ANIMAL FEED & FERTILIZERS

AGRANA STARCH

CONTENTS

AGRANA AT A GLANCE

AGRANA STARCH specialises in processing and adding value to high quality agricultural commodities such as corn, potatoes and wheat to make a wide range of starch products, tailored to different industrial uses.

Manufacturing top-quality starch products with modern and environmentally friendly methods – this is the focus of the Starch segment.

The diverse properties of starch find use in the food industry as well as in technical areas such as construction chemistry, paper, cardboard manufacturing and the textiles industry. Considerable importance is attached to certified organic products and GMO-free products in AGRANA's portfolio of starch products.

FEED & FERTILIZER AT A GLANCE

AGRANA produces over half a million tons of animal feed every year, based on the co-products of sugar and starch production (in what constitutes a sustainable recycling management), and is therefore Austria's largest producer of feed material.

AGRANA supplies the domestic and European animal feed industry with top quality animal feed material, as co-products of the production of sugar and starch.

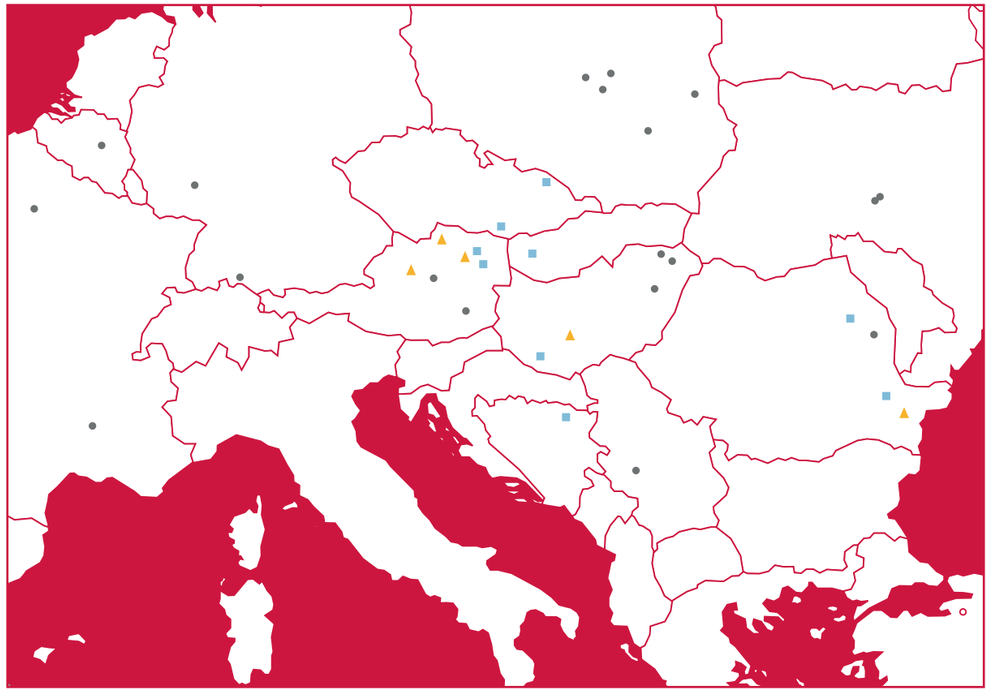
As animal feed producers, AGRANA's Austrian sugar and starch facilities, as well as our bioethanol production sites, are all subject to the relevant animal feed hygiene requirements. AGRANA is therefore responsible for ensuring animal feed safety.

AGRANA's animal feeds are suitable for GMO-free feeding and some are also available in organic quality.

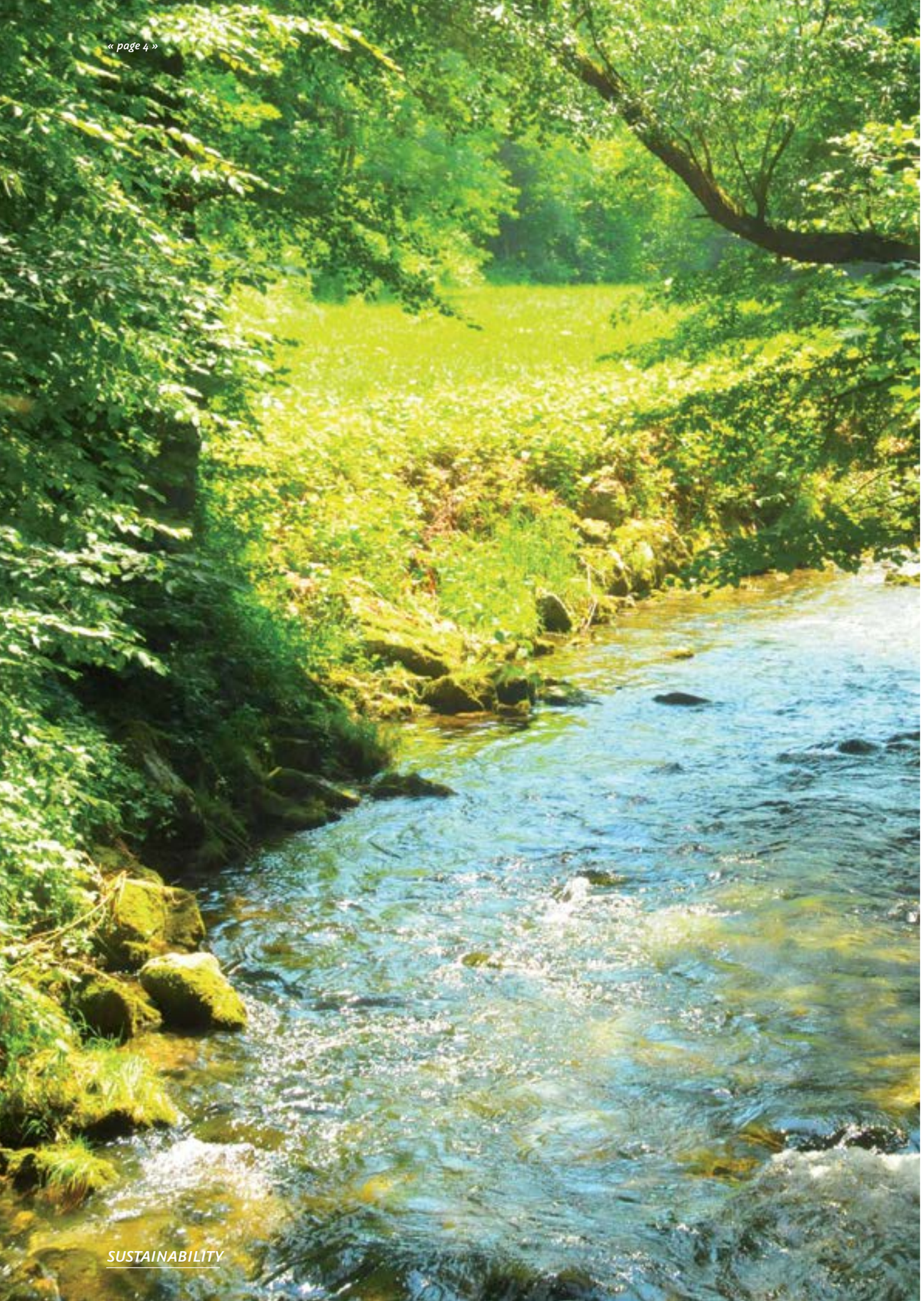
In addition, AGRANA offers a pure vegetable GMO-free fertilizer, BioAgenasol®, in two particle sizes.

