



SOJAPROTEIN



TradKon SPC

SOY PROTEIN CONCENTRATES

Sojaprotein

A Company that Follows Innovations

Sojaprotein boasts modern technological equipment produced by the best known European and U.S. manufacturers. Special attention has been given to the maintenance of the technical and technological readiness of the plant through the permanent following and application of knowledge regarding innovations in this field of the food-processing industry. The installed equipment enables Sojaprotein to keep pace with the leading soybean processors throughout the world. The company is dedicated to the maximum utilisation of its production capacity by increasing productivity, eliminating bottlenecks in the production process via the installation of new devices and the modern packing of final products. In this way, thanks to the installation of new equipment, the annual capacity of the plant has increased from the designed 160,000 tons to 250,000 tons of processed soybeans.

Investment in equipment for producing human food has been especially high in the past few years. New mills produced by renowned manufacturers have been installed, doubling the production of full-fat and defatted flours. A new line for the production of textured products with a double-worm extruder with a capacity of 3 tons per hour has been installed in accordance with all the standards applicable in the food-processing industry, which has considerably increased the capacity, quality and range of textured products.



New lines for packing flour and textured products in bags have improved the packing and the accuracy of product measurement. An automated line for palletising bags also improves the packing of products.

A plant for the production of traditional soy protein concentrates with an annual capacity of 70,000 t was completed at Sojaprotein in 2012. A new warehouse for 14,000 palletes was also built, thus improving the conditions for the receipt, storage and delivery of finished products. Sojaprotein has ambitious plans to expand and modernise its plants in the years to come. Since 2002, Sojaprotein has operated as part of the domestic company Victoria Group, becoming part of a rounded production system that unites 10 companies across Serbia. One of the largest agricultural complexes in Serbia, Victoria Group's successful business operations have ensured it a leading role in agribusiness.

The annual processing capacity of Sojaprotein is 250,000 tons of soybean.

NON GMO

Domestic Soybean as a Raw Material for Processing

Domestic soybean production is the main raw material basis for the processing that takes place in Sojaprotein. The main region for soybean production is the northern part of Serbia, in the Pannonian Plain.

Raw material for processing is purchased once a year, during the harvest, or in the period from September to November. Sojaprotein possesses a storage area for 100,000 tons of soybean in a silo and a bunker warehouse, but the annual yield is also stored temporarily at several agricultural product buying stations in the soybean producing regions.

In line with the permanent quality system development policy and the adoption of international standards, Sojaprotein has developed an Identity Preservation Programme certified by Switzerland's SGS, the world largest inspection, testing, certification and verification company. This programme defines the process for preserving genetic purity from seed production to the delivery of the final product, while strictly observing the control procedure for all segments in the production chain, with clearly defined traceability and system documentation

ISO 9001	IP NON GMO
ISO 14001	HACCP
ISO 22000	KOSHER
OHSAS 18001	GMP+ B2



The traceability of soybean identity and soybean products entails the following phases:

- using soybean varieties that have been developed using classic selection methods in domestic institutes for field and vegetable crops
- special attention is given to the selection of subcontracted farmers for soybean production
- control of the genetic modification of soybean in the fields during the vegetation period
- control during harvest and storage (of the agricultural machinery, transport and storage)
- control of all taken quantities of soybean
- control of intermediate and final products

The application of this programme guarantees that Sojaprotein products produced from Identity Preserved Non-GMO soybean have a genetically modified content of less than 0.9 percent. Values above 0.9 percent are considered random. Genetic modification control is performed in accredited laboratories.

145,000 - 155,000 hectares are sown with soybean in Serbia on an annual basis, with an average yield of 380,000 tons.



SPC

New Plant for Production of Soy Protein Concentrates

With the construction of new plants, Sojaprotein is expanding its assortment of higher processing phase soybean products. This process is taking place in two stages.

Stage I - the construction of a factory for manufacturing traditional soy protein concentrates with an annual production capacity of 70,000 tons. Approximately 60% to 70% of the produced soy protein concentrates are used in human nutrition, and the remaining part as a milk substitute for feeding calves and piglets, the production of fish feed and food for household pets.



