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(54) **Title**: FLOUR WITH REDUCED CALORIFIC VALUE

(57) **Abstract**: Hulls of cereal or pseudocereal grains are subjected to a milling with conventional method and obtain fractions from the milling of grain size 1.00 mm to 0.01 mm, preferably from 0.30 to 0.1 mm. Advantage of the present invention is able to obtain bread, confectionery, crisps, chips or pasta with strongly reduced caloric value, which additionally will deliver recommended in the nutrition portion of dietary fiber. For the preparation of the present invention can be applied to hulls of gluten cereals such as all varieties of wheat, rye, barley, oats, triticale and cereal or gluten-free and pseudocerelas like buckwheat, amaranth, corn, quinoa, sorghum or millet.

Flour with reduced calorific value

This invention relates to flour with reduced calorific value obtained from gluten cereals such as all varieties of wheat, rye, barley, oats, triticale and from gluten-free cereal and pseudocereals like buckwheat, amaranth, corn, quinoa, sorghum or millet.

Flour is a product resulting from the fragmentation of cereal grains. It features a fine granulation and loose consistency. Depending on the type of grain, from which the flour came from, it may be used for different purposes - food, feed or industrial uses. Commonly used in the production of bread, confectionery, crisps, chips and pasta, where is a source of polysaccharides and proteins necessary to create a proper structure of dough.

It is known from patent application [U.S. 2009/0047411] flour and process for its preparation from peanut shells. The author proposes a method in which peanut husks are soaked in a solution of an oxidizing or alkaline, then the shells are dried and ground into flour. According to the notification shells may be washed are chelated with solution containing EDTA at a concentration between from about 200 ppm to 400 ppm, then flushed with water once or several times, and then oxidizing with the hydrogen peroxide solution having a concentration of 3 to 70% by weight or volume of 7.5 to 15 wt%, and the soaking time from one minute to 12 hours. The second soaking in an alkaline solution of potassium hydroxide having a concentration of 0.00125 to 0.05% by weight and by volume. The husk is then dried to a moisture content of 1-10% and ground to a size of from 3 to 300 microns in diameter. The resulting flour with peanut coconut husk contains from 71.4 to 72% dietary fiber and in case of treatment is free from allergens typical for peanut.

Kaperczak and Latosiński [Polish Patent No. 373,435] propose a method for the obtaining buckwheat hull preparation, particularly for foodstuffs and pharmaceuticals which consist in the fact that buckwheat husk is subjected to pre-treatment at a temperature of 15-50 ° C by direct action of the water pn buckwheat husk under a pressure of 0.1-0.2 MPa, at the time of 3-5 minutes, and then purified buckwheat husk is subjected to degreasing at a temperature of 50-150 ° C, at the time of 0.5-2 hours by direct action on buckwheat husk with water or steam water at a pressure of 0.4-0.8 MPa. Defatted buckwheat husk is subjected to

roasting and drying at 40-150 ° C, at the time of 0.5-2 hours to obtain a moisture content of 1-10%, and is crushed to the desired size of 0,1-8 mm with known methods.

The essence of the invention involves the use of hulls of cereal grains as main raw material for manufacturing of flour. The hulls are derived from cereal or pseudocereal grains by dehulling with conventional methods. The resulting material shall be milled by conventional methods and then sieved through a sieve with a mesh diameter of 1.00 to 0.01 mm preferably from 0.300 to 0.100 mm. The material obtained after sieving is the flour used as a primary or complementary polysaccharide fraction in composing all kinds of pastries.

Advantage of the present invention is able to obtain bread, confectionery, crisps, chips or pasta with strongly reduced caloric value, which will deliver additional products recommended in the nutrition portion of dietary fiber.

Example 1

Oat hulls are derived from oat by dehulling with conventional methods, then the resulting material was ground in a knife mill and then sieved through a mesh diameter of 0,200 mm.

Example 2

Buckwheat hulls are derived from buckwheat seeds by dehulling with conventional methods, and then cleaned by rinsing with water at 15 ° C, by direct action on buckwheat husk with water for 30 min, then husk soaked in 0.05% solution of hydrochloric acid and neutralized sodium hydroxide solution to pH 7.0. Then the husk was dried at 40-80 ° C for 1 h to a moisture content of 8%. Thus obtained material was ground in a hammer mill and then sieved through a sieve with 0.100 mm mesh.

Example 3

The scales are derived from wheat by dehulling with conventional methods, and the resulting material was ground in a hammer mill and then sieved through a sieve with 0.300 mm mesh.

Claims

1. Flour with reduced calorific value wherein it constitutes a form of granulate in size from 1.00 to 0.01 mm, preferably from 0.3 to 0.1 mm from the milling of grain hulls of gluten cereals, gluten-free cereals or pseudocereals.