ANIMAL FEED AND FERTILIZERS

PRODUCTION SITES



■ sugar plants ▲ starch plants ● fruit/juice plants



AGRANA'S UNDERSTANDING OF
SUSTAINABILITY

AGRANA believes sustainability means acting in an economically, environmentally and socially responsible manner; whilst respecting its internal and external stakeholders.

In view of its commercial activities and the associated proximity to raw agricultural products, acting sustainably represents an integral part of AGRANA's business model. Relevant aspects of sustainability along our product added value chain start from the sourcing of the agricultural raw materials and intermediary products used, comprising energy and environmental aspects in our own production processes, employee working conditions, aspects of product responsibility and ethical business activities, as well as social commitment.

AGRANA processes around nine to ten million tons of agricultural raw materials per year. Particular emphasis is placed on sourcing from contract growers as, through close cooperation, they offer AGRANA the unique opportunity to work on improving social and environmental standards. Commitment to sustainability in its supply chain is the reason why the Group joined the Sustainable Agriculture Initiative (SAI) in 2014. As an information platform, SAI aims to promote the development and implementation of sustainable agricultural practices.

ENERGY – AGRANA feels a particular obligation to conserving all natural resources; a focal area here is the unique and almost 100 % use of raw materials processed. We manufacture not only core products but also a wide range of animal feed material and fertilizer products. In autumn 2014, AGRANA committed itself to continuous improvement in energy use, through the launch of an energy management system and by certifying their Austrian production sites, in accordance with ISO 50001.

WATER – AGRANA aims to use water efficiently in the production system by using the water contained in the processed raw materials and thus limiting the amount of water withdrawn from other sources. Furthermore, AGRANA uses constant circulation with corresponding recycling. Waste water is discharged in accordance with all local legal requirements after being treated in AGRANA's own or external waste water treatment plants.

FOOD – Given that AGRANA primarily makes intermediary products for the food processing industry, food safety and production protection form a key element of our product responsibility. We ensure that we adhere to the internationally recognized standards for food safety and product protection, including FSSC 22000, ISO 22000 and IFS.

SOCIAL – In addition to its environmental approach, AGRANA also pays attention to social aspects in its production. Since 2009, AGRANA has been a member of the Supplier Ethical Exchange Database (SEDEX), an organisation of companies which are committed to strive for continuous improvement in their social-ethical behaviour and which promote this along their supply chains.

CERTIFICATIONS

AUSTRIAN QUALITY

Strict measures are in place to guarantee product quality, from the delivery of the commodity to the manufacture of the end product.

AGRANA is certified according to ISO 9001, EFISC (accredited by QS), PASTUS+ and GMP+, which means that the individual manufacturing processes are also improved on an ongoing basis.

AGRANA produces a range of feeds certified according to the Austrian 'GMO-free' Codex guideline, and thus approved for the production of GMO-free food.

ANIMAL FEED

ACTIPROT®

ActiProt® is a top quality protein feed ingredient, that is produced in the bioethanol facility at the AGRANA Pischelsdorf plant in Lower Austria.

ACTIPROT® is one of the best regional and GMO-free alternative protein source from Austrian production.

THE HIGH PROPORTION of Undegradable Dietary Protein (UDP) in the rumen (45 %), also known as by-pass protein, has a good intestinal digestibility and is one of the best sources of metabolisable protein in the lower tract.

THE CRUDE FAT CONTENT is higher than in soybean meal 44 and has a positive effect on the energy balance of dairy and beef cattle.

A key factor for many farmers is its palatability – cattle seem to like the taste of ActiProt®, having a positive effect on the dry matter intake. ActiProt® has good storability.

Since 2007, AGRANA has organised comprehensive feeding trials, in cooperation with universities, agricultural research centers and Austrian farm animal associations. These trials have investigated the potential use of ActiProt® as an alternative protein source for cattle, goats, pigs and poultry. The results show optimal recommendations for use, which can be found at: WWW.ACTIPROT.AT

NUTRITIONAL TABLES

*ANALYTICAL COMPONENTS/kg***	*FM**	*DM**
Dry matter	91 %	100 %
Crude protein	31,5 %	34,5 %
Metabolizable protein	25,2 %	27,7 %
Undegraded XP	14,2 %	15,6 %
UDP in %	45 %	49,5 %
Ruminal nitrogen balance	1 %	1,1 %
Crude fat	8,9 %	9,8 %
Crude fiber	7 %	7,7 %
Crude ash	4,5 %	4,5 %
AMINO ACIDS		
Lysine	0,57 %	0,63 %
Methionine	0,47 %	0,52 %
Threonine	0,9 %	0,99 %
Tryptophan	0,35 %	0,38 %
MACRO-MINERALS		
Calcium (Ca)	0,09 %	0,10 %
Potassium (K)	0,93 %	0,91 %
Phosphorus (P)	0,32 %	0,35 %
Magnesium (Mg)	1,03 %	1,13 %
Sodium (Na)	0,28 %	0,31 %
STRUCTURAL CARBOHYDRATES		
Hemicellulose, cellulose, lignin	55 %	55 %
Cellulose and lignin	14 %	15,4 %
Lignin	6,8 %	7,5 %
ENERGY VALUES		
Net-Energy-Lactation	8,01 MJ/kg	7,29 MJ/kg
Metabolizable energy Beef cattle	13,12 MJ/kg	11,94 MJ/kg
Metabolizable energy Pig	13,46 MJ/kg	12,25 MJ/kg
Metabolizable energy Poultry	8,90 MJ/kg	8,10 MJ/kg

* FM Fresh Matter, DM Dry Matter
** Please consider that the specified results are subject to raw material fluctuations and serve only as reference values; that may vary according to each harvest. Up to date analytical values can be supplied upon request.

FEED APPLICATION AND RECOMMENDATIONS

Due to its high protein content of over 30 % and beneficial energy content, ActiProt® can be used as a feed ingredient for all types of livestock.

RUMINANTS: it is a good source of energy and by-pass protein for ruminants.

SWINE: it can replace soybean and/or rapseed meal, with simultaneous balancing of the amino acids.

POULTRY: up to 10 % of Actiprot® can be used in complete feed.