By constructing a plant for processing soy protein concentrates, Sojaprotein has become the sole producer in Europe that bases its production on domestically-produced soybean. Processing soya from types developed by natural selection enables Sojaprotein to manufacture non-genetically modified (NON GMO) products.

This factory was completed and put into operation in September 2012.

Stage II - the construction of a plant for manufacturing functional soy protein concentrates with an annual production capacity of 15,000 tons. Functional concentrates are one of the most important components in the food industry, especially in the meat-processing industry. With their high functionality, they improve the product stability.



TradKon SPC

Traditional Soy Protein Concentrates for the Food Processing Industry

Traditional soy protein concentrates are a source of proteins, i.e. of essential amino acids and protective substances – minerals and vitamins that are important for overall metabolism. The production process of traditional soy protein concentrates involves deactivating anti-nutritional factors and thus increasing the utilisation of proteins, as well as the removal of a part of the soluble carbohydrates, which contributes to making these textured products more neutral in taste and lighter in colour.

There are several reasons for the use of soy products in the food-processing industry:

1. Making use of the functional effects of soy protein (water binding, expansion, viscosity, gelling, cohesion and adhesion, emulgation) enhances the sensory properties (appearance, consistency, texture, taste, juiciness) of food.
2. Adding a soy product increases the overall nutritional value of the food and it can be ranked in the group of products with special properties (healthy, dietary, dietary-therapeutic). Soy products are classified as a high-value food since the soy products contain all the essential amino acids needed for the normal functioning of the body.
3. Using soy products in all branches of the food-processing industry, and thus in the meat processing industry, helps achieve significant economic effects either through the reduction of production costs or through the standardisation of quality, which remains at a constant level.



TradKon SPC HC

HC-200 and HC-30 Products

BASIC PROPERTIES

Traditional TRADKON SPC HC soy protein concentrates are components for the food processing industry, i.e. for human consumption (HC).

Chemical Characteristics

Composition %	Guaranteed Content %	
Protein* (N x 6,25)	min. 68,0	(1)
Water	max. 8,0	(1)
Fat*	max. 1,2	(1)
Carbohydrates (from difference)*	20,5	(2)

*Moisture free basis • The result obtained: (1) analysis, (2) calculation

Other Characteristics

Colour	Light
Flavour	Neutral
Odour	Neutral

Variations are possible in the values provided depending on the quality of the raw material (soybean). Traditional soy protein concentrates are manufactured from controlled, NON GMO soybean (GMO < 0.9%).

PACKING AND STORAGE

Packing: TRADKON SPC HC is packed and delivered in paper bags, net weight 25 kg. Each individual package is labelled with product identification data on quality and quantity on a multi-language label. The bags are placed on a Euro-pallet, covered with stretch wrap and also labelled.

Storage: Keep in a cool dry place, protected from outside influences.

Shelf life: 12 months.



Product title	Product code	Granulation	Individual packing	Number of bags on the pallet	Net weight (pallet)
TRADKON SPC HC-200	BFC500000201	min 90% < 0,075 mm (#200 mesh US St. Sieve)	25 kg	30	750 kg
TRADKON SPC HC-30	BFC500000401	coarse	25 kg	30	750 kg

PRODUCT USE

Meat Industry

TRADKON SPC HC products are used in the meat industry primarily due to their high protein levels with corresponding amino acid content, and based on this they are used as nutritive extenders or as a substitute for a part of meat proteins. They are predominantly used as a substitute for red meat (pork or beef), and for chicken and fish meat.

Confectionery Industry

TRADKON SPC HC products are used as nutritional supplements in the confectionery industry in amounts of up to 5 percent, especially for the purpose of increasing the protein content, which is of special importance because these products are primarily intended for persons of a young age. This improves the fineness and the structure of confectionery products and prolongs their freshness.

Pasta Industry

They are used in the preparation of pasta types of usual contents and the preparation of special pasta types for increasing the nutritional and biological value.

Catering Industry

They are used in the preparation of meals in canteen-like setting in order to improve the organoleptic properties, nutritional values and the durability of the products.

Dietetic Products

They are used in the production of various dietetic products providing additional nutrition for professional athletes and amateurs.

