

What is protected soy?

SoyPreme® is a full-value crimped soybean, combined with sugar obtained from wood processing. SoyPreme® is an optimal source of proteins and energy, which efficiently facilitates the improvement of farm animal performance. Besides the genetic background and the management conditions, nutrition also has a decisive influence on animal performance. Profitable milk production is based on nutrition corresponding to the expected performance, which requires increasingly valuable feed additives of higher quality.

Borregaard Ligno plays a leading role in the development of bypass protein production technologies. The company has been present on the European and North American market for more than 30 years. The use of the procedure resulting from the two companies' co-operation has created a product that is unique on the Hungarian market.

How can SoyPreme® be used in animal nutrition?

When formulating rations for high-producing herds, meeting the metabolizable protein demand in appropriate form and quality always represents a challenge. The task to be solved is not only to incorporate the necessary absolute protein quantity into the ration, but also to ensure an adequate ruminal degradation ratio of the protein fed and to optimize its rate of degradation depending on the other feed components, as well as to adjust the amino acid composition of the metabolizable protein to the demand created by production. If the ratio of easily degradable crude protein is high and the appropriate carbohydrate fractions are lacking, the excessive release of ammonia will raise the blood urea level, which has been demonstrated to exert a negative influence on the reproductive parameters and health status, and eventually the lifetime performance, of the animal.

Guaranteed analysis	
Humidity	< 11 %
Crude protein	34 %
Crude fiber	5 %
Crude fat	19 %
UDP*	78,91 %
UDP	268,3 g
NDF	272,1 g
ADF	65,1 g
SFA	16,4 g/100 g fatty acid
MUFA	24 g/100 g fatty acid
PUFA	59,4 g/100 g fatty acid
ME	16,2 MJ/kg
NE _L	10,7 MJ/kg

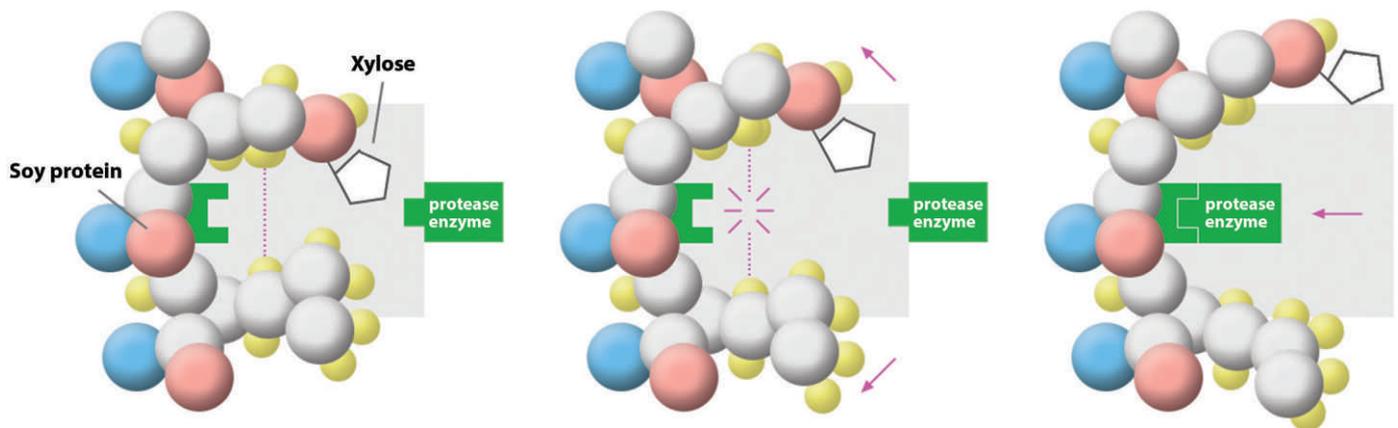


* Ruminal passage rate = 8%/hour

How is SoyPreme® produced?

SoyPreme® is a rumen-protected full-fat soy product. Physical comminution of the soybean yields a homogenous starting material of optimum physical structure. The manufacturing process then continues with heat treatment and an additional chemical treatment. The manufacturing process increases the quantity of bypass protein by causing the soy protein to form a chemical bond with the added sugar (xylose) under the effect of heat and pressure. This reaction is known as the Maillard reaction. During this reaction, the reducing sugar binds to the protein; as a consequence, the microbial protease enzymes cannot bind to the protein chain, thus preventing its degradation in the rumen.

How does SoyPreme® work?