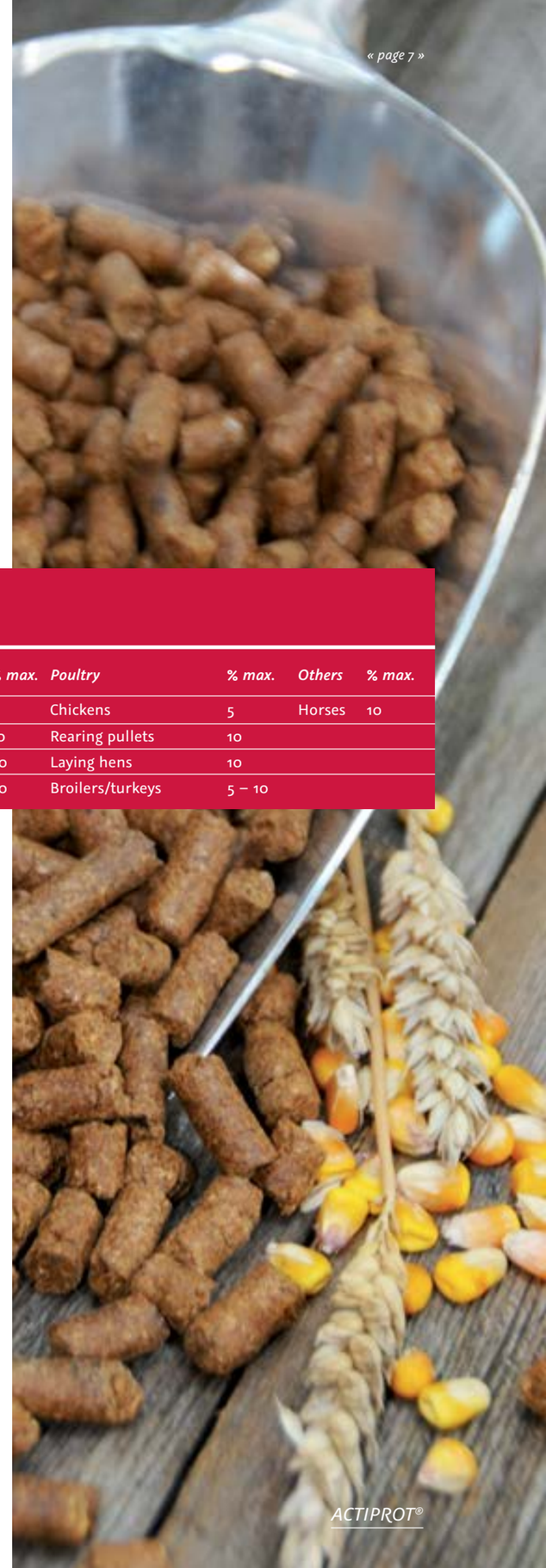
ACTIPROT®
Recommended highest inclusion rate (%) in complete feed

Cattle	*% max.*	*Swine*	*% max.*	*Poultry*	*% max.*	*Others*	*% max.*
Calves	5	Piglets	5	Chickens	5	Horses	10
Rearing cattle	30	Rearing pigs	10	Rearing pullets	10		
Beef cattle	30	Fattening pigs	20	Laying hens	10		
Dairy cattle	30	Breeding sows	20	Broilers/turkeys	5 – 10		

ACTIPROT®
Certified GMO-free, origin – Austria
Strict mycotoxin monitoring
Approved alternative to SBM
High UDP content
Positive influence on the energy balance
Increase of DM intake
Good palatability

PACKAGING
in bulk and big bag (1.000 kg)

Suitable for the production of GMO-free foodstuffs, certified by agroVet GmbH.



ANIMAL FEED

CORN GLUTEN FEED

Corn gluten feed produced at AGRANA's corn starch plants in Aschach a. n. Donau and Szabadegyháza, is a carefully dried feed ingredient. Due to its good protein and energy content, its high crude fiber content and relatively high digestibility (70-80 %) it is a major feed ingredient in ruminant diets. The high fiber content may also help to prevent rumen acidosis.

CORN GLUTEN feed supports more efficiently the production of energy corrected milk, thereby increasing the total milk yield through reducing the milk fat percentage. The digestible protein contained in 1 kg of corn gluten feed is sufficient to produce up to 4 kg of milk – according to practical experiences of Austrian farmers.

NUTRITIONAL TABLES

*ANALYTICAL COMPONENTS/kg***	*FM**	*DM**
Dry matter	min. 87 %	100 %
Crude protein	min. 17 %	19,5 %
Crude fat	2,5 %	2,9 %
Crude fiber	6,5 %	7,5 %
Crude ash	6 %	6,9 %
Nitrogen-free extract	60 %	69 %
AMINO ACIDS		
Lysine	0,5 %	0,6 %
Methionine	0,3 %	0,3 %
Methionine + Cystin	0,7 %	0,8 %
Threonine	0,7 %	0,8 %
Tryptophan	0,1 %	0,1 %
Valine	0,8 %	0,9 %
MACRO-MINERALS		
Calcium (Ca)	0,1 %	0,1 %
Potassium (K)	1,4 %	1,6 %
Phosphorus (P)	1 %	1,2 %
Magnesium (Mg)	0,6 %	0,7 %
Sodium (Na)	0,25 %	0,29 %
ENERGY VALUES		
Net-Energy-Lactation	7 MJ/kg	8 MJ/kg
Metabolizable energy Pig	11 MJ/kg	12,6 MJ/kg
Metabolizable energy Poultry	8,5 MJ/kg	9,8 MJ/kg

* FM Fresh Matter, DM Dry Matter
** Please consider that the specified results are subject to raw material fluctuations and serve only as reference values; that may vary according to each harvest. Up to date analytical values can be supplied upon request.

FEED APPLICATION AND RECOMMENDATIONS

As the starch components reduce the activity of the ruminal microflora, corn gluten feed is the ideal supplement to reduce the starch load in the rumen. Therefore, it is recommended to be used in the grass silage rations as substitute e.g. for maize grain.

As a good source of dietary protein and energy, it is the ideal feed ingredient particularly for beef and dairy cattle.

Corn gluten feed is an efficient ingredient for all livestock, in optimised amounts, according to the particular life stage.

CORN GLUTEN FEED
Recommended highest inclusion rate (%) in complete feed*

*according to Feed-Alp and Feedipedia

Cattle	*% max.*	*Swine*	*% max.*	*Poultry*	*% max.*	*Others*	*% max.*
Calves	15	Piglets	5	Chickens	5	Horses	5
Rearing cattle	30	Rearing pigs	5	Rearing pullets	5		
Beef cattle	35	Fattening pigs	10	Laying hens	15		
Dairy cattle	40	Breeding sows	15	Broilers/turkeys	10**		

** Note: Yellow pigmentation of the skin and fatty tissues may occur.

CORN GLUTEN FEED
Certified GMO-free
Strict mycotoxin monitoring
Good protein and energy content
Good digestibility
Optimum ruminal activity
Good palatability for ruminants
Good storability

PACKAGING
in bulk

Suitable for the production of GMO-free foodstuffs, certified by agroVet GmbH.

WHEAT GLUTEN

ANIMAL FEED

VITAL WHEAT GLUTEN

Wheat gluten is a high protein product, obtained from wheat flour in AGRANA's starch production site. It is equipped with cutting edge production technology, using the highest quality standards.

WHEAT GLUTEN is a water insoluble protein within wheat flour, which is produced via aqueous extraction and subsequent drying. The gluten consists of endosperm protein that is defined by its high digestibility.

