CLAIMS

1. A food product comprising from 2.5 g to 7.5 g of a dietary fiber composition per 50 g available carbohydrate of the food product, wherein the dietary fiber composition comprises from 48% to 90% (w/w) glucomannan, from 5% to 20% (w/w) xanthan gum, and from 5% to 30% (w/w) alginate.

2. The food product of Claim 1, wherein the food product is a solid food product that is rice, cereal, granola, baked goods, pasta or meat.

3. The food product of Claim 2, wherein the meat is poultry, beef, pork, or fish.

4. The food product of Claim 1, wherein the food product is a dairy product that is milk, yogurt, cheese, butter, or ice cream.

5. The food product of Claim 1, wherein the food product is margarine.

6. The food product of Claim 1 wherein the food product is a liquid or semi-liquid selected from the group consisting of a meal replacement drink; a smoothie, a dietary supplement, a soup, and a juice.

7. The food product of Claim 1, wherein the dietary fiber composition comprises from about 50% to about 80% (w/w) glucomannan, from about 10% to about 20% (w/w) xanthan gum, and from about 10% to about 20% (w/w) alginate.

8. The food product of Claim 1, wherein the alginate is a medium viscosity alginate.

9. The food product of Claim 1, wherein the dietary fiber composition comprises granules in the size range of from about 40 mesh to about 60 mesh.

CLAIMS

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A dietary fiber composition comprising a fiber blend comprising from about 48% to about 90% (w/w) glucomannan, from about 5% to about 20% (w/w) xanthan gum, and from about 5% to about 30% (w/w) alginate, and at least one lipid or blend thereof, wherein the lipid or blend thereof comprises at least 20% w/w of the total dietary fiber composition.

2. The dietary fiber composition of Claim 1, wherein the dietary fiber composition has a viscosity of at least 2,000 centipoise after 15 minutes under gastric conditions.

3. The dietary fiber composition of Claim 1, wherein the dietary fiber composition has a viscosity of at least 10,000 centipoise after 15 minutes under gastric conditions.

4. The dietary fiber composition of Claim 1, wherein the fiber blend comprises from about 50% to about 80% (w/w) glucomannan, from about 10% to about 20% (w/w) xanthan gum, and from about 5% to about 30% (w/w) alginate.

5. The dietary fiber composition of Claim 1, wherein the fiber blend comprises from about 60% to about 80% (w/w) glucomannan, from about 10% to about 20% (w/w) xanthan gum, and from about 5% to about 30% (w/w) alginate.

6. The dietary fiber composition of Claim 1, wherein the fiber blend comprises about 60% to about 80% (w/w) glucomannan, from about 10% to about 20% (w/w) xanthan gum, and from about 9% to about 17% (w/w) alginate.

7. The dietary fiber composition of Claim 6, wherein the fiber blend comprises about 70% (w/w) glucomannan, about 13% (w/w) xanthan gum, and about 17% (w/w) alginate.

8. The dietary fiber composition of Claim 6, wherein the fiber blend comprises about 70% glucomannan, about 17% (w/w) xanthan and about 13% (w/w) alginate.

9. The dietary fiber composition of Claim 1, wherein the lipid or blend thereof comprises medium chain triglycerides.

10. The dietary fiber composition of Claim 1, wherein the lipid or blend thereof comprises an edible oil.

11. The dietary fiber composition of Claim 10, wherein the edible oil is selected from the group consisting of soybean oil, palm kernel oil, fish oil, canola oil, or a mixture thereof.

12. The dietary fiber composition of Claim 9, wherein the dietary fiber composition comprises the fiber blend (VFB) and the medium chain triglycerides (MCT) at a ratio of from about 30:70 (w/w VFB:MCT) to about 80:20 (w/w VFB:MCT).

13. The dietary fiber composition of Claim 1, further comprising an outer soft gelatin capsule.

14. The dietary fiber composition of Claim 13, wherein the outer softgel capsule comprises a combination of gelatin, glycerin, and water.

15. A dietary fiber composition comprising:

(a) a fiber blend comprising glucomannan, xanthan gum, and alginate; and

(b) at least one lipid or blend thereof;

wherein the fiber blend and the at least one lipid are each present at an amount sufficient to allow the dietary fiber composition to exhibit a viscosity in water of from about 1 to about 3,500 centipoise after 5 minutes and at least a 5-fold increase in viscosity within 15 minutes after exposure to gastric conditions.

16. The dietary fiber composition of Claim 15, wherein the fiber blend comprises from about 50% to about 90% (w/w) glucomannan.

17. The dietary fiber composition of Claim 15, wherein the fiber blend and the at least one lipid are each present at an amount sufficient to allow the composition to exhibit a viscosity in water of from about 1 to about 3,500 centipoise after 5 minutes and a viscosity of at least 20,000 centipoise after 15 minutes under gastric conditions.

18. The dietary fiber composition of Claim 15, further comprising an outer softgel capsule comprises a combination of gelatin, glycerin, and water.

19. A food product comprising from 2.5 g to 7.5 g of a composition comprising a fiber blend per 50 g available carbohydrate of the food product, wherein the fiber blend comprises from about 48% to about 90% (w/w) glucomannan, from about 5% to about 20% (w/w) xanthan gum, and from about 5% to about 30% (w/w) alginate.

20. The food product of Claim 19, wherein the food product is a solid food.

21. The food product of Claim 20, wherein the food product comprises grain.

22. The food product of Claim 21, wherein the food product is selected from the group consisting of rice, cereal, granola, oatmeal, baked goods, and pasta.

