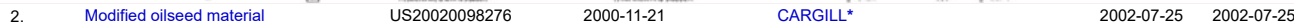
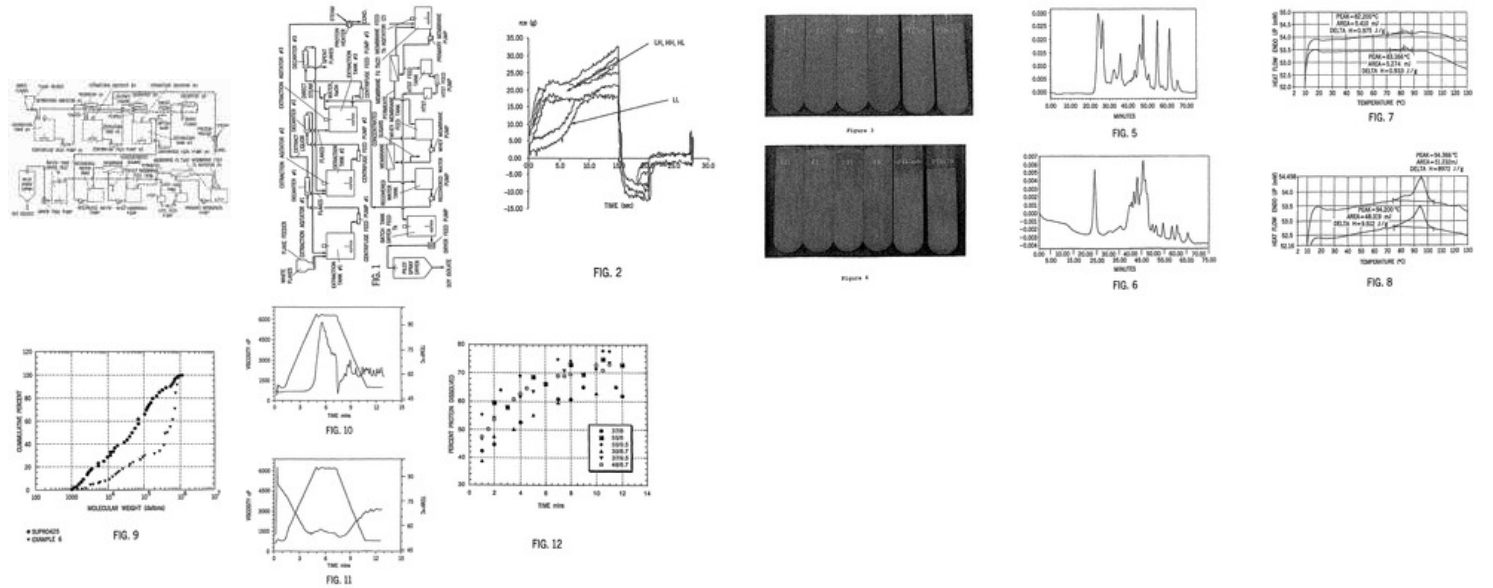


