Claims

[Claim 1]

A method for producing a textured protein material that is freeze-dried, the method comprising:

(A) introducing a raw material including a protein raw material into an extruder, adding water to attain a water content of from 60 to 80 wt.% with respect to a total amount of the water and the raw material including the protein raw material, kneading and heating under pressure the resulting mixture, cooling the kneaded mixture in a cooling die installed at an outlet of the extruder and including a hole having a length of a longest portion of 10 mm or greater, and extruding the mixture through the cooling die to obtain an unpuffed textured product;

(B) cutting the unpuffed textured product obtained in (A) into a rectangular parallelepiped shape including sides from 5 to 12 mm, or cutting the unpuffed textured product obtained in (A) into a flat shape having a thickness from 0.1 to 5 mm, a length from 1 to 80 mm in an extrusion direction, and a width from 1 to 50 mm; and

(C) freezing the unpuffed textured product obtained in (B) at -5 to -25°C and freeze-drying the unpuffed textured product.

[Claim 2]

The method for producing a textured protein material according to claim 1, wherein, in step (A), a content of the protein raw material in the raw material is from 40 to 95 wt.% in terms of solid content.

[Claim 3]

The method for producing a textured protein material according to claim 1 or 2, wherein the protein raw material is a plant protein material.

[Claim 4]

The method for producing a textured protein material according to claim 3, wherein the plant protein material is a reduced-fat soybean protein material satisfying the following requirements (a) and (b):

(a) a protein content based on solid content is 40 wt.% or greater, and

(b) a lipid content of the soybean protein material, which is a content of an extract by a chloroform/methanol mixed solvent, is less than 40 wt.% with respect to the protein content.

[Claim 5]

The method for producing a textured protein material according to any one of claims 1-4, wherein, in step (A), the raw material further includes a dietary fiber in an amount from 1 to 10 wt.% in terms of solid content.

[Claim 6]

The method for producing a textured protein material according to any one of claims 1-5, wherein, in step (A), the raw material further includes a starch in an amount from 1 to 5 wt.% in terms of solid content.

[Claim 7]

The method for producing a textured protein material according to any one of claims 1-6, wherein, in step (A), the raw material further includes an oil and fat in an amount from 0.1 to 15 wt.% in terms of solid content.

[Claim 8]

The method for producing a textured protein material according to any one of claims 1-7, wherein the textured protein material is used for instant food.

[Claim 9]

A textured protein material that is freeze-dried, the textured protein material comprising a protein raw material in an amount from 40 to 95 wt.% in terms of solid content and having a shape satisfying the following (1) or (2):

(1) a rectangular parallelepiped shape including sides from 5 to 12 mm, or

(2) a flat shape having a thickness from 0.1 to 5 mm, a length from 1 to 80 mm in an extrusion direction, and a width from 1 to 50 mm.

[Claim 10]

The textured protein material according to claim 9, wherein the protein raw material is a plant protein material.

[Claim 11]

The textured protein material according to claim 9 or 10, wherein the plant protein material is a reduced-fat soybean protein material satisfying the following requirements (a) and (b):

(a) a protein content based on dry matter is 40 wt.% or greater, and

(b) a lipid content of the soybean protein material, which is a content of an extract by a chloroform/methanol mixed solvent, is less than 40 wt.% with respect to the protein content.

[Claim 12]

The textured protein material according to any one of claims 9-11, further comprising a dietary fiber in an amount from 1 to 10 wt.% in terms of solid content.

[Claim 13]

The textured protein material according to any one of claims 9-12, further comprising a starch in an amount from 1 to 5 wt.% in terms of solid content.

[Claim 14]

The textured protein material according to any one of claims 9-13, further comprising an oil and fat in an amount from 0.1 to 15 wt.% in terms of solid content.

[Claim 15]

The textured protein material according to any one of claims 9-14, wherein the textured protein material is used for instant food.

[Claim 16]

A meat substitute comprising:

the textured protein material described in any one of claims 9-14.

[Claim 17]

An instant food ingredient comprising:

the textured protein material described in any one of claims 9-14.