NUTRITION BARS

HIGH-QUALITY WHOLE GRAIN PROTEIN CONCENTRATE-

produced from non-GMO wheat grains grown in the Baltics, EU origin, rich in fiber, after fermentation.

Protein
composition
in the product 60-65%

Water activity
(a_W) 0.434

pH 4.01

Dietary fiber composition in the product - 17%

Contains all essential amino acids

Total amount of amino acids - **60%**







The recent current trend and high demand are bars with a high protein content, which serve both specific nutritional purposes of the consumer and replace unhealthy snacks, because these bars contain specially balanced nutrients, so that the product is suitable for those who take care

of their figure without excess calorie, fat and sugar intake. Proteins are important for the human body as a natural building material that maintains and nourishes the human body. Nutrition bars can be consumed at any time in the morning, during the day or at night.

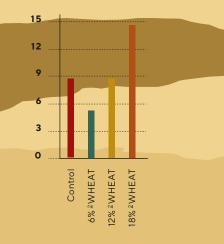
When making bars, you can perfectly use ²WHEAT as one of the raw materials to get a nutrition bar with an increased protein content. ²WHEAT is suitable for making cereal bars, and it goes well with seeds, nuts, dried fruits and berries in bars.

NUTRITION BARS WITH TWO TYPES OF COMPOSITION:

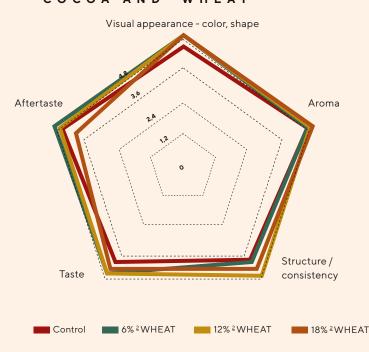
One type of bar that was not glazed and had the popular chocolate flavor and used raw materials such as oatmeal, almonds, hemp seeds, linseeds, dates, raisins and cocoa powder, no additional sweeteners and binders were used. Proportion of the cereals (oatmeal) and nuts (almonds) was 20% of the total ingredients in these bars, and this was partially replaced by ²WHEAT.

The other type of nutrition bar was made with a higher cereal content and additionally sweetened with honey and glazed with white chocolate, it consisted of ingredients such as oatmeal, almonds, hemp seeds, sesame seeds, dried cranberries, honey, white chocolate. The proportion of cereals (oatmeal) and nuts (almonds) in these bars was 32% of the total amount of raw materials, and it was partially replaced by ²WHEAT.

HARDNESS MEASUREMENTS OF NUTRITION BARS WITH ²WHEAT



SENSORY EVALUATION OF NUTRITION BARS WITH COCOA AND ²WHEAT



According to the EC regulation, in order to be able to use the nutrition claim "SOURCE OF PROTEIN" for nutrition bars, the amount of $^2\mathrm{WHEAT}$ addition is 6% (for bars with cocoa) - 11% (for light bars) of the total amount of raw materials, but in order to use the indication "HIGH PROTEIN", the addition of $^2\mathrm{WHEAT}$ is 12% (for bars with cocoa) - 22% (for light bars) of the total amount of raw materials.

Physico-chemical parameters: In nutrition bars with ² WHEAT, the moisture content ranges from 14.8 to 16.6%, which is considered typical for this type of product, however, for a longer storage time, additional heat treatment and suitable packaging material would be desirable. The pH is around 5, or acidic, and this guarantees its safety - little possibility for the development of microorganisms. The addition of ²WHEAT lowers the pH value, additionally ensuring the development of microorganisms.

Since water activity (aw) characterizes the water available for microbial growth, in bars this value is relatively high and is around 0.7, but the addition of ²WHEAT changes this situation slightly by reducing this value, thus having a beneficial effect on the fact that the product will not develop microorganisms as quickly.

NUTRITION BARS WITH COCOA



6%²WHEAT



12% ²WHEAT



18%²WHEAT

NUTRITION BARS WITH HONEY



Control



11% ²WHEAT



22% ²WHEAT

Structure of nutrition bars: Evaluating the structure of the bars, the addition of ²WHEAT to the product changes it's consistency, because when replacing, for example, oatmeal and nuts, the fraction of which is relatively rougher than ²WHEAT, it becomes more homogeneous, denser, more flexible. Measuring the hardness of the product using a special tip that simulates a bite it can be seen that the addition of ²WHEAT at 12% is the most similar to the control, but in a larger quantity ²WHEAT increases the hardness of the product significantly.

EFFECT OF THE ADDITION OF ² WHEAT RAW MATERIAL ON THE FINISHED PRODUCT:

The addition of ²WHEAT to the product has absolutely no effect on the aroma, but there is a significant effect on the structure of the bars, as ²WHEAT makes the consistency of the product more homogeneous and denser, which is a positive aspect for this type of product. Overall, those consumed liked the bars with ²WHEAT better than the control due to a more flavorful taste.

PRODUCER: "I.S.D." SIA

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