53235500            | Cookie, with peanut<br>butter filling, chocolate-<br>coated          | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53237010            | Cookie, raisin sandwich, cream-filled                                | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53238000            | Cookie, sandwich-type,<br>not chocolate or vanilla                   | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53239050            | Cookie, shortbread, with icing or filling                            | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53239100            | Pocky  | Jams, syrups,<br>toppings | Icing & frosting             | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Use Level<br>Used in the<br>Dietary        |
|---------------------|---|---------------------------|--------------------------------------|---|--|----------------------------|--|----------------------------|--|
|                     |   |                           | I oou Subcategory                    |   | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg) |
| 53240000            | Cookie, animal  | Jams, syrups,<br>toppings | Icing & frosting                     | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53240010            | Cookie, animal, with<br>frosting or icing                                 | Jams, syrups,<br>toppings | Icing & frosting                     | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53242000            | Cookie, sugar wafer   | Jams, syrups,<br>toppings | Icing & frosting                     | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53243000            | Cookie, vanilla sandwich  | Jams, syrups,<br>toppings | Icing & frosting                     | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53243010            | Cookie, vanilla sandwich,<br>extra filling                                | Jams, syrups,<br>toppings | Icing & frosting                     | 40  | 10   | 30                         | 0.030  | 0.016                      | 32   |
| 53243050            | Cookie, vanilla sandwich, reduced fat                                     | Jams, syrups,<br>toppings | Icing & frosting                     | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53244020            | Cookie, butter or sugar,<br>with icing or filling other<br>than chocolate | Jams, syrups,<br>toppings | Icing & frosting                     | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53247000            | Cookie, vanilla wafer   | Jams, syrups,<br>toppings | Icing & frosting                     | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53247050            | Cookie, vanilla wafer,<br>reduced fat                                     | Jams, syrups,<br>toppings | Icing & frosting                     | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53260300            | Cookie, sandwich, sugar free  | Jams, syrups,<br>toppings | Icing & frosting                     | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53260500            | Cookie, sugar wafer,<br>sugar free  | Jams, syrups,<br>toppings | Icing & frosting                     | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |
| 53300100            | Pie, NFS  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5                                       |
| 53300170            | Pie, individual size or tart,<br>NFS                                      | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5                                       |
| 53301000            | Pie, apple, two crust   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5                                       |
| 53301070            | Pie, apple, individual size or tart                                       | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5                                       |
| 53301080            | Pie, apple, fried pie   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5                                       |

| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the<br>Dietary |
|---------------------|--|---------------------------|--------------------------------------|---|--|----------------------------|--|----------------------------|--|
|                     |  |                           |                                      |   | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                                 |
| 53301500            | Pie, apple, one crust  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53303000            | Pie, blackberry, two crust   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53303500            | Pie, berry, not blackberry,<br>blueberry, boysenberry,<br>huckleberry, raspberry, or<br>strawberry; two crust                  | Jams, syrups,<br>toppings | Fruit toppings, fillings, and jam    | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53303570            | Pie, berry, not blackberry,<br>blueberry, boysenberry,<br>huckleberry, raspberry, or<br>strawberry, individual<br>size or tart | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53304000            | Pie, blueberry, two crust  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53304050            | Pie, blueberry, one crust  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53304070            | Pie, blueberry, individual size or tart  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53305000            | Pie, cherry, two crust   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53305010            | Pie, cherry, one crust   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53305070            | Pie, cherry, individual size or tart   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53305700            | Pie, lemon, not cream or meringue  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53305720            | Pie, lemon, not cream or<br>meringue, individual size<br>or tart   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53306000            | Pie, mince, two crust  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |
| 53307000            | Pie, peach, two crust  | Jams, syrups,<br>toppings | Fruit toppings, fillings, and jam    | 85  | 15   | 40                         | 0.030  | 0.016                      | 93.5   |

| NHANES<br>Food Code | NHANES Food<br>Description                           | Proposed<br>Food Category | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|---------------------------|--------------------------------------|--|--|----------------------------|--|----------------------------|---|
|                     |  |                           |                                      | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 53307050            | Pie, peach, one crust                                | Jams, syrups,<br>toppings | Fruit toppings, fillings, and jam    | 85   | 15   | 40                         | 0.030  | 0.016                      | 93.5  |
| 53307070            | Pie, peach, individual size or tart                  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85   | 15   | 40                         | 0.030  | 0.016                      | 93.5  |
| 53308000            | Pie, pineapple, two crust                            | Jams, syrups,<br>toppings | Fruit toppings, fillings, and jam    | 85   | 15   | 40                         | 0.030  | 0.016                      | 93.5  |
| 53309000            | Pie, raisin, two crust                               | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85   | 15   | 40                         | 0.030  | 0.016                      | 93.5  |
| 53310050            | Pie, raspberry, two crust                            | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85   | 15   | 40                         | 0.030  | 0.016                      | 93.5  |
| 53311000            | Pie, rhubarb, two crust                              | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85   | 15   | 40                         | 0.030  | 0.016                      | 93.5  |
| 53311050            | Pie, rhubarb, one crust                              | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85   | 15   | 40                         | 0.030  | 0.016                      | 93.5  |
| 53311070            | Pie, rhubarb, individual size or tart                | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85   | 15   | 40                         | 0.030  | 0.016                      | 93.5  |
| 53312000            | Pie, strawberry, one crust                           | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85   | 15   | 40                         | 0.030  | 0.016                      | 93.5  |
| 53313000            | Pie, strawberry-rhubarb,<br>two crust                | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85   | 15   | 40                         | 0.030  | 0.016                      | 93.5  |
| 53314000            | Pie, strawberry, individual size or tart             | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85   | 15   | 40                         | 0.030  | 0.016                      | 93.5  |
| 53341000            | Pie, banana cream                                    | Desserts                  | Pudding                              | 85   | 10   | 50                         | 0  | 0.021                      | 93.5  |
| 53341750            | Pie, chess   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 85   | 15   | 40                         | 0.030  | 0.016                      | 93.5  |
| 53343000            | Pie, coconut cream                                   | Desserts                  | Pudding                              | 85   | 10   | 50                         | 0  | 0.021                      | 93.5  |
| 53343070            | Pie, coconut cream,<br>individual size or tart       | Desserts                  | Pudding                              | 85   | 10   | 50                         | 0  | 0.021                      | 93.5  |
| 53344000            | Pie, custard   | Desserts                  | Pudding                              | 85   | 10   | 50                         | 0  | 0.021                      | 93.5  |
| 53344200            | Mixed fruit tart filled with custard or cream cheese | Desserts                  | Pudding                              | 6.392  | 10   | 50                         | 0  | 0.021                      | 7.0312  |

| NHANES<br>Food Code | NHANES Food<br>Description                           | Proposed<br>Food Category | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the<br>Dietary |
|---------------------|--|---------------------------|--|---|--|----------------------------|--|----------------------------|--|
|                     |  |                           | 1 oou Subeniegory  |   | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                                 |
| 53344200            | Mixed fruit tart filled with custard or cream cheese | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam                       | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53344300            | Dessert pizza  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam                       | 15.66   | 15   | 40                         | 0.030  | 0.016                      | 17.226   |
| 53345000            | Pie, lemon cream                                     | Desserts                  | Pudding  | 85  | 10   | 50                         | 0  | 0.021                      | 93.5   |
| 53345070            | Pie, lemon cream,<br>individual size or tart         | Desserts                  | Pudding  | 85  | 10   | 50                         | 0  | 0.021                      | 93.5   |
| 53346000            | Pie, peanut butter cream                             | Desserts                  | Pudding  | 85  | 10   | 50                         | 0  | 0.021                      | 93.5   |
| 53346500            | Pie, pineapple cream                                 | Desserts                  | Pudding  | 85  | 10   | 50                         | 0  | 0.021                      | 93.5   |
| 53347000            | Pie, pumpkin   | Desserts                  | Pudding  | 85  | 10   | 50                         | 0  | 0.021                      | 93.5   |
| 53347070            | Pie, pumpkin, individual size or tart                | Desserts                  | Pudding  | 85  | 10   | 50                         | 0  | 0.021                      | 93.5   |
| 53347600            | Pie, squash  | Desserts                  | Pudding  | 85  | 10   | 50                         | 0  | 0.021                      | 93.5   |
| 53348000            | Pie, strawberry cream                                | Desserts                  | Pudding  | 85  | 10   | 50                         | 0  | 0.021                      | 93.5   |
| 53360000            | Pie, sweet potato                                    | Desserts                  | Pudding  | 85  | 10   | 50                         | 0  | 0.021                      | 93.5   |
| 53365000            | Pie, vanilla cream                                   | Desserts                  | Pudding  | 85  | 10   | 50                         | 0  | 0.021                      | 93.5   |
| 53366000            | Pie, yogurt, frozen                                  | Desserts                  | Ice cream and frozen<br>dairy desserts<br>(including bars) | 85  | 17.5   | 35                         | 0.100  | 0.053                      | 306  |
| 53381000            | Pie, lemon meringue                                  | Desserts                  | Pudding  | 85  | 10   | 50                         | 0  | 0.021                      | 93.5   |
| 53386000            | Pie, pudding, flavors<br>other than chocolate        | Desserts                  | Pudding  | 70.95   | 10   | 50                         | 0  | 0.021                      | 78.045   |
| 53410100            | Cobbler, apple                                       | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam                       | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53410300            | Cobbler, berry                                       | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam                       | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53410500            | Cobbler, cherry                                      | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam                       | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53410800            | Cobbler, peach                                       | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam                       | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |

| NHANES<br>Food Code   | NHANES Food<br>Description                                  | Proposed<br>Food Category | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the<br>Dietary |
|-----------------------|---|---------------------------|--------------------------------------|---|--|----------------------------|--|----------------------------|--|
|                       |   |                           |                                      |   | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                                 |
| 53410860              | Cobbler, pineapple  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53410900              | Cobbler, rhubarb  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53415100              | Crisp, apple, apple dessert                                 | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53415120              | Fritter, apple  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53415200              | Fritter, banana   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53415220              | Fritter, berry  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53415400              | Crisp, cherry   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53415500              | Crisp, peach  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53420100              | Cream puff, eclair,<br>custard or cream filled,<br>not iced | Desserts                  | Pudding                              | 55  | 10   | 50                         | 0  | 0.021                      | 60.5   |
| 53420200              | Cream puff, eclair,<br>custard or cream filled,<br>iced     | Desserts                  | Pudding                              | 55  | 10   | 50                         | 0  | 0.021                      | 60.5   |
| 53420200              | Cream puff, eclair,<br>custard or cream filled,<br>iced     | Jams, syrups,<br>toppings | Icing & frosting                     | 20  | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53430000 <sup>1</sup> | Crepe, NS as to filling                                     | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53430200              | Crepe, fruit filled   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53430750              | Tamale, sweet, with fruit                                   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53440000              | Strudel, apple  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |

| NHANES<br>Food Code | NHANES Food<br>Description                                    | Proposed<br>Food Category | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Úse Level<br>Used in the<br>Dietary        |
|---------------------|---|---------------------------|--------------------------------------|--|--|----------------------------|--|----------------------------|--|
|                     |   |                           |                                      | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg) |
| 53440300            | Strudel, berry  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55   | 15   | 40                         | 0.030  | 0.016                      | 60.5                                       |
| 53440500            | Strudel, cherry   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55   | 15   | 40                         | 0.030  | 0.016                      | 60.5                                       |
| 53440600            | Strudel, cheese   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55   | 15   | 40                         | 0.030  | 0.016                      | 60.5                                       |
| 53450000            | Turnover or dumpling, apple                                   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55   | 15   | 40                         | 0.030  | 0.016                      | 60.5                                       |
| 53450300            | Turnover or dumpling,<br>berry                                | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55   | 15   | 40                         | 0.030  | 0.016                      | 60.5                                       |
| 53450500            | Turnover or dumpling,<br>cherry                               | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55   | 15   | 40                         | 0.030  | 0.016                      | 60.5                                       |
| 53450800            | Turnover or dumpling,<br>lemon                                | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55   | 15   | 40                         | 0.030  | 0.016                      | 60.5                                       |
| 53451500            | Turnover, guava   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55   | 15   | 40                         | 0.030  | 0.016                      | 60.5                                       |
| 53452100            | Pastry, fruit-filled  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55   | 15   | 40                         | 0.030  | 0.016                      | 60.5                                       |
| 53452170            | Pastry, cookie type, fried                                    | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 5.7  | 15   | 40                         | 0.030  | 0.016                      | 6.27                                       |
| 53452420            | Pastry, puff, custard or<br>cream filled, iced or not<br>iced | Desserts                  | Pudding                              | 55   | 10   | 50                         | 0  | 0.021                      | 60.5                                       |
| 53452420            | Pastry, puff, custard or<br>cream filled, iced or not<br>iced | Jams, syrups,<br>toppings | Icing & frosting                     | 20   | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53453150            | Empanada, Mexican<br>turnover, fruit-filled                   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55   | 15   | 40                         | 0.030  | 0.016                      | 60.5                                       |
| 53510000            | Danish pastry, plain or<br>spice                              | Jams, syrups,<br>toppings | Icing & frosting                     | 20   | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53510100            | Danish pastry, with fruit                                     | Jams, syrups,<br>toppings | Icing & frosting                     | 20   | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53510100            | Danish pastry, with fruit                                     | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55   | 15   | 40                         | 0.030  | 0.016                      | 60.5                                       |