NUTRITIONAL TABLES

*ANALYTICAL COMPONENTS/kg***	*FM**	*DM**
Dry matter	93,7 %	100 %
Crude protein	80,3 %	85,7 %
Crude fat	5,0 %	5,3 %
Crude fiber	0,7 %	0,8 %
Crude ash	0,8 %	0,9 %
AMINO ACIDS		
Lysine	1,3 %	1,4 %
Methionine	1,3 %	1,3 %
Methionine + Cystin	2,8 %	3 %
Threonine	2 %	2,1 %
Tryptophan	0,8 %	0,9 %
MACRO-MINERALS		
Calcium (Ca)	0,1 %	0,1 %
Potassium (K)	0,1 %	0,1 %
Phosphorus (P)	0,04 %	0,04 %
Magnesium (Mg)	0,09 %	0,1 %
Sodium (Na)	0,04 %	0,04 %
ENERGY VALUES		
Net-Energy-Lactation	*9* MJ/kg	*9* MJ/kg
Metabolizable energy Pig	16 MJ/kg	*17* MJ/kg
Metabolizable energy Poultry	14 MJ/kg	*15* MJ/kg

*FM Fresh Matter, DM Dry Matter
**Please consider that the specified results are subject to raw material fluctuations and serve only as reference values; that may vary according to each harvest. Up to date analytical values can be supplied upon request.

FEED APPLICATION AND RECOMMENDATIONS

Due to the high digestibility of the protein, wheat gluten is mainly used for special feed for young animals e.g. milk replacer; in the aquaculture (fish food) and in the pet food industries.

WHEAT GLUTEN
Recommended highest inclusion rate (%) in complete feed*
*according to Feed-Alp and Feedipedia

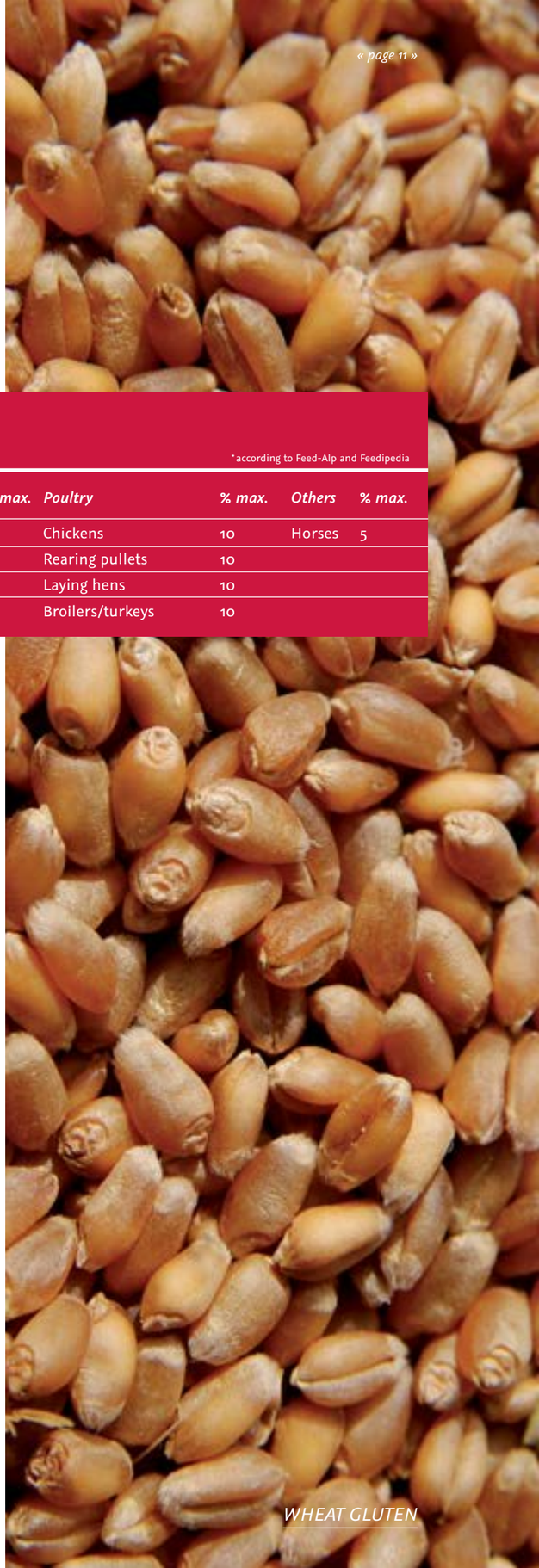
Cattle	*% max.*	*Swine*	*% max.*	*Poultry*	*% max.*	*Others*	*% max.*
Calves	10	Piglets	10	Chickens	10	Horses	5
Rearing cattle	15	Rearing pigs	10	Rearing pullets	10		
Beef cattle	15	Fattening pigs	10	Laying hens	10		
Dairy cattle	15	Breeding sows	10	Broilers/turkeys	10		

WHEAT GLUTEN
Certified GMO-free
Strict mycotoxin monitoring
High protein content
High digestibility

PACKAGING
in bulk, big bags (1.000 kg) and 25 kg bags

Suitable for the production of GMO-free foodstuffs, certified by agroVet GmbH.

ORGANIC Certified Organic



WHEAT GLUTEN

ANIMAL FEED

POTATO PROTEIN

Potato protein is a product of the potato starch production plant in Gmünd.

POTATO PROTEIN is a top quality high-protein source, having one of the best am no acid profile (with high levels of essential amino acids, in particular lysine, methionine and valine).

Thanks to the high digestibility of the protein (95 %), it is well suited to feed for young animals, especially for piglets.

Additionally, its biological value is comparable to that of high-protein sources from animal origin, like fish meal and milk powder.

NUTRITIONAL TABLES

ANALYTICAL COMPONENTS / kg **	*FM**	*DM**
Dry matter	88 %	100 %
Crude protein	66 %	75 %
Crude fat	1,5 %	1,7 %
Crude fiber	4 %	4,4 %
Crude ash	2,5 %	2,8 %
Ash soluble in hydrochloric acid max.	0,5 %	0,5 %
Nitrogen-free extract	14 %	15,6 %
AMINO ACIDS		
Lysine	5,5 %	6,1 %
Methionine	1,6 %	1,8 %
Methionine + Cystin	2,7 %	3 %
Threonine	4 %	4,4 %
Tryptophan	0,9 %	1 %
Valine	5 %	5,6 %
MACRO-MINERALS		
Calcium (Ca)	0,1 %	0,1 %
Potassium (K)	1,5 %	1,7 %
Phosphorus (P)	0,35 %	0,39 %
Magnesium (Mg)	0,1 %	0,1 %
Sodium (Na)	0,05 %	0,06 %
ENERGY VALUES		
Net-Energy-Lactation	7 MJ/kg	7,8 MJ/kg
Metabolizable energy Pig	16 MJ/kg	18 MJ/kg
Metabolizable energy Poultry	14 MJ/kg	16 MJ/kg

* FM Fresh Matter, DM Dry Matter
** Please consider that the specified results are subject to raw material fluctuations and serve only as reference values; that may vary according to each harvest. Up to date analytical values can be supplied upon request.

FEED APPLICATION AND RECOMMENDATIONS

Potato protein is suitable for all livestock and is one of the best alternatives to animal protein sources.

