CLAIMS

1. A process for preparing a protein-carbohydrate composite food ingredient, comprising the step of mixing a protein source and a carbohydrate source in an extruder and subjecting the mixture of a protein source and a carbohydrate source to low moisture extrusion to produce a protein-carbohydrate composite;
wherein
the total protein content added to the extruder is at least 80% w/w on a dry weight basis and:
the total initial moisture content of the extruder barrel is less than 40% (w/w); and
the carbohydrate source is selected from pectins, carrageenans and gums.

2. The process according to claim 1 wherein the protein source comprises one or more of a protein liquor, a protein concentrate and a protein isolate.

3. The process according to claim 1 or 2 wherein the protein source comprises one or more of pea protein liquor, pea protein concentrate, pea protein isolate, soy protein liquor, soy protein concentrate, soy protein isolate, faba bean liquor, faba bean concentrate, faba bean isolate, lupin protein liquor, lupin protein concentrate, lupin protein isolate and dry powder or liquor form of peanuts, potato, rice, hemp, sunflower seed, flaxseed, wheat, corn, sorghum, chickpea, barley, quinoa, maca and fungal protein from *Fusarium Venenatum*.

4. The process according to claim 3 wherein the protein source comprises one or more of pea protein liquor, pea protein concentrate, pea protein isolate, soy protein liquor, soy protein concentrate, soy protein isolate, faba bean liquor, faba bean concentrate, faba bean isolate, lupin protein liquor, lupin protein concentrate, and lupin protein isolate.

5. The process according to any one of claims 1-4 wherein the carbohydrate source

comprises one or more selected from pectins iota carrageenan, kappa carrageenan, lambda carrageenan, alginate, guar gum, xanthan gum, locust bean gum, gellan gum, methyl cellulose, gum carboxymethyl cellulose, cellulose and hemicellulose..

6. The process according to any one of claims 1-5 wherein the carbohydrate source comprises one or more selected from, high methoxy pectin and kappa carrageenan,

7. The process according to any one of claims 1-6 wherein the carbohydrate source contains a reducing sugar.

8. The process according to any one of claims 1-7 wherein the w/w ratio of protein source to carbohydrate source is from 90:10 to 99:1.

9. The process according to any one of claims 1-8 wherein the mixture added to the extruder does not contain, or does not substantially contain an edible fibre.

10. The process according to any one of claims 1-8 wherein the mixture added to the extruder contains an edible fibre.

11. The process according to claim 10 wherein the edible fibre is selected from oat bran, wheat bran, barley bran, corn bran and carrot fibre.

12. The process according to any one of claims1-11 wherein the total moisture content added to the extruder is 39% (w/w) or less, by weight.

13. The process according to claim 12 wherein the total moisture content added to the extruder is in the range of 39-30%, by weight.

14. The process according to any one of claims 1-12 wherein the total moisture content added to the extruder is less than 30% by weight.

15. The process according to any one of claims 1-14 wherein the extruder barrel contains

1-6 temperature zones.

16. The process according to any one of claims 1-15 wherein the extruder barrel contains one or more zones heated to a temperature in the range of 40-180°C.

17. The process according to claim 16 wherein the extruder barrel contains one or more zones heated to a temperature in the range of 60-140°C.

18. The process according to any one of claims 15-17 wherein the retention time of the protein source and carbohydrate source mixture in each zone is from 2-3 seconds to a120-240 seconds.

19. The process according to any one of claims 1-17 wherein the protein-carbohydrate composite exiting the extruder is held in an ambient temperature or heated die.

20. The process according to claim 18, wherein the die is heated to a temperature in the range of 80-120°C.

21. The process according claim 19 or 20 wherein the die has a bore length in the range of 10-100 cm.

22. The process according to claim 21 wherein the die has a bore length in the range of30-80 cm.

23. The process according to any one of claims 19-22 wherein the protein carbohydrate composite is held in the die for 10-100 seconds.

24. The process according to any one of claims 1-22 wherein the protein-carbohydrate composite is subjected to further drying.

25. The process according to claim 24 wherein the protein-carbohydrate composite is dried at a temperature of 85°C or less for a time from 2-3 hours up to 18-24 hours.

26. A protein-carbohydrate composite food ingredient prepared by the method of any one of claims 1-25.

27. The protein-carbohydrate composite according to claim 26 with a moisture content of less than 50% by weight.

28. A meat mimetic food product comprising the food ingredient of claim 26 or 27.

29. The meat mimetic food product according to claim 28 selected from burger patties, kebabs, meatballs, meatloaves, sausages, nuggets, strips, fingers, cutlets, steaks, and meat sauces and fillings.