| NHANES<br>Food Code   | NHANES Food<br>Description                                   | Proposed<br>Food Category | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the<br>Dietary |
|-----------------------|--|---------------------------|--------------------------------------|---|--|----------------------------|--|----------------------------|--|
|                       |  |                           | 1 oou Subenegory                     |   | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                                 |
| 53511000 <sup>1</sup> | Danish pastry, with cheese                                   | Jams, syrups,<br>toppings | Icing & frosting                     | 20  | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53520110              | Doughnut, cake type  | Jams, syrups,<br>toppings | Icing & frosting                     | 20  | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53520120              | Doughnut, chocolate,<br>cake type                            | Jams, syrups,<br>toppings | Icing & frosting                     | 20  | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53521110              | Doughnut, raised or yeast                                    | Jams, syrups,<br>toppings | Icing & frosting                     | 20  | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53521120              | Doughnut, chocolate,<br>raised or yeast                      | Jams, syrups,<br>toppings | Icing & frosting                     | 20  | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53521140              | Doughnut, jelly  | Jams, syrups,<br>toppings | Icing & frosting                     | 20  | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53521140              | Doughnut, jelly  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53521210              | Doughnut, custard-filled                                     | Desserts                  | Pudding                              | 55  | 10   | 50                         | 0  | 0.021                      | 60.5   |
| 53521210              | Doughnut, custard-filled                                     | Jams, syrups,<br>toppings | Icing & frosting                     | 20  | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53521230              | Doughnut, custard-filled,<br>with icing                      | Desserts                  | Pudding                              | 55  | 10   | 50                         | 0  | 0.021                      | 60.5   |
| 53521230              | Doughnut, custard-filled,<br>with icing                      | Jams, syrups,<br>toppings | Icing & frosting                     | 20  | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53530000              | Breakfast tart   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53530010              | Breakfast tart, lowfat                                       | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 55  | 15   | 40                         | 0.030  | 0.016                      | 60.5   |
| 53610100              | Coffee cake, crumb or quick-bread type                       | Jams, syrups,<br>toppings | Icing & frosting                     | 20  | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 53610200 <sup>1</sup> | Coffee cake, crumb or<br>quick-bread type, cheese-<br>filled | Jams, syrups,<br>toppings | Icing & frosting                     | 20  | 10   | 30                         | 0.030  | 0.016                      | 16   |
| 54102200              | Graham crackers, sandwich, with filling                      | Jams, syrups,<br>toppings | Icing & frosting                     | 30  | 10   | 30                         | 0.030  | 0.016                      | 24   |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category  | Proposed<br>Food Subcategory   | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|----------------------------|--------------------------------|---|--|----------------------------|--|----------------------------|---|
| r oou couc          |   |                            | i oou Subcategory              |   | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 54318000            | Chips, rice   | Savory snacks and crackers | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401010            | Salty snacks, corn or<br>cornmeal base, nuts or<br>nuggets, toasted                               | Savory snacks and crackers | Tortilla, corn, other<br>chips | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401011            | Corn nuts   | Savory snacks and crackers | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401020            | Salty snacks, corn or<br>cornmeal base, corn<br>chips, corn-cheese chips                          | Savory snacks and crackers | Tortilla, corn, other<br>chips | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401026            | Corn chips, flavored  | Savory snacks and crackers | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401035            | Corn chips, flavored<br>(Fritos)  | Savory snacks and crackers | Tortilla, corn, other<br>chips | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401050            | Salty snacks, corn or<br>cornmeal base, corn puffs<br>and twists; corn-cheese<br>puffs and twists | Savory snacks and crackers | Tortilla, corn, other<br>chips | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401055            | Cheese flavored corn<br>snacks  | Savory snacks and crackers | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401065            | Cheese flavored corn<br>snacks, reduced fat   | Savory snacks and crackers | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401080            | Salty snacks, corn or<br>cornmeal base, tortilla<br>chips   | Savory snacks and crackers | Tortilla, corn, other<br>chips | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401081            | Cheese flavored corn<br>snacks (Cheetos)  | Savory snacks and crackers | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401085            | Tortilla chips, flavored  | Savory snacks and crackers | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401090            | Corn chips, reduced sodium  | Savory snacks and crackers | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54401100            | Salty snacks, corn or cornmeal base, tortilla   | Savory snacks and crackers | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520  |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category     | Proposed<br>Food Subcategory   | % of<br>Food that<br>Could<br>Contain<br>Jagua<br>(Genipin-<br>Glycine)<br>Blue | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the<br>Dietary |
|---------------------|---|-------------------------------|--------------------------------|---|--|----------------------------|--|----------------------------|--|
| 1000 0000           |   |                               |                                |   | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                                 |
|                     | chips, light (baked with less oil)  |                               |                                |   |  |                            |  |                            |  |
| 54401110            | Tortilla chips, nacho<br>cheese flavor (Doritos)  | Savory snacks and crackers    | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520   |
| 54401111            | Tortilla chips, cool ranch<br>flavor (Doritos)  | Savory snacks and crackers    | Tortilla, corn, other<br>chips | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520   |
| 54401112            | Tortilla chips, other<br>flavors (Doritos)  | Savory snacks and crackers    | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520   |
| 54401120            | Salty snacks, corn or<br>cornmeal base, tortilla<br>chips, fat free, made with<br>Olean                                       | Savory snacks and crackers    | Tortilla, corn, other<br>chips | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520   |
| 54401122            | Tortilla chips, reduced fat, flavored   | Savory snacks and<br>crackers | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520   |
| 54401150            | Salty snacks, corn or<br>cornmeal base, tortilla<br>chips, lowfat, baked<br>without fat                                       | Savory snacks and crackers    | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520   |
| 54401170            | Tortilla chips, low fat,<br>unsalted  | Savory snacks and crackers    | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520   |
| 54401210            | Salty snacks, corn-based<br>puffs and twists, cheese<br>puffs and twists, lowfat  | Savory snacks and crackers    | Tortilla, corn, other<br>chips | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520   |
| 54402080            | Tortilla chips, reduced sodium  | Savory snacks and crackers    | Tortilla, corn, other chips    | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520   |
| 54402200            | Snack mix   | Savory snacks and crackers    | Tortilla, corn, other chips    | 23.19   | 25   | 50                         | 0.300  | 0.154                      | 352.488  |
| 54402600            | Salty snacks, multigrain,<br>whole grain, chips (made<br>with whole corn, whole<br>wheat, rice flour, and<br>whole oat flour) | Savory snacks and crackers    | Tortilla, corn, other<br>chips | 100   | 25   | 50                         | 0.300  | 0.154                      | 1520   |
| 54402610            | Potato chips, restructured, multigrain  | Savory snacks and crackers    | Potato chips, flavored         | 25  | 20   | 40                         | 0  | 0.154                      | 155  |

| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category  | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|----------------------------|--|--|--|----------------------------|--|----------------------------|---|
| Toolu Couc          | Description  | I bou Category             | i oou Subcategory  | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 54404010            | Popcorn chips, other flavors   | Savory snacks and crackers | Tortilla, corn, other chips                                | 100  | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54404020            | Popcorn chips, sweet<br>flavors  | Savory snacks and crackers | Tortilla, corn, other chips                                | 100  | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54406010            | Onion flavored rings   | Savory snacks and crackers | Tortilla, corn, other chips                                | 100  | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54406200            | Shrimp chips   | Savory snacks and crackers | Tortilla, corn, other chips                                | 100  | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54420210            | Multigrain chips (Sun<br>Chips)  | Savory snacks and crackers | Tortilla, corn, other chips                                | 100  | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 54440020            | Cracker chips  | Savory snacks and crackers | Tortilla, corn, other chips                                | 100  | 25   | 50                         | 0.300  | 0.154                      | 1520  |
| 55801010            | Funnel cake with sugar<br>and fruit  | Jams, syrups,<br>toppings  | Fruit toppings, fillings,<br>and jam                       | 24.23  | 15   | 40                         | 0.030  | 0.016                      | 26.653  |
| 56205230            | Rice dessert bar, frozen,<br>flavors other than<br>chocolate, nondairy, carob<br>covered | Desserts                   | Ice cream and frozen<br>dairy desserts<br>(including bars) | 100  | 17.5   | 35                         | 0.100  | 0.053                      | 360   |
| 57000000            | Cereal, NFS  | Cereals, RTE               | RTE cereal, multi-<br>colored                              | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57000100            | Cereal, oat, NFS   | Cereals, RTE               | RTE cereal, multi-<br>colored                              | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57100100            | Cereal, ready-to-eat, NFS  | Cereals, RTE               | RTE cereal, multi-<br>colored                              | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57103000            | Cereal (Post Alpha-Bits)   | Cereals, RTE               | RTE cereal, multi-<br>colored                              | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57103020            | Alpha-bits with<br>marshmallows  | Cereals, RTE               | RTE cereal, multi-<br>colored                              | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57104000            | Cereal (Kellogg's Apple<br>Jacks)  | Cereals, RTE               | RTE cereal, multi-<br>colored                              | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57106250            | Cereal (General Mills Kix<br>Berry Berry)  | Cereals, RTE               | RTE cereal, multi-<br>colored                              | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57106260            | Cereal (General Mills<br>Cheerios Berry Burst)   | Cereals, RTE               | RTE cereal, multi-<br>colored                              | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |

| NHANES<br>Food Code | NHANES Food<br>Description                       | d Proposed<br>Food Category | Proposed<br>Food Subcategory  | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|-----------------------------|-------------------------------|--|--|----------------------------|--|----------------------------|---|
|                     |  |                             |                               | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 57107000            | Cereal (General Mills<br>Boo Berry)              | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57117000            | Cereal (Quaker Cap'n<br>Crunch)                  | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57119000            | Cereal (Quaker Cap'n<br>Crunch's Crunchberries)  | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57124300            | Cereal (General Mills<br>Lucky Charms Chocolate) | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57201900            | Cereal (General Mills<br>Dora The Explorer)      | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57211000            | Cereal (General Mills<br>Frankenberry)           | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57213000            | Cereal (Kellogg's Froot<br>Loops)                | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57213010            | Cereal (Kellogg's Froot<br>Loops Marshmallow)    | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57214000            | Cereal (Kellogg's Frosted<br>Mini-Wheats)        | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57214100            | Frosted Wheat Bites                              | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57219000            | Cereal, fruit and fiber                          | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57221700            | Cereal, fruit rings                              | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57221800            | Cereal, fruit whirls                             | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57221810            | Cereal (General Mills<br>Cheerios Fruity)        | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57223000            | Cereal (Post Fruity<br>Pebbles)                  | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57239000            | Honeycomb, strawberry                            | Cereals, RTE                | RTE cereal, multi-<br>colored | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|---------------------------|--------------------------------------|--|--|----------------------------|--|----------------------------|---|
|                     | Description   | r oou category            | I oou Subcategory                    | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 57301535            | Cereal (Kashi Heart to<br>Heart Oat Flakes and<br>Blueberry Clusters) | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57305100            | Cereal (General Mills<br>Lucky Charms)                                | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57305150            | Cereal, frosted oat cereal with marshmallows                          | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57305174            | Cereal (Malt-O-Meal<br>Colossal Crunch)                               | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57305300            | Cereal (Malt-O-Meal<br>Fruity Dyno-Bites)                             | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57305600            | Cereal (Malt-O-Meal<br>Marshmallow Mateys)                            | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57306800            | Cereal (Malt-O-Meal<br>Tootie Fruities)                               | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57344001            | Cereal (Kellogg's Special<br>K Blueberry)                             | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57344010            | Cereal (Kellogg's Special<br>K Red Berries)                           | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57344015            | Cereal (Kellogg's Special<br>K Fruit & Yogurt)                        | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57407100            | Cereal (General Mills<br>Trix)  | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57407110            | Cereal (General Mills<br>25% Less Sugar Trix)                         | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 57419000            | Cereal (General Mills<br>Cheerios Yogurt Burst)                       | Cereals, RTE              | RTE cereal, multi-<br>colored        | 100  | 15   | 35                         | 0.500  | 0.290                      | 1770  |
| 58157210            | Rice pudding made with<br>coconut milk, Puerto<br>Rican style         | Desserts                  | Pudding                              | 100  | 10   | 50                         | 0  | 0.021                      | 110   |
| 58201005            | Jelly sandwich, regular<br>jelly, on white bread                      | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 40   | 15   | 40                         | 0.030  | 0.016                      | 44  |
| 58201015            | Jelly sandwich, regular jelly, on wheat bread                         | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 40   | 15   | 40                         | 0.030  | 0.016                      | 44  |

