Advantages of soybean unleavened flat cake compared to soybean meal in animal feed

Advantages of feeding animals by soybean flat cake made in conventional hydrothermal treatment compared to soybean meal produced by chemical extraction with hexane

Technology of soybean processing by hydrothermal treatment, which is old around 70 years and long had been thrown off, has come into focus of the World interest. Over last several years, worldwide, many researches have been carried out what should contribute to improvement in the whole health of animals. Numerous advantages of nutrition of animals by toasted soybean grits, which has been produced by conventional hydrothermal treatment, have been proven by researchers.



Soybean flat cake is product of hydrothermal processing of soybean during

which is extracted less oil than in chemical extraction with hexan, so **soybean flat cake** has eight times more oil than soybean meal. In phase of pressing and grinding big molecules of polysaccharides are broken, what makes soybean cake easier to digest for digestive tract of animals. Hydrothermal treatment of soybean makes product of high nutritive value and biological value without use of chemical components what influence better protein usage.

Soybean cake in Biopro 60 in numbers

- 38% proteins
- 8% soybean oil of high quality
- only 6 % humidity

Advantages

- Extremely high digestibility of proteins and amino acids (more than 90%).
- High level of metabolic energy (4,180 Kcal/ kilo relative to NRC value of 3,000 Kcal)
- Stability and freshness, due to high level of natural tocoferol (110 to 120 PPM of this part of family of vitamins E)
- Using natural tocoferol, the effects achieved by the use of vitamin E supplements in nutrition are equaled and frequently surpassed (daily quantity of 250 mg of tocoferol is recommended).
- Simple (and biologically superior proven) manner of adding of fat into nutrient (customary subsequent adding of fats in nutrition meals for animals, very frequently can cause problems with a micro flora).
- Very low possibility of deactivation of anti-nutritive factors is customary with flour produced with the help of extraction.
- Very high level of Lecithin, photo lipids, which is very essential for metabolism of fat.
- Very high content of holin (phosphorus lipid as well, which achieves very significant positive effects on health of liver and brain of animals) is a unique feature.
- Extremely pleasant taste to which animals always react very positively and it never happens that they refuse

meals, due to content of soybean cake have strong and crisp taste.

- Exceptional pouring in baskets and nutrition places. Thanking to low content of water and granulate nature of cake.
- Dust significantly decreased while adding to mixtures for nutrition of livestock, again, thanks to sole granulate structure and content of oil.
- Extraordinary stability and longevity, and resistance to negative activity of moisture, thanking to the fact that natural content of moisture in soybean decreased to half.
- "Bonus amounting to 7% in live stock nutrition" again, as consequence of decrease of natural content of moisture in soybeans by 50%. Soybean cake produced by hydro thermal treatment contains at average 94% of hard substance, while flower produced by extraction has 88% of hard substance
- Structure, appearance and texture of soybean cake give a sole result: nutrition chewed up giving significant improvement in matter of digestibility.
- Sterilization is incomparably better compared to any other manner of manufacturing of soy cake, thanking to high temperature at which process is run with full prevention of activity of bacteria, viruses, fustiness and fungi.

It was proven that the use of soy cake manufactured by hydro thermal treatment leads to improved nutrition conversion , daily growth increments, production of eggs, as well as in production of milk. In practice, existence of long term effect, such as reduced mortality rate .



While conducting extraction of soybean solvents are used, whose

toxic effect on health of chicken, young hens and piglets are well known. On the other hand there are grits produced by hydrothermal treatment of soybean, which to young animals make possible undisturbed growth, without negative consequences on their health.

Besides, high quality proteins, which it contains, the whole soybean represents rich source of energy, as well, thanking to its oil content. That ratio remains unharmed in soy grits too; about their nutritious value we shall say a few words later, mentioning some of researches in this field.

Poultry nutrition

Performing experiments on 2, 5 weeks old chicken Wiseman (1984) noticed significant differences based on various ways in what soybean is processed and influence of those differences on metabolic energy (ME) and absorption of nitrogen (NR). Zhang (1993) published the fact that temperature at which processing is performed, influences on flower. Increase in temperature to 138C or 154C significantly increases TME comparing with extruded soybean at 104C or 121C.

Pigs nutrition

It was proven that nutritive value of proteins depends on structure of amino acids and it's possible utilization by animals. Marty and Chavez (1998) showed that soybeans processed by hydrothermal treatment have superior raw proteins, which are exceptionally useful for pigs. These results were confirmed by researches which were carried out by Woodworth at Texas A&M University where he came to the conclusion that that soy bean processed in this way compared to soy bean flower produced by extraction has a much better digestibility of raw proteins and lysine and metabolic energy, likewise, helps in fight of illnesses caused by bacteria and decreases possibility of appearance of mastitis metritis of sows, which have just farrowed.

Leszcynsky and his collaborators from Illinois University published results of their researches showing that even very short period of nutrition by soybean grits before slaughter, favorably deviates ratio relations multi non saturated and saturated beacon and fat without reduction of quality of products.

Ruminants

Socha and Satter (1991) performed experiments to determine influence of various kinds of feed on cow's lactation. The most milk, milk proteins and milk with 3, 5% of fat were given by cows that were fed by soybean grits toasted. Beside, it is possible to talk about numerous savings, using soybean grits. Among others, there is no need for subsequent adding of vitamins A, E, D into mixtures for nutrition of cows, having regard to the fact that soybean grits contain large quantities of these vitamins. Dr. Rick Vierling, based on his researches, proved that total anti oxidative effect of oil produced by pressing 5-9 times larger effect than the one achieved with oil produced by extraction by solvents. It is known that natural vitamin E has up to 8 times higher power than the synthetic (artificial) one and Ph D Vierling was stressing that strength of vitamin, remaining after pressing can be even higher.