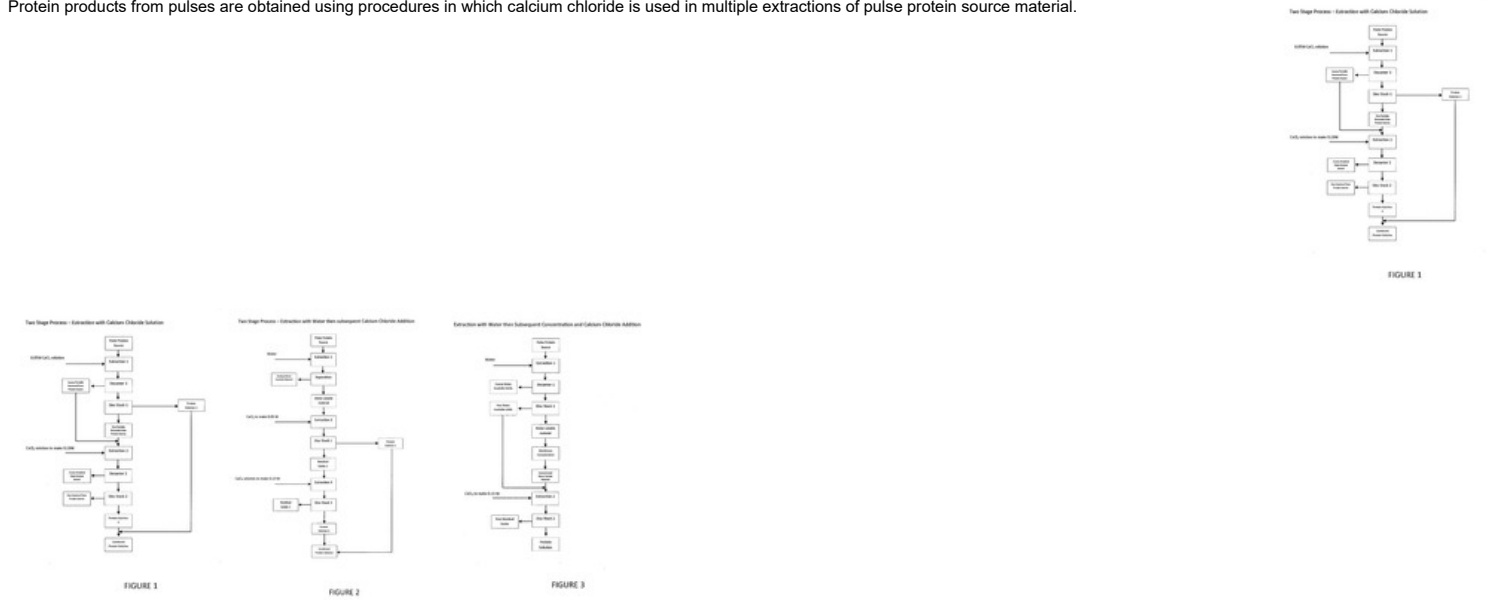
The invention relates to a method for producing a soybean protein concentrate (SPC) flour having a low quantity of soluble carbohydrates and a reduced quantity of oil, comprising the use of ethanol as the only solvent and aqueous solutions of same, which does not require distillation in order to separate the oil, and in which the soybean protein concentrate (SPC) is obtained using a single solvent-removal heat treatment. The method comprises the following steps of: A. preparing the soybeans for treatment involving cleaning, grinding and de-hulling, separating the hull and milling the de-hulled soybeans, thereby obtaining a milled soybean material; B. immersing and expanding the soybean material obtained in step A with a solution of ethanol and oil, containing approximately 20 % oil; C. using ethanol to extract oils and phospholipids from the soybean material obtained in step B by reverse-flow percolation of the ethanol and the mixtures (miscellas) of ethanol/oil with decreasing concentrations through the soybean material; D. immersing and expanding the solid soybean material obtained in step C with a mixture of ethanol/oil and carbohydrates, containing up to 5 % carbohydrates; E. using ethanol/water to extract the carbohydrates from the defatted soybean material obtained in step C by reverse-flow percolation of ethanol/water and the mixtures of ethanol/water/carbohydrates with decreasing concentrations through the defatted soybean material; F. separating the soybean oil from the ethanol in the ethanol/oil solution obtained in step C using a non-distillation method; G. conditioning the ethanol obtained in step F for re-use in a closed loop; H. separating the phospholipids and other impurities from the oil obtained in step F; I. separating the carbohydrates from the ethanol/water of the carbohydrates/ethanol/water solution obtained in step E, thereby obtaining molasses and ethanol that is returned to the process; J. separating, concentrating and fermenting the molasses formed by the carbohydrates obtained in step I in order to produce ethanol; K optionally in step J, separating the isoflavones from the molasses prior to fermentation; L. obtaining soybean protein concentrate (SPC) that is free of **antitnutritional factors** and suitable for human and animal consumption, and producing soybean isolates. According to the invention, the only solvent used is pure ethanol and solutions in water and the process is performed without an intermediate solvent-removal step.