| NHANES<br>Food Code   | NHANES Food<br>Description                                      | Proposed<br>Food Category  | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |  |
|-----------------------|---|----------------------------|--------------------------------------|--|--|----------------------------|--|----------------------------|---|--|
| 1 oou couc            | Description   | r oou category             | I oou Subcategory                    | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |  |
| 58201025              | Jelly sandwich, regular<br>jelly, on whole wheat<br>bread       | Jams, syrups,<br>toppings  | Fruit toppings, fillings, and jam    | 40   | 15   | 40                         | 0.030  | 0.016                      | 44  |  |
| 58201045              | Jelly sandwich, reduced<br>sugar jelly, on wheat<br>bread       | Jams, syrups,<br>toppings  | Fruit toppings, fillings, and jam    | 40   | 15   | 40                         | 0.030  | 0.016                      | 44  |  |
| 61113500              | Lemon pie filling   | Jams, syrups,<br>toppings  | Fruit toppings, fillings,<br>and jam | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |  |
| 63113030              | Cherry pie filling  | Jams, syrups,<br>toppings  | Fruit toppings, fillings,<br>and jam | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |  |
| 63402990              | Fruit salad, including<br>citrus fruits, with pudding           | Desserts                   | Pudding                              | 22.28  | 10   | 50                         | 0  | 0.021                      | 24.508  |  |
| 63403000              | Fruit salad, excluding<br>citrus fruits, with pudding           | Desserts                   | Pudding                              | 22.71  | 10   | 50                         | 0  | 0.021                      | 24.981  |  |
| 63403100 <sup>1</sup> | Fruit dessert with cream and/or pudding and nuts                | Desserts                   | Pudding                              | 58.4   | 10   | 50                         | 0  | 0.021                      | 64.24   |  |
| 63420110              | Fruit juice bar, frozen,<br>flavor other than orange            | Desserts                   | Gelatins, ices, sorbets              | 100  | 10   | 30                         | 0.030  | 0.016                      | 80  |  |
| 63430100              | Sorbet, fruit, noncitrus<br>flavor                              | Desserts                   | Gelatins, ices, sorbets              | 100  | 10   | 30                         | 0.030  | 0.016                      | 80  |  |
| 63430500              | Fruit juice bar with cream, frozen                              | Desserts                   | Gelatins, ices, sorbets              | 100  | 10   | 30                         | 0.030  | 0.016                      | 80  |  |
| 64134015              | Fruit smoothie, with<br>whole fruit, no dairy                   | Non-alcoholic<br>beverages | Smoothies                            | 100  | 10   | 15                         | 0  | 0.016                      | 20  |  |
| 64134020              | Fruit smoothie, with<br>whole fruit, no dairy,<br>added protein | Non-alcoholic<br>beverages | Smoothies                            | 100  | 10   | 15                         | 0  | 0.016                      | 20  |  |
| 64134030              | Fruit smoothie juice<br>drink, no dairy                         | Non-alcoholic<br>beverages | Smoothies                            | 100  | 10   | 15                         | 0  | 0.016                      | 20  |  |
| 64134100              | Fruit smoothie, light   | Non-alcoholic<br>beverages | Smoothies                            | 100  | 10   | 15                         | 0  | 0.016                      | 20  |  |
| 64134200              | Fruit smoothie, bottled   | Non-alcoholic<br>beverages | Smoothies                            | 100  | 10   | 15                         | 0  | 0.016                      | 20  |  |

| NHANES<br>Food Code | NHANES Food<br>Description      | Proposed<br>Food Category  | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua - | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |  |
|---------------------|---------------------------------|----------------------------|--|--|--|----------------------------|--|----------------------------|---|--|
| roou couc           | Description                     | roou category              | rood Subcategory   | (Genipin-<br>Glycine)<br>Blue                    | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |  |
| 64200100            | Fruit nectar, NFS               | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |  |
| 64201010            | Apricot nectar                  | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |  |
| 64201500            | Banana nectar                   | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |  |
| 64202010            | Cantaloupe nectar               | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |  |
| 64203020            | Guava nectar                    | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |  |
| 64204010            | Mango nectar                    | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |  |
| 64205010            | Peach nectar                    | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |  |
| 64210010            | Papaya nectar                   | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |  |
| 64215010            | Pear nectar                     | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |  |
| 64221010            | Soursop, nectar                 | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |  |
| 71200010            | Potato chips, NFS               | Savory snacks and crackers | Potato chips, flavored                                     | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71200110            | Potato chips, barbecue flavored | Savory snacks and crackers | Potato chips, flavored                                     | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |

| NHANES<br>Food Code | NHANES Food<br>Description                                 | Proposed<br>Food Category  | Proposed<br>Food Subcategory | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|----------------------------|------------------------------|--|--|----------------------------|--|----------------------------|---|
| 1 oou couc          | Description  | I oou category             | i oou Subcategory            | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 71200120            | Potato chips, sour cream and onion flavored                | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71200130            | Potato chips, cheese<br>flavored                           | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71200140            | Potato chips, other<br>flavored                            | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71200210            | Potato chips, ruffled,<br>barbecue flavored                | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71200220            | Potato chips, ruffled, sour cream and onion flavored       | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71200230            | Potato chips, ruffled,<br>cheese flavored                  | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71200240            | Potato chips, ruffled,<br>other flavored                   | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71200310            | Potato chips, restructured, flavored                       | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71200410            | Potato chips, baked,<br>flavored                           | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71201015            | White potato chips, regular cut                            | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71201020            | White potato chips,<br>ruffled, rippled, or crinkle<br>cut | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71201050            | Potato chips, reduced fat                                  | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71201060            | Potato chips, fat free                                     | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71201080            | White potato, chips, fat free                              | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71201090            | White potato, chips, fat<br>free, made with Olean          | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |
| 71201100            | White potato, chips, restructured                          | Savory snacks and crackers | Potato chips, flavored       | 25   | 20   | 40                         | 0  | 0.154                      | 155   |

