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सत्यमेव जयते

भारत सरकार
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एकस्व कार्यालय /THE PATENT OFFICE
बौद्धिक सम्पदा भवन/ I.P.O. BUILDING
सी.पी. 2, सैक्टर V/ CP-2, Sector V,
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सं. \ No. 1886/KOLNP/2009

दिनांक \ Dated the 11/05/2018

सेवा मे, \ To :

Address of Service:- P. MAJUMDAR C/O L.S. DAVAR & CO. 32, RADHA MADHAB DUTTA GARDEN LANE KOLKATA-700010
Email Id:-

विषय :- पेटेंट आवेदन संख्या 1886/KOLNP/2009 के संबंध मे अधिनियम की धारा 43 के तहत पेटेंट अनुदान तथा पेटेंट रजिस्टर मे प्रविष्टि की सूचना
Sub :- Intimation of the grant and recordal of patent under section 43 of the Act in respect of patent application no. 1886/KOLNP/2009

महोदय/महोदया,
Sir/Madam,

आपको सूचित किया जाता है कि पेटेंट अधिनिय, 1970 की धारा 12 व 13 तथा उस आधार पर बने नियम के तहत उपर्युक्त पेटेंट आवेदन के परीक्षण [व 27/04/2018 को हुई सुनवाई] के उपरांत एतद्द्वारा पेटेंट अनुदान किया जाता है। तथा पेटेंट अनुदान की प्रविष्टि 11/05/2018 को पेटेंट रजिस्टर मे कर दी गयी है।

This is to Inform you that following the examination of above mentioned patent application under section 12 and 13 of The Patents Act, 1970 and Rules made thereunder [and hearing held on 27/04/2018] a patent is hereby granted and recorded in the Register of Patents on the 11/05/2018. The Patent Certificate is enclosed herewith.

पेटेंट संख्या \ Patent No	: 296700
आवेदक का नाम \ Name Of Applicant	: EMSLAND-STÄRKE GMBH
पेटेंट दिनांक \ Date of Patent	: 24/09/2007
पूर्विक्ता तिथि \ Priority Date	: 26/10/2006
परीक्षण हेतु अनुरोध दाखिल करने की तिथि \ Filling date of Request for examination	: 13/10/2010
शीर्षक \ Title	: PROCESS FOR OBTAINING LEGUMINOUS PROTEIN FRACTIONS OF MODERATE MOLECULAR WEIGHT, LEGUMINOUS PROTEIN FRACTIONS AND USE THEREOF
दावों की संख्या \ Number of claims	: 7

उपर्युक्त पेटेंट के अनुदान का प्रकाशन अधिनियम की धारा 43 के तहत पेटेंट कार्यालय के आधिकारिक जर्नल मे किया जाएगा।
The grant of above mentioned patent will be published in the Official Journal of the patent Office under section 43 of the Act.

पेटेंट अधिनियम 1970 यथा संशोधित पेटेंट (संशोधन) नियम, 2005/ पेटेंट नियम, 2003 यथा संशोधित पेटेंट (संशोधन) नियम, 2016 की धारा 142 की उप-धारा (4) के प्रावधानों के तहत उपरोक्त प्रविष्टि की तिथि से 3 माह के भीतर इस कार्यालय मे नवीकरण शुल्क जमा किया जाना चाहिए।
The payment of renewal fee is required to be made at this office within three(3) months from the aforesaid date of recording according to the proviso in sub-section(4) of Section 142 of The Patents Act,1970, as amended by The Patents (Amendment) Act, 2005 / The Patents Rules, 2003 as amended by The Patents (Amendment) Rules, 2016.

Anita Jatav

(नियंत्रक पेटेंट)
Controller of Patents

टिप्पणी / Note :

1. संशोधित नवीकरण शुल्क हेतु कृपया महानियंत्रक पेटेंट, अभिकल्प एवं व्यापार चिह्न की आधिकारिक वैबसाइट www.ipindia.gov.in पर उपलब्ध पेटेंट (संशोधन) नियम 2016 की प्रथम अनुसूची (शुल्क) देखें।
For revised renewal fees kindly refer to the First Schedule (fees) of The Patents (Amendment) Rules 2016 available on the official website of Controller General of Patents, Designs and Trade Marks www.ipindia.gov.in
2. कार्यालय द्वारा पेटेंट प्रमाणपत्र की कोई भी कागजी प्रति अलग से जारी नहीं की जाएगी।
No hard copy of Patent Certificate shall be issued separately by the office.

WE CLAIM :

1. Method for obtaining a coagulated legume protein fraction with a molecular weight >14, characterized by :

   Providing fruit juice;

   Coagulation of the legume protein;

   Separating a legume protein fraction, whose main quantity has a molecular weight larger than 14 kD up to 600 kD

   If necessary, washing the coagulated legume protein fraction; and

   If necessary, drying the legume protein fraction.