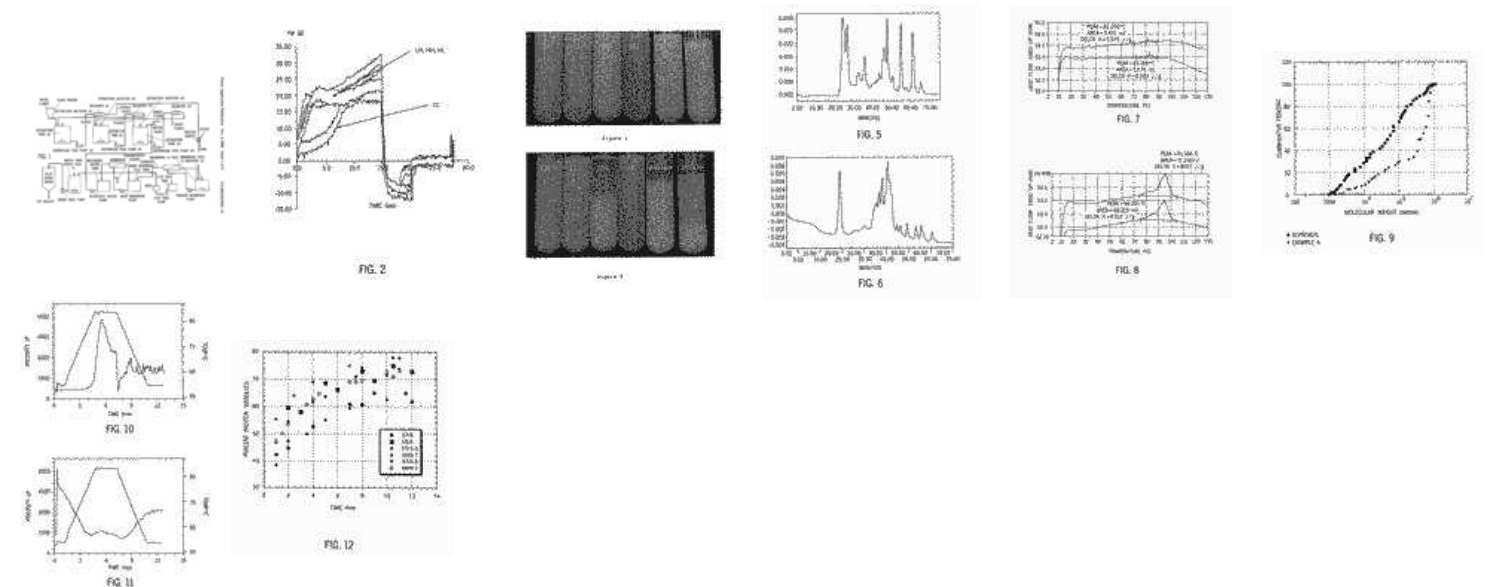
A modified oilseed material formed from oilseed-based material is described. The modified oilseed material can be utilized in a variety of nutritional applications, including the preparation of protein supplemented food products such as beverages, processed meats, frozen desserts, confectionery products, dairy-type products, and cereal grain products. The modified oilseed material typically includes at least 85 wt. % protein (dry solids basis), at least about 40 wt % of the protein in the modified oilseed material has an apparent molecular weight of at least 300 kDa, and/or the modified oilseed material has a MW50 of at least about 200 kDa.



Protein products from pulses are obtained using procedures in which calcium chloride is used in multiple extractions of pulse protein source material.