POTATO PROTEIN
Recommended highest inclusion rate (%) in complete feed*

*according to Feed-Alp and Feedipedia

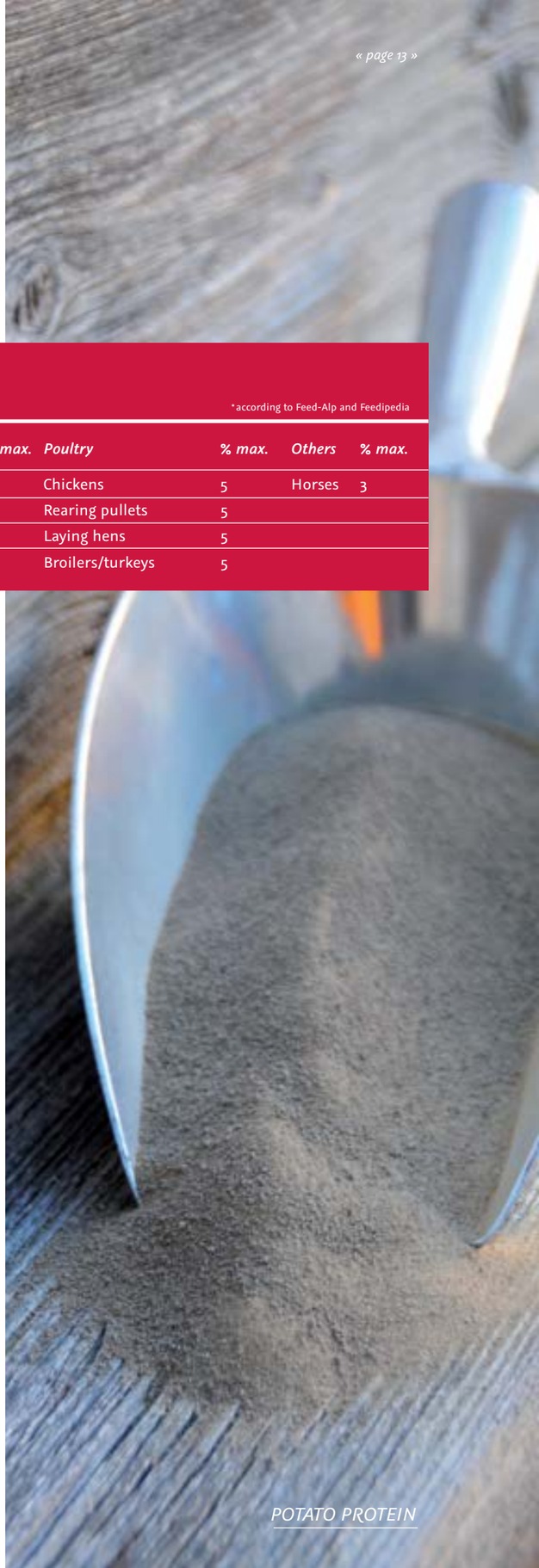
Cattle	*% max.*	*Swine*	*% max.*	*Poultry*	*% max.*	*Others*	*% max.*
Calves	15	Piglets	10	Chickens	5	Horses	3
Rearing cattle	10	Rearing pigs	10	Rearing pullets	5		
Beef cattle	15	Fattening pigs	10	Laying hens	5		
Dairy cattle	10	Breeding sows	10	Broilers/turkeys	5		

POTATO PROTEIN
Certified GMO-free
High quality source of protein
Very good amino acid profile
High digestibility

PACKAGING
in bulk, big bags (1.000 kg) and 25 kg bags

Suitable for the production of GMO-free foodstuffs, certified by agroVet GmbH.

ORGANIC Certified Organic



ANIMAL FEED

CORN GLUTEN MEAL

Corn gluten meal is a product manufactured in the maize starch plant in Aschach a.d. Donau. It is a protein-rich feed ingredient, defined through high digestibility and as being one of the best sources of metabolisable plant proteins.

CORN GLUTEN MEAL is also a good source of energy and methionine, and is therefore valuable for laying hens, especially in organic farming. It is rich in carotenoids, particularly xanthophylls (Lutein and Zeaxanthin), which are useful for pigmentation in poultry (skin pigmentation and egg yolk colour).

NUTRITIONAL TABLES

ANALYTICAL COMPONENTS/kg **	*FM**	*DM**
Dry matter	min. 87 %	100 %
Crude protein	min. 60 %	69 %
Crude fat	5,5 %	6,3 %
Crude fiber	1,0 %	1,2 %
Crude ash	1,5 %	1,7 %
Nitrogen-free extract	30,5 %	35,1 %
AMINO ACIDS		
Lysine	1,0 %	1,2 %
Methionine	1,3 %	1,5 %
Methionine + Cystin	2,4 %	2,8 %
Threonine	2,0 %	2,3 %
Tryptophan	0,3 %	0,3 %
Valine	2,4 %	2,8 %
CAROTINOIDS		
Xanthophylls (Lutein, Zeaxanthin)	250 mg/kg	287 mg/kg
MACRO-MINERALS		
Calcium (Ca)	0,07 %	0,08 %
Potassium (K)	0,1 %	0,1 %
Phosphorus (P)	0,5 %	0,6 %
Magnesium (Mg)	0,05 %	0,06 %
Sodium (Na)	0,06 %	0,07 %
ENERGY VALUES		
Net-Energy-Lactation	9 MJ/kg	10 MJ/kg
Metabolizable energy Pig	18 MJ/kg	21 MJ/kg
Metabolizable energy Poultry	16 MJ/kg	18 MJ/kg

*FM Fresh Matter, DM Dry Matter
**Please consider that the specified results are subject to raw material fluctuations and serve only as reference values; that may vary according to each harvest. Up to date analytical values can be supplied upon request.

FEED APPLICATION AND RECOMMENDATIONS

As a valuable feed ingredient, in general for all livestock, it is a good alternative to other plant or animal-sourced proteins for high performing animals.

CORN GLUTEN
Recommended highest inclusion rate (%) in complete feed*
*according to Feed-Alp and Feedipedia

Cattle	*% max.*	*Swine*	*% max.*	*Poultry*	*% max.*	*Others*	*% max.*
Calves	5	Piglets	5	Chickens	5	Horses	3
Rearing cattle	10	Rearing pigs	8	Rearing pullets	5		
Beef cattle	20	Fattening pigs	20	Laying hens	8		
Dairy cattle	20	Breeding sows	10	Broilers/turkeys **	5- 15		