2. Method for obtaining coagulated legume protein fractions incl.:

Fractionating the legume protein fraction as claimed in claim 1 by :

Separating a high-molecular-weight legume protein fraction whose bulk has a molecular weight of more than 116 to approx. 600 kD

Separating a medium-molecular coagulated legume protein fraction of the medium-molecular-weight legume protein fraction with a molecular weight between 14 - 120 kD, with the majority of the molecular weight distribution being between 20 to 66 kD; from the solution which has been obtained by the separation of the high-molecular-weight legume protein fraction;

Optionally, washing the coagulated legume protein fraction(s); and

Optionally, drying the legume protein fraction.

3. Method as claimed in claim 2, characterized by :

Precipitating the high-molecular-weight legume protein fraction whose majority has a molecular weight larger than 116 kD to approx. 600 kD, by adjusting a pH value near the isoelectric point in the fruit juice while precipitating a fraction and

Mechanically separating the fraction precipitated in this way;

Precipitating a medium-molecular coagulated legume protein fraction under warm conditions by treating, at pH 3 to 6, and between 60 to 90°C, preferably at approximately 65 - 80°C the solution obtained after separation of the high-molecular-weight legume protein fraction

And mechanically separating the medium-molecular-weight coagulated legume protein fraction with a molecular weight of between approximately 14 and 120 kD, with the majority of the molecular weight distribution being between 20 and 66 KD.

4. Method as claimed in claim 2, characterized by :

Precipitating a high-molecular-weight legume protein fraction whose majority has molecular weight reaching from above 116 kD to approx. 600 kD, by leaving the native pH value of the fruit juice as well as adjusting the temperature from room temperature up to 40°C

Mechanically separating the fraction precipitated thus;

Precipitating a medium-molecular coagulated legume protein fraction under warm conditions by treating, at pH 3 to 6, and between 60 to 90°C, preferably between 70 - 80°C, the solution obtained after separation of the high-molecular-weight legume protein fraction and

mechanically separating the medium-molecular-weight coagulated legume protein fraction with a molecular weight of between approximately 14 and 97 kD, with the majority of the molecular weight distribution being between 20 and 66 kD;

5. Method as claimed in one of the previous claims, whereby the washing is carried out with water with a temperature, preferably of room temperature, up to 80°C, preferably precipitation temperature.

6. Method as claimed in claim 5, whereas the washing is carried out with a pH value in the range of 3 to 6 the isoelectric point.

7. Method as claimed in one of the previous claims, characterized in that the mechanical separation is carried out with a decanter.

8. Method as claimed in one of the previous claims, characterized in that the separation steps are carried out under oxidation-retardant conditions, such as by adding reducing agents such as ascorbic acid, sodium bisulfate or SO_2; working under protective gas and working in gas-proof plants.

9. Method as claimed in one of the previous claims, characterized in that the legume protein is a legume protein, pea protein, field bean protein, lupines protein, lentil protein etc.

10. Coagulated luminous protein fraction with a molecular weight >14 ≤ 600, obtainable according to the method as claimed in one of the claims 1 - 9.

11. Coagulated legume protein fraction with a medium molecular weight between 14 - 116 kD, obtainable according to the method as claimed in one of the claims 2 - 9, characterized by a molecular weight between approx. 14 - 97 kD, with the majority of the molecular weight distribution being between 20 and 66 kD; with solubility between 2 and 80% in water.

12. Legume protein fraction as claimed in claim 11, characterized in that it is a pea protein fraction with the following parameters;

pH: 4.0 to 5.5, preferably 4.1 - 5.4

isoelectric point: 4.3

Molecular weight: 14 - 97 kD, with a high protein content of 20/22 kD and 40 kD (SDS-page).

13. Legume protein fraction as claimed in claim 11, characterized in that it is a field bean protein fraction with the following parameters;

pH: 4.0 to 5.5, preferably 4.1 - 5.4

isoelectric point: 4.8 - 5.4

Molecular weight : 20 - 116 kD, with a high protein content of 36 kD and 51 kD (SDS-page)

14. Legume protein fraction as claimed in claim 1, characterized in that it is a field bean protein coagulate with the following parameters;

pH: 4.0 to 5.5, preferably 4.1 - 5.4

Molecular weight: 116 - approx. 600 kD (SDS - page)

15. Legume protein fraction as claimed in claim 1, characterized in that it is a pea protein coagulate with the following parameters :

pH: 4.0 to 5.5, preferably 4.1 - 5.4

Molecular weight: 97 - approx. 600 kD (SDS - page).

Dated this 21st day of MAY 2009

S BANERJEE
OF L.S.DAVAR & CO
APPLICANTS' AGENT

WE CLAIM :

1. Method for obtaining a coagulated legume protein fraction with a molecular weight >14, characterized by :

   Providing fruit juice;

   Coagulation of the legume protein;

   Separating a legume protein fraction, whose main quantity has a molecular weight larger than 14 kD up to 600 kD

   If necessary, washing the coagulated legume protein fraction; and

   If necessary, drying the legume protein fraction.