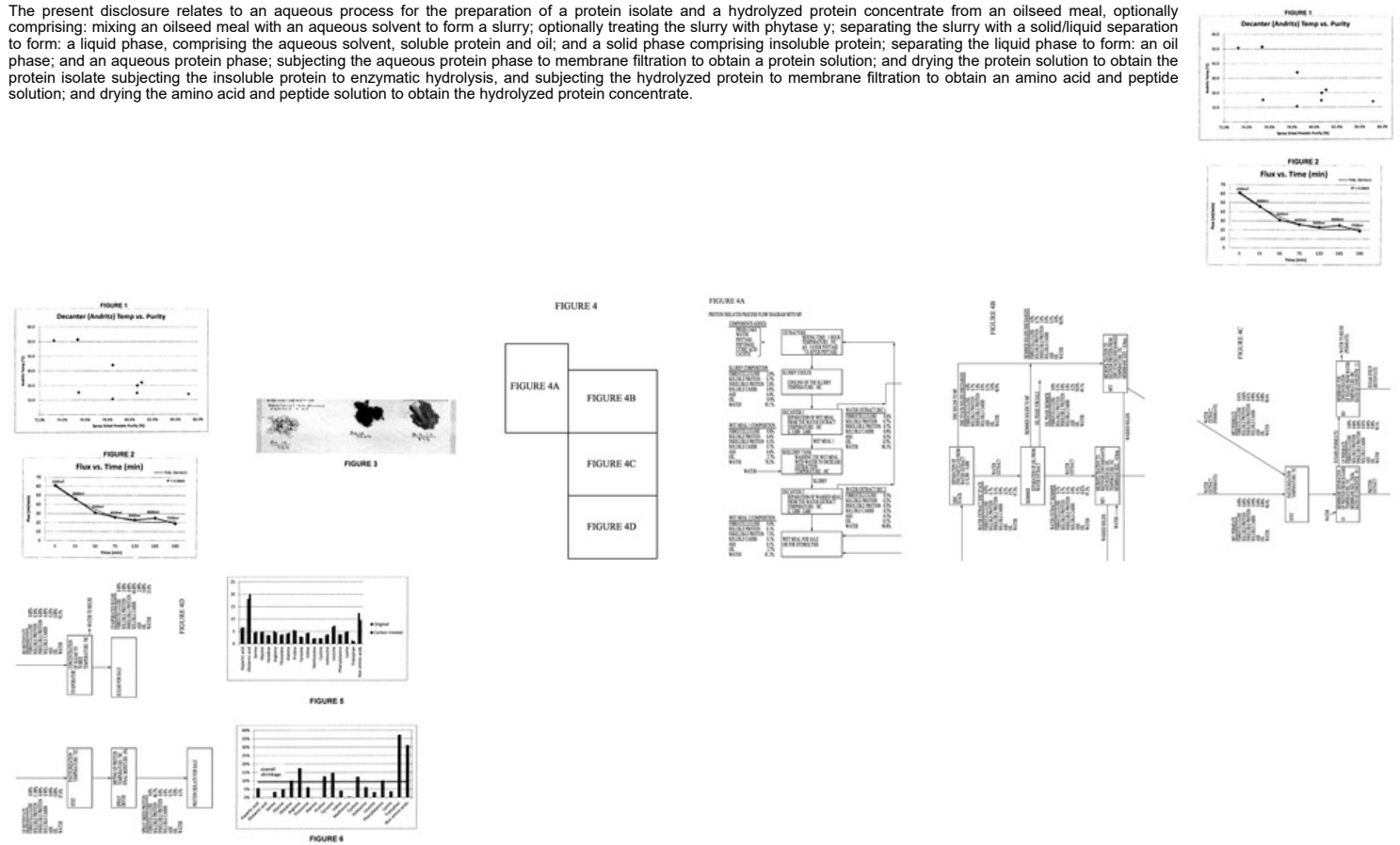


A modified oilseed material formed from oilseed-based material is described. The modified oilseed material can be utilized in a variety of nutritional applications, including the preparation of protein supplemented food products such as beverages, processed meats, frozen desserts, confectionery products, dairy-type products, cooked dough products and cereal grain products. The modified oilseed material typically includes at least 85 wt. % protein (dry solids basis), at least about 40 wt. % of the protein in the modified oilseed material has an apparent molecular weight of at least 300 kDa, and/or the modified oilseed material has a MW50 of at least about 200 kDa.



Pulse protein products having a protein content of at least about 60 wt% (N x 6.25) d.b., preferably at least about 90 wt%, and being soluble at pH values of less than about 4.4 and heat stable at such pH values, or alternatively adjusted in pH to a pH of about 6 to about 8 and further processed by drying the product, recovering and drying any precipitated pulse protein material, heat treating and then drying the product, or heat treating the product and recovering and drying any precipitated pulse protein material are used to provide, at least in part, the protein component of a dairy analogue, dairy alternative or plant/dairy blend frozen dessert mix.