23. The food product of Claim 20, wherein the food product comprises meat selected from the group consisting of poultry, beef, pork, and fish.

24. The food product of Claim 19, wherein the food product is a dairy product selected from the group consisting of milk, yogurt, cheese, butter, margarine and ice cream.

25. The food product of Claim 19, wherein the food product is a liquid or semi-liquid selected from the group consisting of a meal replacement drink; a smoothie, a dietary supplement, a soup, and a juice.

26. The food product of Claim 19, wherein the fiber blend comprises from about 50% to about 80% (w/w) glucomannan, from about 10% to about 20% (w/w) xanthan gum, and from about 9% to about 17% (w/w) alginate.

27. The food product of Claim 19, wherein the fiber blend comprises from about 60% to about 90% (w/w) glucomannan, from about 5% to about 20% (w/w) xanthan gum, and from about 5% to about 30% (w/w) alginate.

28. The food product of Claim 19, wherein the composition comprises granules in the size range of from about 40 mesh to about 60 mesh.

29. A method for reducing the glycemic index of a food product, the method comprising adding to the food product prior to consumption a composition comprising a dietary fiber blend in an amount effective to reduce the glycemic index of the food product by at least 5 glycemic index units, wherein the fiber blend comprises from about 48% to about 90% (w/w) glucomannan, from about 5% to about 20% (w/w) xanthan gum, and from about 5% to about 30% (w/w) alginate.

30. The method of Claim 29, wherein the composition is baked into the food product.

31. The method of Claim 29, wherein the composition is mixed with the food product prior to consumption.

32. The method of Claim 29, wherein the composition is sprinkled onto the food product prior to consumption.

33. The method of Claim 29, wherein the food product is a solid food product selected from the group consisting of rice, cereal, granola, baked goods, pasta and meat.

34. The method of Claim 29, wherein the food product is a dairy product selected from the group consisting of milk, yogurt, cheese, butter, margarine and ice cream.

35. The method of Claim 29, wherein the amount of the composition added to the food product is in the range of 2.5 g to 7.5 g of composition per 50 g available carbohydrate of the food product.

36. The method of Claim 29, wherein the composition comprises granules in the size range of from about 40 mesh to about 60 mesh.

37. A method of reducing the glycemic volatility in a subject in need thereof, comprising administering to the subject in need thereof a composition comprising a fiber blend comprising from about 48% to about 90% (w/w) glucomannan, from about 5% to about 20% (w/w) xanthan gum, and from about 5% to about 30% (w/w) alginate.

38. The method of Claim 37, wherein the composition is administered to the subject in an amount from 5.0g to 15.0g per day.

39. The method of Claim 37, wherein the composition is administered to the subject for at least 4 weeks.

40. The method of Claim 37, wherein the subject in need thereof is a human subject selected from the group consisting of an overweight subject, an obese non-diabetic subject and a type II diabetic subject.

41. The method of Claim 37, wherein the fiber blend comprises from about 50% to about 80% (w/w) glucomannan, from about 10% to about 20% (w/w) xanthan gum, and from about 9% to about 17% (w/w) alginate.

42. The method of Claim 37, wherein the fiber blend comprises from about 50% to about 80% (w/w) glucomannan, from about 10% to about 20% (w/w) xanthan gum, and from about 9% to about 17% (w/w) alginate.

43. The method of Claim 37, wherein the composition further comprises at least one lipid or blend thereof, wherein the lipid or blend thereof comprises at least 20% w/w of the total dietary fiber composition.

44. The method of Claim 37, wherein the composition comprises granules in the size range of from about 40 mesh to about 60 mesh.

45. A method of reducing glycemic volatility in a subject comprising:

(a) measuring a subject with a continuous glucose monitoring system for a designated time period to determine the baseline glycemic volatility of the subject; and

(b) administering a effective dosage of a composition comprising a fiber blend to the subject, the fiber blend comprising from about 48% to about 90% (w/w)

glucomannan, from about 5% to about 20% (w/w) xanthan gum, and from about 5% to about 30% (w/w) alginate for a time period effective to reduce the glycemic volatility of the subject as compared to the baseline glycemic volatility measured in step (a).

46. The method of Claim 45, wherein the subject is measured with a continuous glucose monitoring system for at least 24-hours.

47. The method of Claim 45, wherein the subject is treated with a dosage of the composition from 5.0g to 15.0 g per day for at least 4 weeks.

48. The method of Claim 45, wherein the subject is a non-diabetic overweight or obese subject having a baseline glycemic volatility with peak glucose levels exceeding 120 mmol/L and wherein treatment with the fiber blend reduces the glycemic volatility to a peak glucose level below 120 mmol/L.

49. The method of Claim 45, wherein the subject is a diabetic obese subject having a baseline glycemic volatility with peak glucose levels exceeding 220 mmol/L and wherein treatment with the fiber blend reduces the glycemic volatility to a peak glucose level below 220 mmol/L.

50. The method of Claim 45, wherein the composition comprises granules in the size range of from about 40 mesh to about 60 mesh.

51. A method of producing a dietary fiber composition comprising:

(a) mixing from about 48% to about 90% (w/w) glucomannan, from about 5% to about 20% (w/w) xanthan gum, and from about 5% to about 30% (w/w) alginate; and

(b) adding from about 20% to about 70% of a lipid or blend thereof and mixing to generate the dietary fiber composition.

52. The method of Claim 51, further comprising granulating the mixture of step (a) prior to step (b).

53. A dietary fiber composition produced according to the method of Claim 51 or Claim 52.