2. Method for obtaining coagulated legume protein fractions incl.:

Fractionating the legume protein fraction as claimed in claim 1 by :

Separating a high-molecular-weight legume protein fraction whose bulk has a molecular weight of more than 116 to approx. 600 kD

Separating a medium-molecular coagulated legume protein fraction of the medium-molecular-weight legume protein fraction with a molecular weight between 14 - 120 kD, with the majority of the molecular weight distribution being between 20 to 66 kD; from the solution which has been obtained by the separation of the high-molecular-weight legume protein fraction;

Optionally, washing the coagulated legume protein fraction(s); and

Optionally, drying the legume protein fraction.

3. Method as claimed in claim 2, characterized by :

Precipitating the high-molecular-weight legume protein fraction whose majority has a molecular weight larger than 116 kD to approx. 600 kD, by adjusting a pH value near the isoelectric point in the fruit juice while precipitating a fraction and

Mechanically separating the fraction precipitated in this way;

Precipitating a medium-molecular coagulated legume protein fraction under warm conditions by treating, at pH 3 to 6, and between 60 to 90°C, preferably at approximately 65 - 80°C the solution obtained after separation of the high-molecular-weight legume protein fraction

And mechanically separating the medium-molecular-weight coagulated legume protein fraction with a molecular weight of between approximately 14 and 120 kD, with the majority of the molecular weight distribution being between 20 and 66 KD.

4. Method as claimed in claim 2, characterized by :

Precipitating a high-molecular-weight legume protein fraction whose majority has molecular weight reaching from above 116 kD to approx. 600 kD, by leaving the native pH value of the fruit juice as well as adjusting the temperature from room temperature up to 40°C

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Precipitating a medium-molecular coagulated legume protein fraction under warm conditions by treating, at pH 3 to 6, and between 60 to 90°C, preferably between 70 - 80°C, the solution obtained after separation of the high-molecular-weight legume protein fraction and

mechanically separating the medium-molecular-weight coagulated legume protein fraction with a molecular weight of between approximately 14 and 97 kD, with the majority of the molecular weight distribution being between 20 and 66 kD;

5. Method as claimed in one of the previous claims, whereby the washing is carried out with water with a temperature, preferably of room temperature, up to 80°C, preferably precipitation temperature.

6. Method as claimed in claim 5, whereas the washing is carried out with a pH value in the range of 3 to 6 the isoelectric point.

7. Method as claimed in one of the previous claims, characterized in that the mechanical separation is carried out with a decanter.

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9. Method as claimed in one of the previous claims, characterized in that the legume protein is a legume protein, pea protein, field bean protein, lupines protein, lentil protein etc.

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11. Coagulated legume protein fraction with a medium molecular weight between 14 - 116 kD, obtainable according to the method as claimed in one of the claims 2 - 9, characterized by a molecular weight between approx. 14 - 97 kD, with the majority of the molecular weight distribution being between 20 and 66 kD; with solubility between 2 and 80% in water.

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13. Legume protein fraction as claimed in claim 11, characterized in that it is a field bean protein fraction with the following parameters;

pH: 4.0 to 5.5, preferably 4.1 - 5.4

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Molecular weight : 20 - 116 kD, with a high protein content of 36 kD and 51 kD (SDS-page)

14. Legume protein fraction as claimed in claim 1, characterized in that it is a field bean protein coagulate with the following parameters;

pH: 4.0 to 5.5, preferably 4.1 - 5.4

Molecular weight: 116 - approx. 600 kD (SDS - page)

15. Legume protein fraction as claimed in claim 1, characterized in that it is a pea protein coagulate with the following parameters :

pH: 4.0 to 5.5, preferably 4.1 - 5.4

Molecular weight: 97 - approx. 600 kD (SDS - page).

Dated this 21st day of MAY 2009

S BANERJEE
OF L.S.DAVAR & CO
APPLICANTS' AGENT

ABSTRACT

TITLE : **PROCESS FOR OBTAINING LEGUMINOUS PROTEIN FRACTIONS OF MODERATE MOLECULAR WEIGHT, LEGUMINOUS PROTEIN FRACTIONS AND USE THEREOF**

The invention relates to a process for producing coagulated leguminous protein fractions of MW > 14, comprising: initial charging of fruit juice; coagulation of the leguminous protein; removal of a leguminous protein fraction whose majority has an MW of from > 14 kD to approx. 600 kD; optionally washing the coagulated leguminous protein fraction thus obtained; and optionally drying the leguminous protein fraction, and to the use of the leguminous protein fraction as a food, food additive, medicament additive, animal feed, in cosmetics, as industrial protein, as an adhesive.