The present disclosure relates to an aqueous process for the preparation of a protein isolate and a hydrolyzed protein concentrate from an oilseed meal, optionally comprising: mixing an oilseed meal with an aqueous solvent to form a slurry; optionally treating the slurry with phytase y; separating the slurry with a solid/liquid separation to form: a liquid phase, comprising the aqueous solvent, soluble protein and oil; and a solid phase comprising insoluble protein; separating the liquid phase to form: an oil phase; and an aqueous protein phase; subjecting the aqueous protein phase to membrane filtration to obtain a protein solution; and drying the protein solution to obtain the protein isolate subjecting the insoluble protein to enzymatic hydrolysis, and subjecting the hydrolyzed protein to membrane filtration to obtain an amino acid and peptide solution; and drying the amino acid and peptide solution to obtain the hydrolyzed protein concentrate.



An aqueous solution of a pulse protein product having a protein content of at least about 60 wt% (N x 6.25) d.b. which is soluble in aqueous media at a pH of less than about 4.4 and heat stable at that pH range is adjusted in pH to a pH of about 6 to about 8. The resulting product is further processed by drying the product, recovering and drying any precipitated pulse protein material, heat treating and then drying the product, or heat treating the product and recovering and drying any precipitated pulse protein material.

Таблица 1. Параметры опреснения при разных температурах pH

Температура, °C	pH	Входная концентрация, %	Выходная концентрация, %	Время, мин
20	6.5	60	55	10
30	6.5	60	55	10
40	6.5	60	55	10
50	6.5	60	55	10
60	6.5	60	55	10
70	6.5	60	55	10
80	6.5	60	55	10
90	6.5	60	55	10
100	6.5	60	55	10

Таблица 2. Составы и свойства кислотных растворов

Продукт	Вязкость, мПа·с
ВРМ-420-11А ВРМ-12	4.31
ВРМ-420-11А ВРМ-12	3.70
ВРМ-420-11А ВРМ-12	3.74

Таблица 3. Составы и свойства кислотных растворов

Продукт	% белка, %
ВРМ-420-11А ВРМ-12	5.58
ВРМ-420-11А ВРМ-12	6.07
ВРМ-420-11А ВРМ-12	6.09

Таблица 4. Составы и свойства кислотных растворов

Продукт	% белка, %
ВРМ-420-11А ВРМ-12	5.58
ВРМ-420-11А ВРМ-12	6.07
ВРМ-420-11А ВРМ-12	6.09

Таблица 5. Составы и свойства кислотных растворов

Продукт	% белка, %
ВРМ-420-11А ВРМ-12	5.58
ВРМ-420-11А ВРМ-12	6.07
ВРМ-420-11А ВРМ-12	6.09

Таблица 6. Параметры опреснения при разных температурах pH

Температура, °C	pH	Входная концентрация, %	Выходная концентрация, %	Время, мин
20	6.5	60	55	10
30	6.5	60	55	10
40	6.5	60	55	10
50	6.5	60	55	10
60	6.5	60	55	10
70	6.5	60	55	10
80	6.5	60	55	10
90	6.5	60	55	10
100	6.5	60	55	10

9. Methods of extracting, concentrating and fractionating proteins and other chemical components

US20070054031

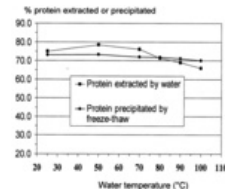
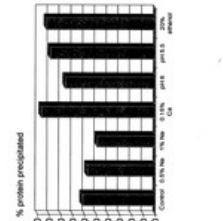
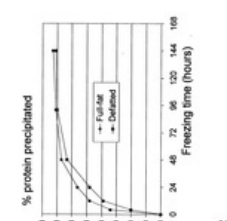
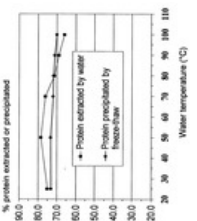
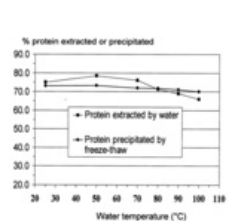
2005-09-02

LIU KESHUN

2007-03-08

2007-03-08

Methods are disclosed herein to extract, concentrate and fractionate proteins and protein-associated complexes with other polymers from soybeans, peanuts, rape, canola, cottonseeds, peas, wheat and other plant materials, based on a principle of cryoprecipitation. The disclosed methods involve no or minimal uses of chemicals, and generate a minimal volume of waste streams. The resulting protein concentrates or isolates have excellent functionality, superior nutritional quality, attractive appearance and mild taste. Based on the sample principle of cryoprecipitation, methods also are also disclosed to extract and concentrate chemical components from living tissues, especially some nutraceutical or phytochemical components from plant materials.