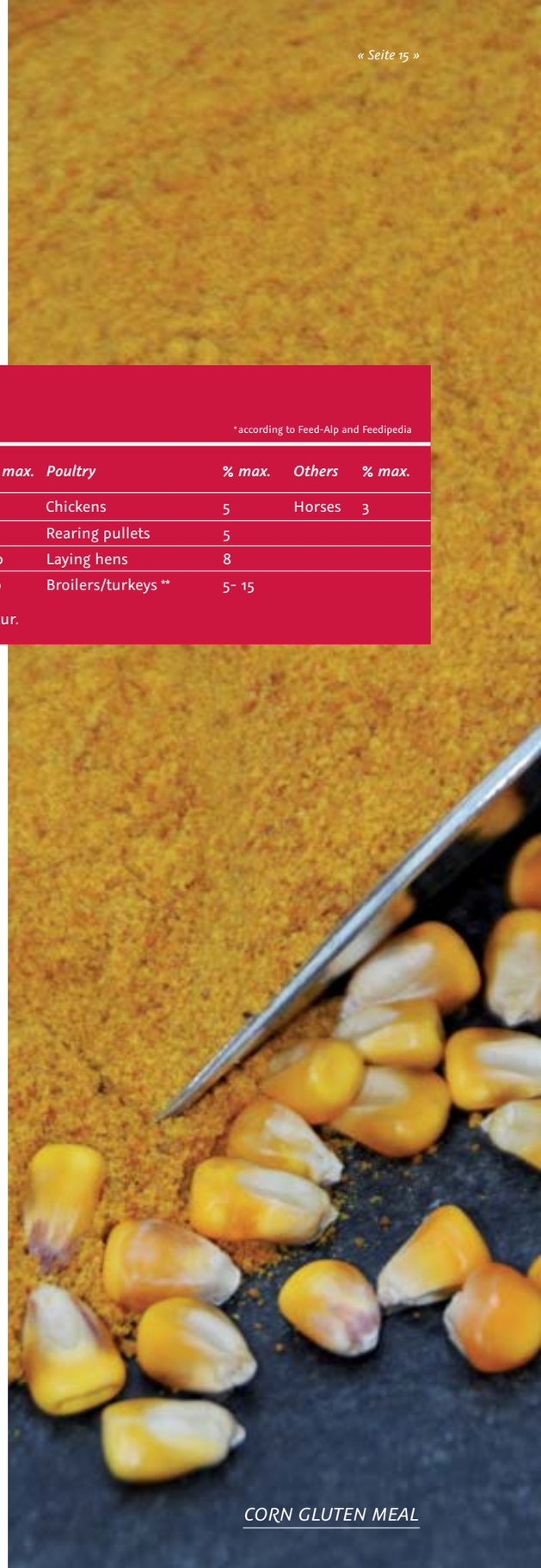
**Yellow pigmentation of the skin and fatty tissues may occur.

CORN GLUTEN
Certified GMO-free
Strict mycotoxin monitoring
High protein content
High content of natural carotenoids – xanthophylls (yolk pigment)

PACKAGING
in bulk and big bag (1.000 kg)

Suitable for the production of GMO-free foodstuffs, certified by agroVet GmbH.

ORGANIC Certified Organic



SUGAR BEET PULP PELLETS

ANIMAL FEED

DRIED SUGAR BEET PULP PELLETS

NUTRITIONAL TABLES

ANALYTICAL COMPONENTS / kg *	SBPP[1]	SBPPM[2]
Dry matter	at least 86 %	at least 86 %
Total sugar calculated as sucrose	6,5 %	9,0 %
Crude protein	7,5 %	8,5 %
Crude fat	< 0.2 %	1,0 %
Crude fiber	16,3 %	14,0 %
Crude ash	5,5 %	9,0 %
Nitrogen-free extract	58,2 %	55,0 %
MACRO-MINERALS		
Calcium (Ca)	0,8 %	0,8 %
Phosphorus (P)	0,1%	0,1 %
Magnesium (Mg)	0,2 %	0,2 %
Potassium (K)	0,7 %	1,75 %
Sodium (Na)	0,2 %	0,5 %
ENERGY VALUES		
Net-Energy-Lactation	6,5 MJ/kg	6,5 MJ/kg
Metabolizable energy Beef cattle	11 MJ/kg	10,40 MJ/kg

[1] Sugar beet pulp pellets (unmolassed) in Fresh Matter
[2] Sugar beet pulp pellets in Fresh Matter

* Please consider that the specified results are subject to raw material fluctuations and serve only as reference values; that may vary according to each harvest. Up to date analytical values can be supplied upon request.

FEED APPLICATION AND RECOMMENDATIONS

AGRANA produces molassed and unmolassed sugar beet pulp pellets.

BEET PULP PELLETS offer a valuable feed resource, with high amount of digestible fiber, particularly for ruminants, amounting to 15 % to 18 %. The fiber fraction primarily consists of cellulose, hemicellulose and pectins; where as in contrast to starch and sugar, it is slowly degraded in the rumen.

DAIRY / BEEF CATTLE

The crude fiber content is well digested by dairy and beef cattle. Beet pulp pellets are highly palatable and may be fed in moderate amounts to calves from the age of about four months.

In the dairy cattle diets, beet (molassed) pellets are favoured to balance the feed, offering grassland farmers a good way of supplementing protein-rich silage with energy. Beet pulp (molassed) pellets are also an ideal supplementary energy source for high-performing dairy cows. Note: it may prevent hyperacidity.

SHEEP

The pellets are suitable for balancing and supplementing the feed rations, particularly during pasture grazing or low quality forage.

HORSES

The molassed sugar beet pulp pellets provide a variety in feed rations and stimulates the appetite. They are a valuable source of energy and help prevent digestive disorders. The pellets should be soaked in water before feeding (provide succulence in the ration).

PIGS / BREEDING SOWS

Due to the excellent swelling and slightly laxative properties, the beet pulp pellets are a good fiber source in breeding sow diets in the gestation period. Sugar beet pulp helps to convey a feeling of satiety and prevents obesity. The pectins contained in the beet (molasses) pellets, have a particularly positive effect on the intestinal flora of breeding sows, encouraging the development of lactic acid bacteria in the small intestine and may suppress E. coli strains.

A possible effect of feeding beet pulp pellets is the reduction of the amount of ammonia emissions in livestock manure and as a result, an improvement in the air quality in the animal housing. However, more measurements are required to confirm the aforementioned effect.

SUGAR BEET PULP PELLETS
Certified GMO-free
High fiber content
High palatability
Prevent ruminal acidosis
May prevent obesity and digestive disorders in sows
Support the developement of the gut flora

PACKAGING
Pellets (6-7 mm) in bulk and 40 kg bags

Suitable for the production of GMO-free foodstuffs, certified by agroVet GmbH.

ORGANIC Certified Organic

MOLASSES

ANIMAL FEED

MOLASSES

Molasses are a syrup-like, dark brown co-product from the sugar production, containing organic acids and minerals, in addition to a 42 % sugar content.

IT IMPROVES the flavour and binds the dust in the compound feeds and roughage, thereby having a positive effect on feed intake.

MOLASSES are a quickly fermentable source of energy for rumen microorganisms.

They have a positive effect on milk protein content for dairy cattle, and can increase the milk yield. Molasses are ideal as a silage additive due to their high energy content. In the case of silage that has a low amount of fermenting substrate, it is worth-while adding 30 to 40 kg of molasses per tonne of silage.

NUTRITIONAL TABLES

*ANALYTICAL COMPONENTS/kg***	*FM**	*DM**
Dry matter	75 %	100 %
Total sugar calculated as sucrose	approx. 42 % pol.	56 %
Crude protein	10 %	13,3 %
Crude ash	12 %	16 %
Nitrogen-free extract	58 %	77 %

MACRO-MINERALS		
Calcium (Ca)	< 0,5 g/kg	0,67 g/kg
Potassium (K)	40 g/kg	53 g/kg
Phosphorus (P)	< 0,5 g/kg	0,67 g/kg
Magnesium (Mg)	< 0,2 g/kg	0,27 g/kg
Sodium (Na)	11 g/kg	14,7 g/kg

ENERGY VALUES		
Net-Energy-Lactation	5,1 MJ/kg	6,8 MJ/kg

* FM Fresh Matter, DM Dry Matter
** Please consider that the specified results are subject to raw material fluctuations and serve only as reference values; that may vary according to each harvest. Up to date analytical values can be supplied upon request.

