to minimize the amount of karanjin and pongamol in the seedcake for use as a viable food source.

[0005] The widespread use of pongamia-derived foodstuffs is currently prevented by the absence of methods for preparing pongamia compositions having low levels of karanjin and pongamol while maintaining the high nutritional content (proteins, carbohydrates, etc.) intrinsic to the oilseeds. Existing methods for the removal of these undesirable components in pongamia seedcake often require harsh, destructive conditions that reduce and degrade the nutrients to the point that the nutritional value of pongamia is severely impacted. The lack of methods for producing pongamia compositions having the critical balance of preserved nutritional content and sufficiently low levels of anti-nutrients have precluded the incorporation of pongamia-derived protein as a replacement food source on a large enough scale to remain economically feasible.

[0006] Thus, what is desired in the art are commercially viable methods to obtain edible compositions from pongamia oil seeds that retain an optimal nutritional balance, while minimizing components such as karanjin and pongamol.

BRIEF SUMMARY

[0007] Provided herein are compositions obtained by processing pongamia oilseeds under certain conditions to obtain a composition suitable for consumption by humans and other animals.

[0007a] In one aspect of the present disclosure, there is provided a method of preparing a pongamia composition comprising karanjin or pongamol, or both; tannins; digestible proteins; carbohydrates; antioxidants; and minerals, wherein the composition has: (i) a karanjin content, if present, of less than or equal to 100 ppm; (ii) a pongamol content, if present, of less than or equal to 100 ppm; and (iii) a tannin content of less than or equal to 0.5% w/w, the method comprising:

heating pongamia oilseeds at a temperature between 25°C and 200°C for a suitable time to provide treated oilseeds;

dehulling the treated oilseeds to produce dehulled oilseeds;

mechanically pressing the dehulled oilseeds to produce a deoiled seedcake;combining the deoiled seedcake with solvent to provide an extraction mixture, wherein the solvent comprises alkyl alkanoate or alcohol, or any combination thereof; and

separating the extraction mixture into a miscella and the pongamia composition.

[0007b] In another aspect of the present disclosure, there is provided a pongamia composition prepared by the method disclosed herein.

[0007c] In a further aspect of the present disclosure, there is provided a method, comprising: feeding a pongamia composition disclosed herein to a non-ruminant animal.

[0007d] In another aspect of the present disclosure, there is provided a poultry feed, comprising:

a base feed; and

a pongamia composition disclosed herein.

[0007e] In a further aspect of the present disclosure, there is provided a poultry feed, comprising:

corn;

a soybean supplement; and

a pongamia composition disclosed herein.

[0007f] In another aspect of the present disclosure, there is provided a food composition, comprising:

a pongamia composition disclosed herein.

CLAIMS

What is claimed is:

1. A method of preparing a pongamia composition comprising karanjin or pongamol, or both; tannins; digestible proteins; carbohydrates; antioxidants; and minerals, wherein the composition has: (i) a karanjin content, if present, of less than or equal to 100 ppm; (ii) a pongamol content, if present, of less than or equal to 100 ppm; and (iii) a tannin content of less than or equal to 0.5% w/w, the method comprising:

heating pongamia oilseeds at a temperature between 25°C and 200°C for a suitable time to provide treated oilseeds;

dehulling the treated oilseeds to produce dehulled oilseeds;

mechanically pressing the dehulled oilseeds to produce a deoiled seedcake;

combining the deoiled seedcake with solvent to provide an extraction mixture, wherein the solvent comprises alkyl alkanoate or alcohol, or any combination thereof; and

separating the extraction mixture into a miscella and the pongamia composition.

2. The method of claim 1, wherein the mechanical pressing is performed by an expeller.

3. The method of claim 1, wherein the mechanical pressing is performed by an expander.

4. A pongamia composition prepared by the method of claim 1.

5. The composition of claim 4, wherein the composition has a tannin content of less than or equal to 0.1 w/w%.

6. The composition of claim 4 or 5, wherein the composition is in the form of meal.

7. The composition of claim 4 or 5, wherein the composition is in the form of flour.

8. A method, comprising: feeding a pongamia composition according to any one of claims 4 to 7 to a non-ruminant animal.

9. The method of claim 8, wherein the non-ruminant animal is a human.

10. The method of claim 8, wherein the non-ruminant animal is poultry.

11. The method of claim 10, wherein the poultry is a chicken.

12. A poultry feed, comprising:

a base feed; and

a pongamia composition according to any one of claims 4 to 7.

13. A poultry feed, comprising:
corn;
a soybean supplement; and
a pongamia composition according to any one of claims 4 to 7.

14. A food composition, comprising:
a pongamia composition according to any one of claims 4 to 7.

15. The food composition of claim 14, wherein the food composition is a confection, condiment, cereal composition, baked good, baking good, cooking adjuvant, dairy product, dietary supplement, tabletop sweetener composition beverage, or other beverage product.