10. Method and plant for converting grains

ITBO20020047

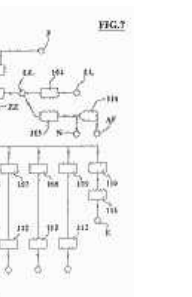
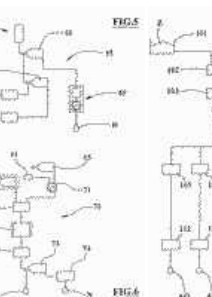
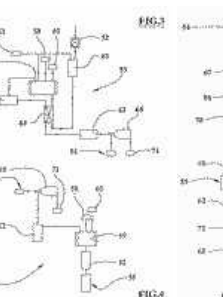
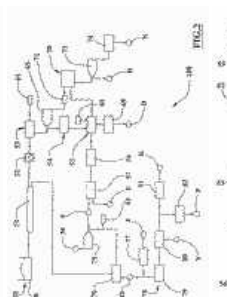
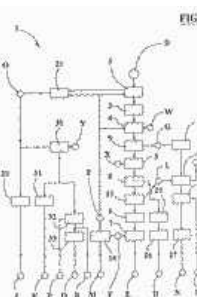
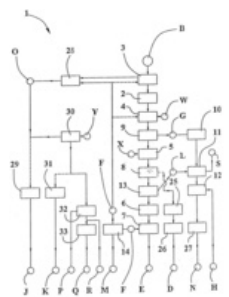
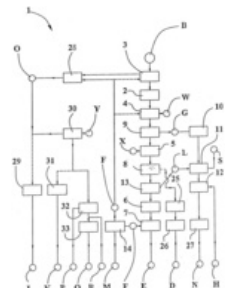
2002-01-30

ABI TAIKE
IBETECH*

2002-01-30

2002-01-30

A method for converting grains (B), containing at least starch, bran (D), germ (G) and proteins (L), includes a washing (3), a grinding (2), a first (4) and second (5) hydrolysis through enzymes, a fermentation (6) through yeasts and a distillation (7) of grains (B) to obtain alcohol (E) and a liquid. The method (1) provides: to subject grains (B) to solid fraction separation (8), by separating bran (D) before the fermentation (6); to subject to fermentation (6) grains (B) deprived of bran (D); to subject to distillation (7) grains (B), deprived of bran (D) and fermented, so obtaining alcohol (E) and a aqueous liquid (F) nearly without solid residues.



11. Stable, durable granules with active agents

WO2007044968

2006-10-12

DANISCO*
DZHENENKOR INTERNEHSHNL INK
GENENCOR
GENENKO INTERNATIONAL

2007-04-19

2007-04-19

A stable, durable granule for feed compositions has a core, at least one active agent; and at least one coating. The active agent of the granule retains at least 50% activity, at least 60% activity, at least 70% activity, at least 80% activity after conditions selected from one or more of a) a feed pelleting process, b) a steam-heated feed pretreatment process, c) storage, d) storage as an ingredient in an unpelleted mixture, and e) storage as an ingredient in a feed base mix or a feed premix comprising at least one compound selected from trace minerals, organic acids, reducing sugars, vitamins, choline chloride, and compounds which result in an acidic or a basic feed base mix or feed premix.

2016-10-27 2016-10-27

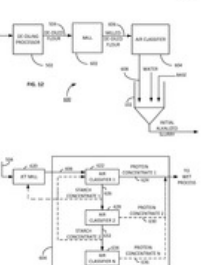
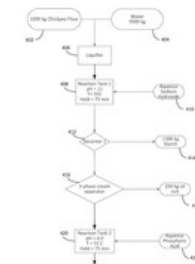


FIG. 13

2010-03-18	2010-03-18
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