TradKon SPC

Use in Meat Processing Industry

Traditional soy protein concentrates are used in industrial meat processing because of the following positive results: functional effects, increased nutritional values, standardisation of quality and low-cost production. The most appreciated are the functional effects and low-cost production. Soy proteins are used as both functional emulgation and stabilisation supplements and as good nutritional extenders, i.e. meat substitutes. They have a high nutritional and biological value and a high absorption capacity for water, fat and meat juices; they enhance the stability of systems, prevent fat separation and have antioxidant effects. Although a meat product that contains soy proteins is usually cheaper than one without soy products, the buyer gets a product of equal quality. The use of Sojaprotein products in industrial meat processing does not require the replacement of existing technological processes or existing recipes if the products of other manufacturers are used.

Owing to the higher protein content in SPC compared to soy flour, soy protein concentrates can be used where there is a need for more proteins or to achieve better functionality. Besides achieving a greater protein content compared to soy flour, the use of SPC greatly decreases sugar content, which causes flatulence (bloating) and achieves a milder taste. In addition to this, due to the lower sugar level, Maillard reactions are reduced and the colour of SPC is lighter. It enables better application of SPC in fish and poultry systems.

HC Products Properties

Emulgation capacity is in a ratio of up to a max of 1:5:5, and the gelling capacity up to a max of 1:3.5.

For adding these products to various meat products, the most commonly recommended levels are from 2% to 6% in dry form; if pre-hydration before adding into a



product is used, the SPC: water ratio of 1: 3 is used.

Tradkon SPC HC 200 is also used for the preparation of pork skin (rinds) emulsion, where approximately 4% is usually used, calculated per total quantity of the emulsion prepared. Emulsion made in this way is thermally stable and can be used for the production of some types of sausages and sterilised canned products.

Textured Soy Protein Concentrate

Enhanced textured soy protein concentrate properties related to textured products produced from soy flour are:

- Lighter colour
- Mild taste
- Reduced level of sugar which causes flatulence
- Increased rehydration capacity
- Better texture

Each of these properties contributes to the variety and higher percentage of their usage compared to textured soy-flour based products.

The most favoured usage of textured soy concentrates is in products made of roughly chopped meat (meat patties – hamburgers made of various animal meats, as an ingredient in pizza topping, meatballs and other products). In these systems, their usage is fully justifiable as a replacement for more expensive meat. Moreover, owing to the mild taste of TRADKON SPC-TEX MINCED, the taste of the meat is more distinctive and its usage also increases meat product returns. In most applications they are used in quantities ranging from 2 % to 6 % (in dry form), calculated on the final meat product.



TradKon SPC-TEX



Textured Soy Protein Concentrate – Minced

BASIC PROPERTIES

TRADKON SPC-TEX are textured products produced by texturing traditional soy protein concentrate and available as minced and soy chunks. They are a source of protein – i.e. essential amino acids and protective substances – minerals and vitamins, important for overall metabolism. The production process of traditional soy protein concentrates involves deactivating anti-nutritional factors and thus increasing the utilisation of the proteins, as well as the removal of part of the soluble carbohydrates, which contributes to making these textured products more neutral in taste and lighter in colour compared to soy-flour based textured products. TRADKON SPC-TEX MINCED products have high nutritional and biological values. They are characterised by structural integrity, which is maintained even during rehydration, cooking, sterilising and other similar procedures. They have a high capacity for absorbing water, fats and meat juices, stabilise the system and prevent fat separation, and act as an antioxidant.

Hemijske karakteristike

Composition %	Guaranteed values	
Protein* (N x 6,25)	min. 68,0	(1)
Water	max. 10,0	(1)
Fat*	max. 1,5	(1)
Carbohydrates (from difference)*	20,5	(2)

*Moisture free basis • Result obtained: (1) analysis, (2) calculation

Other characteristics

Colour	Neutral
Flavour	Pleasant
Odour	Neutral

Variations are possible in the values provided depending on the quality of the raw material (soybean). Traditional soy protein concentrates are manufactured from controlled, NON GMO soybean (GMO < 0.9%).