| NHANES<br>Food Code | NHANES Food<br>Description                              | Proposed<br>Food Category     | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |  |
|---------------------|---|-------------------------------|--------------------------------------|--|--|----------------------------|--|----------------------------|---|--|
|                     | Description   | i oou Category                | i ood Subcategory                    | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |  |
| 71201200            | Potato chips, restructured, reduced fat, lightly salted | Savory snacks and crackers    | Potato chips, flavored               | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71201210            | Potato chips, restructured, fat free                    | Savory snacks and<br>crackers | Potato chips, flavored               | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71201250            | White potato, chips, restructured, baked                | Savory snacks and crackers    | Potato chips, flavored               | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71202000            | Potato chips, unsalted                                  | Savory snacks and crackers    | Potato chips, flavored               | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71202100            | Potato chips, reduced fat,<br>unsalted                  | Savory snacks and<br>crackers | Potato chips, flavored               | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71202500            | Potato chips, lightly salted                            | Savory snacks and crackers    | Potato chips, flavored               | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71202510            | Potato chips, restructured, lightly salted              | Savory snacks and crackers    | Potato chips, flavored               | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71203020            | Potato chips, popped,<br>flavored                       | Savory snacks and<br>crackers | Potato chips, flavored               | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71204000            | Potato puffs, cheese-filled                             | Savory snacks and crackers    | Potato chips, flavored               | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71205000            | White potato, sticks                                    | Savory snacks and crackers    | Potato chips, flavored               | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71205030            | Potato sticks, flavored                                 | Savory snacks and<br>crackers | Potato chips, flavored               | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71205040            | Potato sticks, fry shaped                               | Savory snacks and crackers    | Potato chips, flavored               | 25   | 20   | 40                         | 0  | 0.154                      | 155   |  |
| 71220000            | Vegetable chips   | Savory snacks and crackers    | Tortilla, corn, other chips          | 100  | 25   | 50                         | 0.300  | 0.154                      | 1520  |  |
| 71905410            | Plantain chips  | Savory snacks and crackers    | Tortilla, corn, other chips          | 100  | 25   | 50                         | 0.300  | 0.154                      | 1520  |  |
| 73406010            | Sweet potato with fruit                                 | Jams, syrups,<br>toppings     | Fruit toppings, fillings,<br>and jam | 5.62   | 15   | 40                         | 0.030  | 0.016                      | 6.182   |  |
| 73410210            | Sweet potato chips                                      | Savory snacks and<br>crackers | Tortilla, corn, other<br>chips       | 100  | 25   | 50                         | 0.300  | 0.154                      | 1520  |  |
| 78101100            | Fruit and vegetable smoothie                            | Non-alcoholic<br>beverages    | Smoothies                            | 100  | 10   | 15                         | 0  | 0.016                      | 20  |  |

| NHANES<br>Food Code | NHANES Food<br>Description                            | Proposed<br>Food Category  | Proposed<br>Food Subcategory  | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|----------------------------|---|--|--|----------------------------|--|----------------------------|---|
| roou couc           | Description   | roou Category              | Food Subcategory  | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 78101110            | Fruit and vegetable smoothie, added protein           | Non-alcoholic<br>beverages | Smoothies   | 100  | 10   | 15                         | 0  | 0.016                      | 20  |
| 78101120            | Fruit and vegetable smoothie, bottled                 | Non-alcoholic<br>beverages | Smoothies   | 100  | 10   | 15                         | 0  | 0.016                      | 20  |
| 91300010            | Syrup, NFS  | Jams, syrups,<br>toppings  | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91300100            | Pancake syrup, NFS                                    | Jams, syrups,<br>toppings  | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91301020            | Cane and corn pancake syrup                           | Jams, syrups,<br>toppings  | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91301040            | Buttered blends syrup                                 | Jams, syrups,<br>toppings  | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91301050            | Fruit syrup   | Jams, syrups,<br>toppings  | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91301130            | Fruit flavored syrup used for milk beverages          | Jams, syrups,<br>toppings  | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91301250            | Maple and corn and/or<br>cane pancake syrup<br>blends | Jams, syrups,<br>toppings  | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91301510            | Syrup, pancake, reduced calorie                       | Jams, syrups,<br>toppings  | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91304010            | Topping, butterscotch or caramel                      | Jams, syrups,<br>toppings  | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91304030            | Topping, fruit  | Jams, syrups,<br>toppings  | Fruit toppings, fillings,<br>and jam                                | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |

| NHANES<br>Food Code | NHANES Food<br>Description                     | Proposed<br>Food Category | Proposed<br>Food Subcategory  | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|---------------------------|---|--|--|----------------------------|--|----------------------------|---|
|                     | 2.00.1000                                      | 1 oou omgory              |   | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 91304040            | Topping, marshmallow                           | Jams, syrups,<br>toppings | Icing & frosting  | 100  | 10   | 30                         | 0.030  | 0.016                      | 80  |
| 91304060            | Topping, nuts and syrup                        | Jams, syrups,<br>toppings | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91304070            | Topping, peanut butter,<br>thick, fudge type   | Jams, syrups,<br>toppings | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91304090            | Topping, chocolate<br>flavored hazelnut spread | Jams, syrups,<br>toppings | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91305020            | Icing, white                                   | Jams, syrups,<br>toppings | Icing & frosting  | 100  | 10   | 30                         | 0.030  | 0.016                      | 80  |
| 91306020            | Caramel dip, regular                           | Jams, syrups,<br>toppings | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91306040            | Dessert dip                                    | Jams, syrups,<br>toppings | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91351010            | Syrup, dietetic                                | Jams, syrups,<br>toppings | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91351020            | Topping, dietetic                              | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam                                | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |
| 91361020            | Fruit sauce                                    | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam                                | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |
| 91361040            | Dessert sauce                                  | Jams, syrups,<br>toppings | Syrups/toppings for<br>beverages, desserts, and<br>breakfast syrups | 100  | 10   | 45                         | 0.030  | 0.016                      | 100   |
| 91401000            | Jelly, all flavors                             | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam                                | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |
| 91402000            | Jam, preserve, all flavors                     | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam                                | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category | Proposed<br>Food Subcategory         | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|---------------------------|--------------------------------------|--|--|----------------------------|--|----------------------------|---|
|                     | Description   | I tou category            | Tood Subcategory                     | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 91403000            | Fruit butter, all flavors   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |
| 91404000            | Marmalade, all flavors  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |
| 91405000            | Jelly, sugar free, all flavors  | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |
| 91405500            | Jelly, reduced sugar, all flavors   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |
| 91406000            | Jam, preserve,<br>marmalade, sugar free, all<br>flavors                                 | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |
| 91406500            | Jam, preserve,<br>marmalade, sweetened<br>with fruit juice<br>concentrates, all flavors | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |
| 91406600            | Jam, preserve,<br>marmalade, reduced<br>sugar, all flavors                              | Jams, syrups,<br>toppings | Fruit toppings, fillings, and jam    | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |
| 91407100            | Guava paste   | Jams, syrups,<br>toppings | Fruit toppings, fillings,<br>and jam | 100  | 15   | 40                         | 0.030  | 0.016                      | 110   |
| 91501010            | Gelatin dessert   | Desserts                  | Gelatins, ices, sorbets              | 100  | 10   | 30                         | 0.030  | 0.016                      | 80  |
| 91501020            | Gelatin dessert with fruit  | Desserts                  | Gelatins, ices, sorbets              | 65.002   | 10   | 30                         | 0.030  | 0.016                      | 52.0016   |
| 91501030            | Gelatin dessert with whipped cream  | Desserts                  | Gelatins, ices, sorbets              | 92.754   | 10   | 30                         | 0.030  | 0.016                      | 74.2032   |
| 91501050            | Gelatin dessert with cream cheese   | Desserts                  | Gelatins, ices, sorbets              | 92.697   | 10   | 30                         | 0.030  | 0.016                      | 74.1576   |
| 91501060            | Gelatin dessert with sour cream   | Desserts                  | Gelatins, ices, sorbets              | 77.876   | 10   | 30                         | 0.030  | 0.016                      | 62.3008   |
| 91501090            | Gelatin dessert with fruit, vegetable, and nuts   | Desserts                  | Gelatins, ices, sorbets              | 61.566   | 10   | 30                         | 0.030  | 0.016                      | 49.2528   |
| 91511010            | Gelatin dessert, dietetic,<br>sweetened with low<br>calorie sweetener                   | Desserts                  | Gelatins, ices, sorbets              | 100  | 10   | 30                         | 0.030  | 0.016                      | 80  |

| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category | Proposed<br>Food Subcategory   | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |  |
|---------------------|--|---------------------------|--------------------------------|--|--|----------------------------|--|----------------------------|---|--|
|                     | 2.000 pron   | r oou entegory            | I oou ouo curegory             | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |  |
| 91511020            | Gelatin dessert, dietetic,<br>with fruit, sweetened with<br>low calorie sweetener              | Desserts                  | Gelatins, ices, sorbets        | 60.858   | 10   | 30                         | 0.030  | 0.016                      | 48.6864   |  |
| 91511030            | Gelatin dessert, dietetic,<br>with whipped topping,<br>sweetened with low<br>calorie sweetener | Desserts                  | Gelatins, ices, sorbets        | 92.126   | 10   | 30                         | 0.030  | 0.016                      | 73.7008   |  |
| 91511050            | Gelatin dessert, dietetic,<br>with cream cheese,<br>sweetened with low<br>calorie sweetener    | Desserts                  | Gelatins, ices, sorbets        | 86.475   | 10   | 30                         | 0.030  | 0.016                      | 69.18   |  |
| 91511060            | Gelatin dessert, dietetic,<br>with sour cream,<br>sweetened with low<br>calorie sweetener      | Desserts                  | Gelatins, ices, sorbets        | 77.059   | 10   | 30                         | 0.030  | 0.016                      | 61.6472   |  |
| 91520100            | Yokan  | Desserts                  | Gelatins, ices, sorbets        | 100  | 10   | 30                         | 0.030  | 0.016                      | 80  |  |
| 91550300            | Pineapple custard, Puerto<br>Rican style   | Desserts                  | Pudding                        | 100  | 10   | 50                         | 0  | 0.021                      | 110   |  |
| 91601000            | Ice, fruit   | Desserts                  | Gelatins, ices, sorbets        | 100  | 10   | 30                         | 0.030  | 0.016                      | 80  |  |
| 91611000            | Ice pop  | Desserts                  | Gelatins, ices, sorbets        | 100  | 10   | 30                         | 0.030  | 0.016                      | 80  |  |
| 91611100            | Ice pop, sweetened with low calorie sweetener  | Desserts                  | Gelatins, ices, sorbets        | 100  | 10   | 30                         | 0.030  | 0.016                      | 80  |  |
| 91621000            | Snow cone  | Desserts                  | Gelatins, ices, sorbets        | 100  | 10   | 30                         | 0.030  | 0.016                      | 80  |  |
| 91700010            | Candy, NFS   | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |  |
| 91700500            | M&M's Almond<br>Chocolate Candies  | Candy                     | Candy containing chocolate     | 20   | 15   | 35                         | 0.200  | 0.103                      | 132   |  |
| 91701020            | Almonds, sugar-coated  | Candy                     | Candy not containing chocolate | 70   | 15   | 35                         | 0.200  | 0.103                      | 462   |  |
| 91701030            | Almonds, yogurt-covered  | Candy                     | Candy not containing chocolate | 70   | 15   | 35                         | 0.200  | 0.103                      | 462   |  |

| NHANES<br>Food Code | NHANES Food<br>Description               | Proposed<br>Food Category | Proposed<br>Food Subcategory   | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|---------------------------|--------------------------------|--|--|----------------------------|--|----------------------------|---|
|                     | Description                              | r oou entegory            | I oou subcategory              | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 91702010            | Butterscotch morsels                     | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91703010            | Caramel, chocolate-<br>flavored roll     | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91703020            | Caramel, flavor other than chocolate     | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91703030            | Caramel, with nuts                       | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91703040            | Caramel candy, chocolate covered         | Candy                     | Candy containing chocolate     | 65   | 15   | 35                         | 0.200  | 0.103                      | 429   |
| 91703060            | Caramel with nuts,<br>chocolate covered  | Candy                     | Candy containing chocolate     | 65   | 15   | 35                         | 0.200  | 0.103                      | 429   |
| 91703080            | Caramel, all flavors, sugar free         | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91705020            | Milk chocolate candy,<br>with cereal     | Candy                     | Candy containing chocolate     | 65   | 15   | 35                         | 0.200  | 0.103                      | 429   |
| 91705090            | Chocolate candy with fondant and caramel | Candy                     | Candy containing chocolate     | 65   | 15   | 35                         | 0.200  | 0.103                      | 429   |
| 91705400            | Chocolate, white                         | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91705420            | Chocolate, white, with cereal            | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91705430            | Kit Kat White                            | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91706000            | Coconut candy, chocolate covered         | Candy                     | Candy containing chocolate     | 65   | 15   | 35                         | 0.200  | 0.103                      | 429   |
| 91706100            | Coconut candy, no<br>chocolate covering  | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91706400            | Coconut candy, Puerto<br>Rican style     | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91707000            | Fondant                                  | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91707010            | Fondant, chocolate covered               | Candy                     | Candy containing chocolate     | 65   | 15   | 35                         | 0.200  | 0.103                      | 429   |

| NHANES<br>Food Code | NHANES Food<br>Description                                    | Proposed<br>Food Category | Proposed<br>Food Subcategory   | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|---------------------------|--------------------------------|--|--|----------------------------|--|----------------------------|---|
| Toou couc           |   |                           | Tood Subcategory               | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 91708000            | Fruit peel, candied   | Candy                     | Candy not containing chocolate | 70   | 15   | 35                         | 0.200  | 0.103                      | 462   |
| 91708010            | Date candy  | Candy                     | Candy not containing chocolate | 70   | 15   | 35                         | 0.200  | 0.103                      | 462   |
| 91708020            | Soft fruit confections  | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91708030            | Fruit leather and fruit snacks candy                          | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91708070            | Tamarind candy  | Candy                     | Candy not containing chocolate | 70   | 15   | 35                         | 0.200  | 0.103                      | 462   |
| 91708100            | Fruit snacks candy, with high vitamin C                       | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91708150            | Yogurt covered fruit<br>snacks candy, with added<br>vitamin C | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91709000            | Gumdrops, chocolate covered                                   | Candy                     | Candy containing chocolate     | 65   | 15   | 35                         | 0.200  | 0.103                      | 429   |
| 91713050            | Fudge, peanut butter  | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91713060            | Fudge, peanut butter, with nuts                               | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91713070            | Fudge, vanilla  | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91718000            | Honey-combed hard<br>candy with peanut butter                 | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91718200            | Chocolate-flavored<br>sprinkles                               | Candy                     | Candy containing chocolate     | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91718300            | Ladoo, round ball, Asian-<br>Indian dessert                   | Candy                     | Candy not containing chocolate | 70   | 15   | 35                         | 0.200  | 0.103                      | 462   |
| 91721000            | Licorice  | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91723000            | Marshmallow   | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |

| NHANES<br>Food Code | NHANES Food<br>Description                  | Proposed<br>Food Category | Proposed<br>Food Subcategory   | % of<br>Food that<br>Could<br>Contain<br>Jagua | in a Giv<br>Catego | Foods<br>en Food<br>ory that<br>e Colored | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|---------------------------|--------------------------------|--|--------------------|---|--|----------------------------|---|
| 1000 0000           | Description                                 |                           |                                | (Genipin-<br>Glycine)<br>Blue                  | Blue               | Green,<br>purple,<br>brown                | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 91723010            | Marshmallow, chocolate covered              | Candy                     | Candy containing chocolate     | 65   | 15                 | 35  | 0.200  | 0.103                      | 429   |
| 91723020            | Marshmallow, candy-<br>coated               | Candy                     | Candy not containing chocolate | 100  | 15                 | 35  | 0.200  | 0.103                      | 660   |
| 91726000            | Nougat, plain                               | Candy                     | Candy not containing chocolate | 100  | 15                 | 35  | 0.200  | 0.103                      | 660   |
| 91726110            | Nougat, with caramel, chocolate covered     | Candy                     | Candy containing chocolate     | 65   | 15                 | 35  | 0.200  | 0.103                      | 429   |
| 91726410            | Nougat, chocolate covered                   | Candy                     | Candy containing chocolate     | 65   | 15                 | 35  | 0.200  | 0.103                      | 429   |
| 91728000            | Nut roll, fudge or nougat, caramel and nuts | Candy                     | Candy containing chocolate     | 70   | 15                 | 35  | 0.200  | 0.103                      | 462   |
| 91728500            | Sugared pecans, sugar and egg white coating | Candy                     | Candy not containing chocolate | 70   | 15                 | 35  | 0.200  | 0.103                      | 462   |
| 91731010            | M&M's Peanut Chocolate<br>Candies           | Candy                     | Candy containing chocolate     | 20   | 15                 | 35  | 0.200  | 0.103                      | 132   |
| 91731060            | M&M's Peanut Butter<br>Chocolate Candies    | Candy                     | Candy containing chocolate     | 20   | 15                 | 35  | 0.200  | 0.103                      | 132   |
| 91731100            | Peanuts, sugar-coated                       | Candy                     | Candy not containing chocolate | 70   | 15                 | 35  | 0.200  | 0.103                      | 462   |
| 91731150            | Peanuts, yogurt covered                     | Candy                     | Candy not containing chocolate | 70   | 15                 | 35  | 0.200  | 0.103                      | 462   |
| 91732000            | Peanut bar                                  | Candy                     | Candy not containing chocolate | 70   | 15                 | 35  | 0.200  | 0.103                      | 462   |
| 91733000            | Peanut brittle                              | Candy                     | Candy not containing chocolate | 70   | 15                 | 35  | 0.200  | 0.103                      | 462   |
| 91734200            | Reese's Pieces                              | Candy                     | Candy not containing chocolate | 20   | 15                 | 35  | 0.200  | 0.103                      | 132   |
| 91734500            | Peanut butter morsels                       | Candy                     | Candy not containing chocolate | 100  | 15                 | 35  | 0.200  | 0.103                      | 660   |
| 91735000            | Pralines                                    | Candy                     | Candy not containing chocolate | 70   | 15                 | 35  | 0.200  | 0.103                      | 462   |
| 91739600            | Raisins, yogurt covered                     | Candy                     | Candy not containing chocolate | 60   | 15                 | 35  | 0.200  | 0.103                      | 396   |