As a result of this procedure, the bypass proportion of protein exceeds 70% of the total amount of crude protein fed. The fatty acids located inside the soybeans homogeneously comminuted during the manufacturing process are not exposed to the rumen fluid, which allows the unsaturated fatty acids contained in the soy oil to pass through the rumen without becoming saturated, which would otherwise occur. **The crude fat content of soybean can be protected from the ruminal processes that would result in the formation of partially or fully saturated fatty acids. Thus, by the feeding of unsaturated fatty acids we can prevent the negative effects, the most important of which is the depression of milk fat synthesis.**

What are the advantages of feeding this product?

- ✓ It increases the level of polyunsaturated fatty acids, thus enabling the uptake of unsaturated fatty acids in a quantity proportionally higher than the recommended daily intake.
- ✓ The increased concentrations of omega-3 and omega-6 fatty acids allow the production of healthier dairy products. Butter taken directly out of the refrigerator spreads more easily.
- ✓ As a result of feeding SoyPreme®, the level of polyunsaturated fatty acids increases in other animal products as well.
- ✓ SoyPreme® increases the energy density of the ration by improving the digestibility of crude fat.

What are the strengths of the product?

- ✓ It provides a cost-efficient means for optimizing protein and energy intake.
- ✓ **It is an ideal feed supplement for both high-producing dairy cows and beef cattle.**
- ✓ It is manufactured by a safe production technology.
- ✓ SoyPreme® is rich in essential amino acids.
- ✓ **It provides excellent lysine supplementation.**
- ✓ It is a GMO-free source of protein.
- ✓ The SoyPreme® supplement can be an efficient tool for decreasing the nitrogen emission of dairy farms (protected protein instead of crude protein), **thus protecting the environment and increasing productivity.**

What makes SoyPreme® unique as a protected protein and fat source?

SoyPreme® is unique on the Hungarian market, as so far products of similar nature have been available for animals only from import or manufacture using starting materials purchased abroad. The use of soybean cultivated in Hungary as a starting material makes it possible to formulate a GMO-free ration, which adds further value to animal products made in Hungary.

Owing to the special manufacturing methodology, the bypass value of the fat and protein fractions of full-fat soy can be increased by more than 50% while its digestibility does not change.

When incorporated into the ration, SoyPreme® provides a protected protein and protected fat source as a single component. It contains limiting amino acids and essential fatty acids meeting the special requirements of high-producing dairy cows. This makes the use of the product highly cost effective.

Up to now, supplementing ruminant diets with polyunsaturated fatty acids (PUFA) has represented a serious challenge. These fatty acids are widely known to possess numerous beneficial effects from the point of view of human physiology and production efficiency. However, great attention should be paid to the behaviour of products containing such fatty acids in the rumen; namely, if they are not sufficiently protected, they can pose a hazard for multiple reasons:

- ✓ They are toxic to the rumen microorganisms already in very low concentrations, reducing their growth.
- ✓ They lower the digestibility of NDF and thereby decrease the dry matter intake of animals and acetate production in the rumen.
- ✓ Their double bonds become saturated, resulting in the formation of trans- and saturated fatty acids of unfavourable physiological effect, which pass through the rumen and become absorbed from the small intestine.

Thanks to the appropriate particle size of SoyPreme® as well as to the protein matrix formed during the special 'temperature-pressure-added pentose' procedure, it has become possible to provide ruminants with the entire fatty acid profile of full-fat soy in a rumen-protected form.

What are the beneficial effects of soybean oil on the reproductive parameters of dairy cows?

A substantial part of soybean oil is constituted by linoleic acid (C18:2n6), accounting for 56 g/100 g of fatty acids. The beneficial effects of soybean oil on the reproductive parameters of dairy cows have been demonstrated on numerous occasions, under both in vitro and in vivo conditions:

- ✓ It increases the energy density of the total mixed ration, thus improving the energy balance of the animals.
- ✓ It raises the levels of some metabolic hormones of intrafollicular activity (IGF-1), thus stimulating follicular growth and development.
- ✓ It inhibits the synthesis of prostaglandins in the late-luteal phase, thus could potentially improve conception rates by reducing the incidence of early embryo loss.
- ✓ It enhances the plasma cholesterol concentration, thus stimulate the progesterone production of corpus luteum (CL).

References:

- *Abel-Caines S.F., 1998*
- *Cheng Z., 2001*
- *Robinson R.S., 2002*
- *Ghasemzadeh-Nava H., 2011*

Feature: Brown, coarsely ground, sweet smelling

Packing: In bulk.

Storage and shelf life: To be kept at a dry, cold place out of sunlight.

It preserves its quality for 4 months after production.