Product title	Product code	Granulation	Individual packing	Number of bags on the pallet	Net weight (pallet)
TRADKON SPC-TEX MINCED	BFL450000001	0,5 - 5 mm min. 85%	15 kg	21	315 kg

PACKING AND STORAGE

Packing: TRADKON SPC-TEX MINCED products are packed and delivered in paper bags (net weight 15kg). Each individual package is labelled with product identification data on quality and quantity. The bags are placed on a Euro-pallet, covered with stretch wrap and labelled.

Storage: Keep in a cool dry place, protected from outside influences.

Shelf life: 24 months.

PRODUCT USE

Meat Processing Industry

TRADKON SPC-TEX MINCED products are used in the meat-processing industry. They are mainly used as extenders (replacement for part of the meat in a recipe). These products demonstrate their optimum properties in their rehydrated form and rehydration in the ratio 1 : 4 is recommended. They can be used in various types of half-cooked and cooked sausages at a level of 8-12% in rehydrated form in the finished product. They are especially suitable for application in products made of chopped and shaped meat where their addition to the meat in rehydrated form at a level of up to 25 % is recommended. Contrary to soy-flour based textured products, textured soy protein concentrates have a lighter colour, their taste is more neutral and they have a somewhat stronger consistency in both their dry and rehydrated states.

Catering Industry

The application of soy products in the canteen-based nutrition has nutritive and economic advantages. The nutritional value and sensory properties of dishes prepared in this way are considerably improved, and the energy and cholesterol values are reduced. TRADKON SPC-TEX MINCED products are used for the preparation of all types of hot and cold dishes made of minced or chopped meat. The use of these products is especially recommended for the preparation of dishes intended for a low-fat diet.



TradKon SPC

Traditional Soy Protein Concentrates in Animal Nutrition

Today, animal nutrition cannot be imagined without the use of soy products, which results from the demand for new ingredients in the preparation of animal feed and the development and emergence of new soy products on the market. In animal nutrition, soy protein concentrates are becoming increasingly prevalent. Since soy contains several factors with anti-nutritional properties, processing requires adequate treatment in order to eliminate ingredients that can limit the application of soy products in the nutrition of certain kinds of animal, especially younger categories with undeveloped digestive tracts.

Soy protein concentrates are ranked among the top products in the soy processing system. They have considerably higher nutritive value compared to soybean meal and are characterised by a lower level of oligosaccharides (<3%) and antigenic factors (< 100 ppm of glycinin).

SPCs are a cost-effective alternative for high-quality proteins of animal origin such as skimmed milk powder or fish flour in the nutrition of calves, pigs, chickens and pets.

In the growing aquaculture sector, the need to substitute fish flour and other animal products is becoming increasingly evident. There are three reasons for this: the limited production of fish flour, customer concerns about food safety in the light of dioxin-like toxicity, and ethical barriers to the use of edible proteins in animal nutrition considering the rise in the world population. In aquaculture, SPCs have great potential to replace part of the protein-based fish flour in Salmonidae nutrition.



TradKon SPC Packing and Storage

Traditional TradKonSPC soy protein concentrates are packed and delivered in paper bags with LDPE insert. Each individual package is labelled with product identification data on quality and quantity on a multi-language label. The bags are placed on a pallet which is covered with a stretch wrap and labelled. It is also possible to deliver in "big bags" and in bulk.

Storage: Keep in a cool dry place, protected from outside influences.

Shelf life: 24 months.

PRODUCT NAME	PRODUCT USAGE				
	VEAL CALVES FEED	REARING CALVES FEED	PIGLET FEED	POULTRY FEED	AQUA FEED
TRADKON SPC-63	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TRADKON SPC-75	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TRADKON SPC-500P	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TRADKON SPC-500F	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

TradKon SPC-63



Product Use

TRADKON SPC-63 is primarily used for veal calves feed.

Chemical characteristics

Composition %	Guaranteed values	
Protein* (N x 6,25)	min. 68,0 %	(1)
Water	max. 8,0 %	(1)
Iron	max. 110,0 mg/kg	(3)
Fat*	max. 1,5 %	(1)
Fibre*	max. 5,0 %	(1)
Ash*	max. 7,0 %	(1)

*Moisture free basis • Results obtained: (1) analysis (3) periodical analysis

Other characteristics

Colour	Typically white
Flavour	Product inherent
Odour	Neutral
Appearance	Very fine powder

Variations are possible in the values provided depending on the quality of the raw material (soybean). Traditional soy protein concentrates are manufactured from controlled, NON GMO soybean (GMO < 0.9%).