| NHANES<br>Food Code | NHANES Food<br>Description                       | Proposed<br>Food Category | Proposed<br>Food Subcategory   | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|---------------------------|--------------------------------|--|--|----------------------------|--|----------------------------|---|
|                     | Description                                      |                           | I oou Subcategory              | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 91742010            | Sesame Crunch, Sahadi                            | Candy                     | Candy not containing chocolate | 70   | 15   | 35                         | 0.200  | 0.103                      | 462   |
| 91745010            | Gumdrops   | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91745020            | Hard candy                                       | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91745040            | Butterscotch hard candy                          | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91745100            | Skittles   | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91746010            | Sugar-coated chocolate discs                     | Candy                     | Candy containing chocolate     | 20   | 15   | 35                         | 0.200  | 0.103                      | 132   |
| 91746100            | M&M's Milk Chocolate<br>Candies                  | Candy                     | Candy containing chocolate     | 20   | 15   | 35                         | 0.200  | 0.103                      | 132   |
| 91746120            | Sixlets  | Candy                     | Candy containing chocolate     | 20   | 15   | 35                         | 0.200  | 0.103                      | 132   |
| 91746150            | Easter egg, candy coated chocolate               | Candy                     | Candy containing chocolate     | 20   | 15   | 35                         | 0.200  | 0.103                      | 132   |
| 91746200            | M&M's Pretzel Chocolate<br>Candies               | Candy                     | Candy containing chocolate     | 20   | 15   | 35                         | 0.200  | 0.103                      | 132   |
| 91750000            | Taffy  | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91760000            | Toffee, plain                                    | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91760100            | Toffee, chocolate covered                        | Candy                     | Candy containing chocolate     | 65   | 15   | 35                         | 0.200  | 0.103                      | 429   |
| 91760200            | Toffee, chocolate-coated, with nuts              | Candy                     | Candy containing chocolate     | 65   | 15   | 35                         | 0.200  | 0.103                      | 429   |
| 91760500            | Truffles   | Candy                     | Candy containing chocolate     | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91770020            | Dietetic or low calorie<br>hard candy            | Candy                     | Candy not containing chocolate | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91770030            | Dietetic or low calorie candy, chocolate covered | Candy                     | Candy containing chocolate     | 65   | 15   | 35                         | 0.200  | 0.103                      | 429   |

| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category  | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|----------------------------|--|--|--|----------------------------|--|----------------------------|---|
|                     |  |                            | I oou Subcategory  | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 91800100            | Chewing gum, NFS   | Candy                      | Chewing gum  | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91801000            | Chewing gum, regular   | Candy                      | Chewing gum  | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 91802000            | Chewing gum, sugar free  | Candy                      | Chewing gum  | 100  | 15   | 35                         | 0.200  | 0.103                      | 660   |
| 92432000            | Fruit juice drink, citrus, carbonated                                    | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92433000            | Fruit juice drink,<br>noncitrus, carbonated                              | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92510610            | Fruit juice drink  | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92510650            | Tamarind drink   | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92510720            | Fruit punch, made with fruit juice and soda                              | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 50   | 13   | 25                         | 0.020  | 0.011                      | 25  |
| 92510730            | Fruit punch, made with<br>soda, fruit juice, and<br>sherbet or ice cream | Desserts                   | Ice cream and frozen<br>dairy desserts<br>(including bars) | 20.598   | 17.5   | 35                         | 0.100  | 0.053                      | 74.1528   |
| 92510730            | Fruit punch, made with<br>soda, fruit juice, and<br>sherbet or ice cream | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 26.467   | 13   | 25                         | 0.020  | 0.011                      | 13.2335   |
| 92510955            | Lemonade, fruit juice<br>drink   | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92510960            | Lemonade, fruit flavored<br>drink  | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92511015            | Fruit flavored drink   | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |

| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category  | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|----------------------------|--|--|--|----------------------------|--|----------------------------|---|
| Food Code           | Description  |                            | Food Subcategory   | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 92512090            | Pina Colada, nonalcoholic  | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92512110            | Margarita mix,<br>nonalcoholic   | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92513000            | Fruit flavored smoothie<br>drink, frozen, no dairy                       | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92513010            | Fruit flavored smoothie<br>drink, frozen, light, no<br>dairy             | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92530410            | Fruit flavored drink, with<br>high vitamin C                             | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92530510            | Cranberry juice drink,<br>with high vitamin C                            | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92530610            | Fruit juice drink, with<br>high vitamin C                                | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92530950            | Vegetable and fruit juice<br>drink, with high vitamin<br>C               | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92531030            | Fruit juice drink (Sunny<br>D)   | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92541010            | Fruit flavored drink,<br>powdered, reconstituted                         | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92542000            | Fruit flavored drink, with<br>high vitamin C,<br>powdered, reconstituted | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category  | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|----------------------------|--|--|--|----------------------------|--|----------------------------|---|
| roou couc           |   |                            | Food Subcategory   | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 92550030            | Fruit juice drink, with<br>high vitamin C, light                  | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92550035            | Fruit juice drink, light  | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92550040            | Fruit juice drink, diet   | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92550110            | Cranberry juice drink,<br>with high vitamin C, light              | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92550200            | Grape juice drink, light  | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92550350            | Orange juice beverage,<br>40-50% juice, light                     | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92550360            | Apple juice beverage, 40-<br>50% juice, light                     | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92550370            | Lemonade, fruit juice<br>drink, light                             | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92550380            | Pomegranate juice<br>beverage, 40-50% juice,<br>light             | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92550400            | Vegetable and fruit juice<br>drink, with high vitamin<br>C, diet  | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92550405            | Vegetable and fruit juice<br>drink, with high vitamin<br>C, light | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category       | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|---------------------------------|--|--|--|----------------------------|--|----------------------------|---|
| roou couc           | Description   |                                 | rood Subcategory   | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 92550610            | Fruit flavored drink, with high vitamin C, diet                                   | Non-alcoholic<br>beverages      | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92550620            | Fruit flavored drink, diet  | Non-alcoholic<br>beverages      | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92552000            | Fruit flavored drink, with<br>high vitamin C,<br>powdered, reconstituted,<br>diet | Non-alcoholic<br>beverages      | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92552010            | Fruit flavored drink,<br>powdered, reconstituted,<br>diet                         | Non-alcoholic<br>beverages      | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92552020            | Fruit juice drink, reduced<br>sugar (Sunny D)                                     | Non-alcoholic<br>beverages      | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92552030            | Fruit juice drink (Capri<br>Sun)  | Non-alcoholic<br>beverages      | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92582100            | Fruit juice drink, with<br>high vitamin C, plus<br>added calcium                  | Non-alcoholic<br>beverages      | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92582110            | Fruit juice drink, added<br>calcium (Sunny D)                                     | Non-alcoholic<br>beverages      | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92610020            | Horchata beverage, made with water  | Dairy Drinks and<br>Substitutes | Milk substitutes   | 100  | 10   | 20                         | 0.040  | 0.021                      | 80  |
| 92610030            | Horchata beverage, made with milk   | Dairy Drinks and<br>Substitutes | Other dairy drinks   | 100  | 20   | 40                         | 0  | 0.021                      | 80  |
| 92611010            | Oatmeal beverage with water   | Dairy Drinks and<br>Substitutes | Milk substitutes   | 100  | 10   | 20                         | 0.040  | 0.021                      | 80  |
| 92611100            | Oatmeal beverage with milk  | Dairy Drinks and<br>Substitutes | Other dairy drinks   | 100  | 20   | 40                         | 0  | 0.021                      | 80  |

| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category       | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|---------------------------------|--|--|--|----------------------------|--|----------------------------|---|
| roou couc           |  |                                 | Food Subcategory   | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 92612010            | Sugar cane beverage  | Non-alcoholic<br>beverages      | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92613010            | Cornmeal beverage  | Dairy Drinks and<br>Substitutes | Other dairy drinks   | 100  | 20   | 40                         | 0  | 0.021                      | 80  |
| 92801000            | Wine, nonalcoholic   | Non-alcoholic<br>beverages      | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92803000            | Nonalcoholic malt<br>beverage  | Non-alcoholic<br>beverages      | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 92804000            | Shirley Temple   | Non-alcoholic<br>beverages      | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |
| 95101000            | Nutritional drink or shake,<br>ready-to-drink (Boost)                          | Non-alcoholic<br>beverages      | Nutritional beverages<br>(RTD and powders)                 | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95101010            | Nutritional drink or shake,<br>ready-to-drink (Boost<br>Plus)                  | Non-alcoholic<br>beverages      | Nutritional beverages<br>(RTD and powders)                 | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95102000            | Nutritional drink or shake,<br>ready-to-drink (Carnation<br>Instant Breakfast) | Non-alcoholic<br>beverages      | Nutritional beverages<br>(RTD and powders)                 | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95103000            | Nutritional drink or shake,<br>ready-to-drink (Ensure)                         | Non-alcoholic<br>beverages      | Nutritional beverages<br>(RTD and powders)                 | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95103010            | Nutritional drink or shake,<br>ready-to-drink (Ensure<br>Plus)                 | Non-alcoholic<br>beverages      | Nutritional beverages<br>(RTD and powders)                 | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95104000            | Nutritional drink or shake,<br>ready-to-drink, sugar free<br>(Glucerna)        | Non-alcoholic<br>beverages      | Nutritional beverages<br>(RTD and powders)                 | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95105000            | Nutritional drink or shake,<br>ready-to-drink (Kellogg's<br>Special K Protein) | Non-alcoholic<br>beverages      | Nutritional beverages<br>(RTD and powders)                 | 100  | 20   | 40                         | 0  | 0.016                      | 60  |

| NHANES<br>Food Code | NHANES Food<br>Description  | Proposed<br>Food Category  | Proposed<br>Food Subcategory               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|---|----------------------------|--|--|--|----------------------------|--|----------------------------|---|
| 1 oou couc          | Description   | i oou category             | I oou Subcategory                          | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 95106000            | Nutritional drink or shake,<br>ready-to-drink (Muscle<br>Milk)              | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders) | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95106010            | Nutritional drink or shake,<br>ready-to-drink, light<br>(Muscle Milk)       | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders) | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95110000            | Nutritional drink or shake,<br>ready-to-drink (Slim Fast)                   | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders) | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95110010            | Nutritional drink or shake,<br>ready-to-drink, sugar free<br>(Slim Fast)    | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders) | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95110020            | Nutritional drink or shake,<br>high protein, ready-to-<br>drink (Slim Fast) | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders) | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95120000            | Nutritional drink or shake,<br>ready-to-drink, NFS                          | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders) | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95120010            | Nutritional drink or shake,<br>high protein, ready-to-<br>drink, NFS        | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders) | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95120020            | Nutritional drink or shake,<br>high protein, light, ready-<br>to-drink, NFS | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders) | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95120050            | Nutritional drink or shake,<br>liquid, soy-based                            | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders) | 100  | 20   | 40                         | 0  | 0.016                      | 60  |
| 95201000            | Nutritional powder mix<br>(Carnation Instant<br>Breakfast)                  | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders) | 676  | 20   | 40                         | 0  | 0.016                      | 405.6   |
| 95201010            | Nutritional powder mix,<br>sugar free (Carnation<br>Instant Breakfast)      | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders) | 1250   | 20   | 40                         | 0  | 0.016                      | 750   |
| 95201200            | Nutritional powder mix<br>(EAS Whey Protein<br>Powder)                      | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders) | 641  | 20   | 40                         | 0  | 0.016                      | 384.6   |

| NHANES<br>Food Code | NHANES Food<br>Description   | Proposed<br>Food Category  | Proposed<br>Food Subcategory                               | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |
|---------------------|--|----------------------------|--|--|--|----------------------------|--|----------------------------|---|
|                     |  |                            |  | (Genipin-<br>Glycine)<br>Blue                  | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |
| 95201300            | Nutritional powder mix<br>(EAS Soy Protein<br>Powder)              | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 568  | 20   | 40                         | 0  | 0.016                      | 340.8   |
| 95201500            | Nutritional powder mix,<br>high protein (Herbalife)                | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 1000   | 20   | 40                         | 0  | 0.016                      | 600   |
| 95201600            | Nutritional powder mix<br>(Isopure)                                | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 287  | 20   | 40                         | 0  | 0.016                      | 172.2   |
| 95201700            | Nutritional powder mix<br>(Kellogg's Special K20<br>Protein Water) | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 1786   | 20   | 40                         | 0  | 0.016                      | 1071.6  |
| 95202000            | Nutritional powder mix<br>(Muscle Milk)                            | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 357  | 20   | 40                         | 0  | 0.016                      | 214.2   |
| 95210000            | Nutritional powder mix<br>(Slim Fast)                              | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 962  | 20   | 40                         | 0  | 0.016                      | 577.2   |
| 95210020            | Nutritional powder mix,<br>high protein (Slim Fast)                | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 962  | 20   | 40                         | 0  | 0.016                      | 577.2   |
| 95220000            | Nutritional powder mix,<br>NFS                                     | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 735  | 20   | 40                         | 0  | 0.016                      | 441   |
| 95220010            | Nutritional powder mix,<br>high protein, NFS                       | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 568  | 20   | 40                         | 0  | 0.016                      | 340.8   |
| 95230000            | Nutritional powder mix,<br>whey based, NFS                         | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 962  | 20   | 40                         | 0  | 0.016                      | 577.2   |
| 95230010            | Nutritional powder mix,<br>protein, soy based, NFS                 | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 694  | 20   | 40                         | 0  | 0.016                      | 416.4   |
| 95230020            | Nutritional powder mix,<br>protein, light, NFS                     | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 3125   | 20   | 40                         | 0  | 0.016                      | 1875  |
| 95230030            | Nutritional powder mix,<br>protein, NFS                            | Non-alcoholic<br>beverages | Nutritional beverages<br>(RTD and powders)                 | 806  | 20   | 40                         | 0  | 0.016                      | 483.6   |
| 95341000            | FUZE Slenderize fortified<br>low-calorie fruit juice<br>beverage   | Non-alcoholic<br>beverages | Fruit based drinks<br>(including fruit flavored<br>drinks) | 100  | 13   | 25                         | 0.020  | 0.011                      | 50  |

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| NHANES   | NHANES Food | Proposed      | Proposed         | % of<br>Food that<br>Could<br>Contain<br>Jagua | % of Foods<br>in a Given Food<br>Category that<br>Could be Colored |                            | Maximum Use<br>Level of Jagua<br>(Genipin-Glycine)<br>Blue Intended to<br>Impart Color (%) |                            | Jagua<br>(Genipin-<br>Glycine) Blue<br>Use Level<br>Used in the |  |
|--|-------------|---------------|------------------|--|--|----------------------------|--|----------------------------|---|--|
| Food Code  | Description | Food Category | Food Subcategory | Genipin-<br>Glycine)<br>Blue                   | Blue   | Green,<br>purple,<br>brown | Blue   | Green,<br>purple,<br>brown | Dietary<br>Exposure<br>Estimate<br>(mg/kg)                      |  |
| <sup>1</sup> This food code was not included in Exponent's initial dietary exposure estimate. In a deficiency letter dated March 31, 2021, FDA requested Exponent provide a rationale as to why certain food codes were excluded. In a response (submission dated April 1, 2021), Exponent included these food codes in the dietary exposure estimate. For each food code, Exponent determined the percent of food that could contain jagua (genipin-glycine) blue and based on that percentage, FDA calculated the use level used in the dietary exposure estimate. |             |               |                  |  |  |                            |  |                            |   |  |

 $^{2}$  This percentage was incorrect in Exponent's initial dietary exposure estimate. Exponent provided the correct percentage in a submission dated April 1, 2021, and the correct percentage is presented here. Based on this percentage, FDA calculated the use level used in the dietary exposure estimate.