FEED APPLICATION AND RECOMMENDATIONS

This tasty feed component is perfect for providing energy quickly and can therefore be used as a supplement to the feed for cattle, horses, pigs and poultry.

MOLASSES should only be used to feed pigs when they have a body weight of 40 kg or more.

IT IS A DELICACY when used in horse feed and is a valuable supplement.

GUIDELINES FOR FEED	
Animal	**Quantity**
Beef cattle	1,5 – 2 kg/day
Calf	1 kg/day
Dairy cattle	3 kg/day
Pregnant sows	up to 10 % of the DA
Fattening pigs	up to 7,5 % of the DA
Piglets	up to 2,5 % of the DA
Poultry	up to 2,5 % of the DA
Ewes	0,25 kg/day

MOLASSES
Certified GMO-free
Good palatability
Improves the binding of dust in the feed
Delivers energy quickly and has a high energy content
Increases milk yield
Excellent silage additive

PACKAGING
in bulk (silo)

Suitable for the production of GMO-free foodstuffs, certified by agroVet GmbH.

ORGANIC
Certified Organic
Conventional – suitable for ORGANIC PRODUCTION *

** According to the COMMISSION IMPLEMENTING REGULATION (EU) No 505/201, Article 22(b) referring on use of non-organic spices, herbs, and molasses.*

WHEAT BRAN

ANIMAL FEED

WHEAT BRAN

Wheat bran is a co-product of the dry milling of cleaned wheat into flour. It consists principally of fragments of the outer layers from the wheat, combined with small amounts of starchy endosperm of the wheat kernel.

WHEAT BRAN is one of the major agro-industrial co-products used in animal feeding, consisting of important nutrient levels: protein, minerals, fiber and starch. Due to its dietary characteristics, it is widely applied in special feed for e.g. in gestating and lactating sows diets, or as a component in the concentrate of ruminant diets.

NUTRITIONAL TABLES

ANALYTICAL COMPONENTS / kg **	*FM**	*DM**
Dry matter	87 %	100 %
Crude protein	15 %	17 %
Crude fat	0,3 %	0,3 %
Crude fiber	9 %	10 %
Crude ash	6 %	7 %
AMINO ACIDS		
Lysine	0,5 %	0,6 %
Methionine	0,2 %	0,2 %
Methionine + Cystin	0,5 %	0,6 %
Threonine	0,4 %	0,5 %
Tryptophan	0,18 %	0,21 %
Valine	0,6 %	0,7 %
MACRO-MINERALS		
Calcium (Ca)	0,1 %	0,1 %
Potassium (K)	1,1 %	1,3 %
Phosphorus (P)	1 %	1 %
Magnesium (Mg)	0,4 %	0,5 %
Sodium (Na)	0,01 %	0,01 %
ENERGY VALUES		
Net-Energy-Lactation	3,5 MJ/kg	6,1 MJ/kg
Metabolizable energy Pig	8,5 MJ/kg	9,8 MJ/kg
Metabolizable energy Poultry	6,7 MJ/kg	7,7 MJ/kg

*FM Fresh Matter, DM Dry Matter
**Please consider that the specified results are subject to raw material fluctuations and serve only as reference values; that may vary according to each harvest. Up to date analytical values can be supplied upon request.

FEED APPLICATION AND RECOMMENDATIONS

It is a good palatable feed ingredient and suitable for all livestock.

WHEAT BRAN
Recommended highest inclusion rate (%) in complete feed*
*according to Feed-Alp and Feedipedia

Cattle	*% max.*	*Swine*	*% max.*	*Poultry*	*% max.*	*Others*	*% max.*
Calves	10	Piglets	10	Chickens	5	Horses	10
Rearing cattle	25	Rearing pigs	10	Rearing pullets	10		
Beef cattle	25	Fattening pigs	20	Laying hens	15		
Dairy cattle	20	Breeding sows	25*	Broilers/turkeys	10		

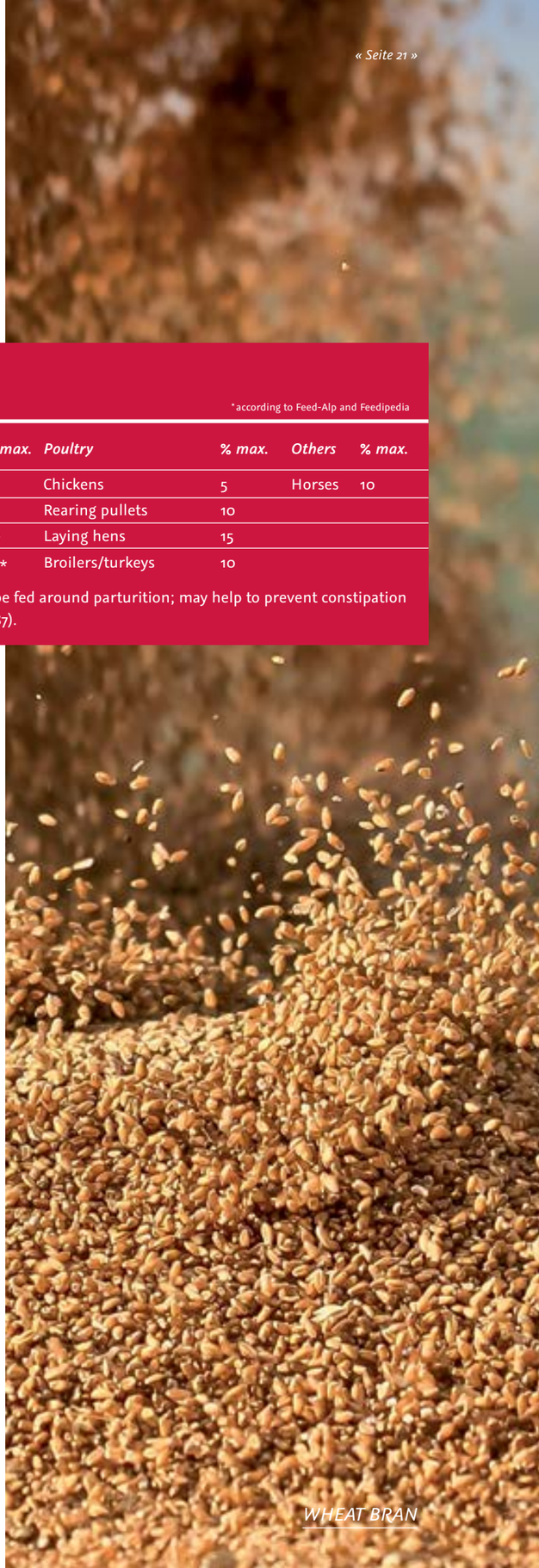
Wheat bran-rich diets in breeding sows are recommend to be fed around parturition; may help to prevent constipation and the Metritis-Mastitis-Agalactiae syndrome (Etienne, 1987).

WHEAT BRAN
Certified GMO-free
Strict mycotoxin monitoring
High crude fiber content
Good saturation value
Reduced feed costs
May prevent acidosis

PACKAGING
Pellets in bulk

Suitable for the production of GMO-free foodstuffs, certified by agroVet GmbH.