Product title	Product code	Granulation	Individual packing	Number of bags on the pallet	Net weight (pallet)
TRADKON SPC-63	BFC100000001	min. 90% < 63 microns	25 kg	30	750 kg
TRADKON SPC-63	BFC100000002	min. 90% < 63 microns	big bag	1	900 kg
TRADKON SPC-63	BFC100000003	min. 90% < 63 microns	in bulk	-	-



TradKon SPC-75

Product Use

TRADKON SPC-75 is primarily used for rearing calves feed.

Chemical characteristics

Composition %	Guaranteed values	
Protein* (N x 6,25)	min. 68,0 %	(1)
Water	max. 8,0 %	(1)
Iron	max. 150,0 mg/kg	(3)
Fat*	max. 1,5 %	(1)
Fibre*	max. 5,0 %	(1)
Ash*	max. 7,0 %	(1)

*Moisture free basis • Results obtained: (1) analysis (3) periodical analysis

Other characteristics

Colour	Light brown
Flavour	Product inherent
Odour	Neutral
Appearance	Fine powder

Variations are possible in the values provided depending on the quality of the raw material (soybean). Traditional soy protein concentrates are manufactured from controlled, NON GMO soybean (GMO < 0.9%).

Product title	Product code	Granulation	Individual packing	Number of bags on the pallet	Net weight (pallet)
TRADKON SPC-75	BFC100000201	min. 90% < 75 microns	25 kg	30	750 kg
TRADKON SPC-75	BFC100000202	min. 90% < 75 microns	big bag	1	900 kg
TRADKON SPC-75	BFC100000203	min. 90% < 75 microns	in bulk	-	-



TradKon SPC-500P

Product Use

TRADKON SPC-500P is primarily used for piglet and poultry feed.

Chemical characteristics

Composition %	Guaranteed values	
Protein* (N x 6,25)	min. 68,0 %	(1)
Water	max. 8,0 %	(1)
Fat*	max. 1,5 %	(1)
Fibre*	max. 5,0 %	(1)
Ash*	max. 7,0 %	(1)

*Moisture free basis • Results obtained: (1) analysis

Other characteristics

Colour	Light brown
Flavour	Product inherent
Odour	Neutral
Appearance	Granular

Variations are possible in the values provided depending on the quality of the raw material (soybean). Traditional soy protein concentrates are manufactured from controlled, NON GMO soybean (GMO < 0.9%).

Product title	Product code	Granulation	Individual packing	Number of bags on the pallet	Net weight (pallet)
TRADKON SPC-500P	BFC100000401	coarse	25 kg	30	750 kg
TRADKON SPC-500P	BFC100000402	coarse	big bag	1	900 kg
TRADKON SPC-500P	BFC100000403	coarse	in bulk	-	-



TradKon SPC-500F

Product Use

TRADKON SPC-500F is primarily used for Salmonidae feed.

Chemical characteristics

Composition %	Guaranteed values	
Protein* (N x 6,25)	min. 65,0 %	(1)
Water	max. 8,0 %	(1)
Fat*	max. 1,5 %	(1)
Fibre*	max. 5,0 %	(1)
Ash*	max. 7,0 %	(1)

*Moisture free basis • Results obtained: (1) analysis

Other characteristics

Colour	Light brown
Flavour	Product inherent
Odour	Neutral
Appearance	Granular

Variations are possible in the values provided depending on the quality of the raw material (soybean). Traditional soy protein concentrates are manufactured from controlled, NON GMO soybean (GMO < 0.9%).

Product title	Product code	Granulation	Individual packing	Number of bags on the pallet	Net weight (pallet)
TRADKON SPC-500F	BFC100000601	coarse	25 kg	30	750 kg
TRADKON SPC-500F	BFC100000602	coarse	big bag	1	900 kg
TRADKON SPC-500F	BFC100000603	coarse	in bulk	-	-





SOJAPROTEIN

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