Claims

1. A method for preparing a legume starch, characterized in that it comprises the following steps:

1) Preparing a starch milk with a dry matter content of between 30 and 40% by weight, preferably 32% by weight,

2) Heating the starch milk prepared in this way to a temperature 10 to 15°C lower than its gelatinization temperature,

3) Stirring the starch milk obtained in this way at this temperature for between 45 minutes and 7 hours, preferably between 1 hour and 6 hours,

4) Recovering, filtering and drying the starch milk treated in this way,

wherein said method does not comprise a step of enzymatic treatment of the starches.

2. The method according to claim 1, characterized in that the legume starch is selected from the group of pea, bean, broad bean, field bean, lentil, alfalfa, clover and lupine starches, and is particularly pea starch.

3. The method according to one or the other of claims 1 and 2, characterized in that the content of slowly digestible fraction (SDS) increases 10 to 20% by weight, preferably 12 to 17% by weight with respect to the SDS content by weight of the initial starch, wherein the SDS content by weight is determined according to the *in vitro* digestion process conditions of the method by H. N. Englyst et al (published in 1992 in the *European Journal of Clinical Nutrition,* volume 46, pp S33 – S50).

4. The method according to any of the preceding claims, characterized in that for pea starch, the starch milk is heated to a temperature of between 48 and 53°C, preferably to a temperature of the order of 50°C.

5. The method according to claim 4, characterized in that the pea starch milk is maintained at this temperature for 1 hour to 6 hours, preferably 1 hour.

6. A pea starch prepared according to the method of any one of the preceding claims, characterized in that the SDS content is greater than 40% by weight, preferably between 40 and 50% by weight, wherein the SDS content by weight is determined according to the *in vitro* digestion process conditions of the method by H. N. Englyst et al (published in 1992 in the *European Journal of Clinical Nutrition,* volume 46, pp S33 – S50).

7. Use of a starch according to claim 6 in food and medical fields of application, especially for food for sportspersons or specialist nutrition.