CLAIMS

1. A method for preparing a legume protein isolate obtained from plant parts and having improved digestive comfort, said method comprising the following successive steps:

a) washing said plant parts in acidic conditions absent any emulsifier to remove alpha-galactosides, thereby obtaining acid washed plant parts having a reduced alpha-galactoside content;

b) contacting said acid washed plant parts with an alkaline solution to provide a mixture comprising said acid washed plant parts in a liquid fraction, and

c) recovering the liquid fraction from the mixture, thereby obtaining a protein isolate comprising at least 80% protein on a dry matter basis and less than 0.10% alpha-galactosides by weight of the protein isolate,

wherein said method does not comprise any acidic precipitation step;

wherein said legume is not soybean; and

wherein said plant parts are seeds in the form of fluor or dehulled seed that have not been subjected to any step of defatting of said plant parts.

2. The method according to claim 1, wherein the pH of said washing step is of 3.5 to 5.

3. The method according to claim 1 or 2, wherein said acid washed plant parts are recovered at the end of said washing step by solid/liquid separation.

4. The method according to any one of claims 1 to 3, wherein said acid washed plant parts have a pH comprised between 3.5 and 5.

5. The method according to any one of claims 1 to 4, said method further comprising between the washing step a) and the contacting step b), a step of rinsing said acid washed plant parts with an aqueous solution.

6. The method according to claim 5, wherein said acid washed plant parts have a pH comprised between 3.5 and 5 after said rinsing step.

7. The method according to any one of claims 1 to 6, wherein said alkaline solution used in step b) has a pH of 7 to 9.

8. The method according to any one of claims 1 to 7, wherein said liquid fraction is recovered at step c) by solid/liquid separation.

9. The method according to any one of claims 1 to 8, wherein said steps b) and c) are repeated at a higher pH.

10. The method according to any one of claims 1 to 9, wherein said protein isolate is directly obtained at said recovering step c).

11. The method according to any one of claims 1 to 10, further comprising after said recovering step c), a neutralization step, a heat treatment step, a concentration step and/or a drying step.

12. The method according to claim 1, wherein said seeds are provided in the form of flour in said washing step a).