ORGANIC Certified Organic



WHEAT BRAN

ANIMAL FEED

ACTIBEET®

ActiBeet® is a natural source of Betaine, obtained from partially desugarized (sugar) beet molasses and thus a co-product of the Austrian sugar beet molasses production from Tulln (Austria).

ACTIBEET® – NATURAL SOURCE OF BETAINE

BETAINE is a multifunctional nutrient that exerts a number of important physiological functions at the gastro-intestinal and metabolic level. As a non-ionic osmoprotector, it supports the mineral and water balance and helps to maintain the cells' volume, protecting them in critical situations without disrupting normal functions. Courtesy of its formula, $(CH_3)_3N^+CH_2COO^-$ – with three methyl groups, Betaine is regarded as the most efficient methyl group donor for the transmethylation processes.

In the field of animal nutrition, Betaine is well- known for its successful application in the poultry and swine diets.

Betaine supports the health status of the animals also through improved digestion and increased availability of essential and non-essential nutrients in the diet, thereby guaranteeing a balanced and efficient animal nutrition. In conclusion, ActiBeet® improves animal performance and fertility, as well as increases the profitability.

ORGANIC Suitable for ORGANIC PRODUCTION *

* *According to the COMMISSION IMPLEMENTING REGULATION (EU) No 505/201, Article 22(b) referring on use of non-organic spices, herbs, and molasses.*

FEED APPLICATION AND RECOMMENDATIONS

Betaine is widely applicable for all animal categories and species.

ACTIBEET® as a source of natural Betaine, is recommend for pigs, poultries, aquacultures and ruminants diets (calves and lambs), at a rate of 1 - 5 kg/t of finished feed.

ACTIBEET® is a stable, non-toxic and GMO-free feed ingredient, from Austrian sugar beets!

Starting Product: GMO-free Austrian sugar beet

Multifunctional nutrient with essential physiological functions

Non-ionic Osmoregulator
- Cell protection
- Maintenance of mineral and water balance
- Supports animals in stressful environments
- Positive effect on nutrient digestion

Methyl donor
- Supports energy, protein and fat metabolism

Scientifically proven
- AGRANA's trial at Schothorst Feed Research Center *„The effect of betaine in broiler chickens fed diets deficient in methionine and choline"*

ActiBeet®

Value increase in the production
- Methionine saving
- Choline saving
- Improved performance
- Promotion of health
- Economic efficiency

Broad application
- Monogastric
- Aquaculture
- Ruminant

Betaine

agroVet Certification

GMP+

Natural, stable and widely applicable

CORN GERMS

ANIMAL FEED

CORN GERMS

Corn germs are a product with high content of the valuable oil, obtained during the production of starch from corn kernels.

CORN GERMS is a feed specialty that contains a high level of unsaturated fatty acids, which are mostly linoleic acid, but includes also palmitic acid and oleic acid. With moderate protein and high fat content, that represents a good energy source.
Large quantities of corn germs are utilised also in the food industry.

NUTRITIONAL TABLES

ANALYTICAL COMPONENTS / kg **	FM *	DM *
Dry matter	96 %	100 %
Crude protein	14 %	14,6 %
Crude fat	45 %	47 %
Crude fiber	4,5 %	4,7 %
Crude ash	5 %	5,2 %
AMINO ACIDS		
Lysine	0,6 %	0,6 %
Methionine	0,2 %	0,2 %
Methionine + Cystin	0,5 %	0,5 %
Threonine	0,45 %	0,47 %
Tryptophan	0,14 %	0,15 %
Valine	0,7 %	0,73 %
MACRO-MINERALS		
Calcium (Ca)	0,06 %	0,06 %
Potassium (K)	0,9 %	0,9 %
Phosphorus (P)	1,2 %	1,3 %
Magnesium (Mg)	0,5 %	0,5 %
Sodium (Na)	0 %	0 %
ENERGY VALUES		
Net-Energy-Lactation	8,6 MJ/kg	9 MJ/kg
Metabolizable energy Pig	15 MJ/kg	16 MJ/kg
Metabolizable energy Poultry	13 MJ/kg	14 MJ/kg

* FM Fresh Matter, DM Dry Matter
** Please consider that the specified results are subject to raw material fluctuations and serve only as reference values; that may vary according to each harvest. Up to date analytical values can be supplied upon request.

FEED APPLICATION AND RECOMMENDATIONS

CORN GERM
Recommended highest inclusion rate (%) in complete feed *
*according to Feed-Alp and Feedipedia

Cattle	% max.	Swine	% max.	Poultry	% max.	Others	% max.
Calves	10	Piglets	3	Chickens	5	Horses	5
Rearing cattle	10	Rearing pigs	5	Rearing pullets	5		
Beef cattle	10	Fattening pigs	5	Laying hens	5		
Dairy cattle	10	Breeding sows	5	Broilers/turkeys	5		

CORN GERMS
Certified GMO-free
Strict mycotoxin monitoring
Source of high quality energy
High content of unsaturated fatty acids (linoleic acid)

PACKAGING
in bulk

Suitable for the production of GMO-free foodstuffs, certified by agroVet GmbH.

CORN GERMS

AGENABEE®

ANIMAL FEED

AGENABEE®

AgenaBee® is approved and tested bee feed, a mixture of different types of sugar (glucose, maltose, fructose) and is absolutely free from starch. AgenaBee® is produced by AGRANA in Aschach, Austria. Exclusively GMO-free raw materials are processed carefully and with the highest degree of purity.

AGENABEE® guarantees prompt feed acceptance by the bee, ensuring the optimal usage of the feed. AgenaBee® is microbiologically stable and has a long shelf life. Thanks to its high quality, AgenaBee® has been the market leader for longer than a decade.

CARBOHYDRATE COMPOSITION (HPLC)

Glucose	approx. 24,0% in the DM
Maltose	approx. 42,0 % in the DM
Fructose	approx. 17,0 % in the DM
Oligosaccharides	approx. 17,0 % i.d. DM (residual)

APPEARANCE
colourless to pale yellow, viscous liquid

ODOUR AND TASTE
neutrally pure, characteristic, sweet

PACKAGING
in bulk (silo), returnable-containers per 1.200 kg and 25 kg canisters

FERTILIZERS

BIOAGENASOL®

BioAgenasol® is a new generation of organic and pure vegetable fertilizer, a product from the bioethanol production (through grain fermentation) in Pischelsdorf (Lower Austria). It is produced using yeast (S. cerevisiae), that is then mixed with organic liquid fertilizers which are approved for organic farming (InfoXgen). Finally, partially desugared molasses is added. Only GMO-free raw materials are used for the production of BioAgenasol®.

ORGANIC FERTILIZER FOR FRUIT, HORTICULTURE, WINE GROWING AND ARABLE FARMING

BIOAGENASOL® is free from animal origin and approved for use as fertilizer in organic farming. It is particularly suitable for all fruits and vegetables, wine growing, arable crops, lawns, balcony flowers, as well as for all types of ornamental plants and shrubs. The special composition does not only provide needed nutrients and stimulation of the soil microorganisms, but mobilises also often not entirely available plant nutrients such as potassium and phosphorus.

ADVANTAGES OF BIOAGENASOL®...

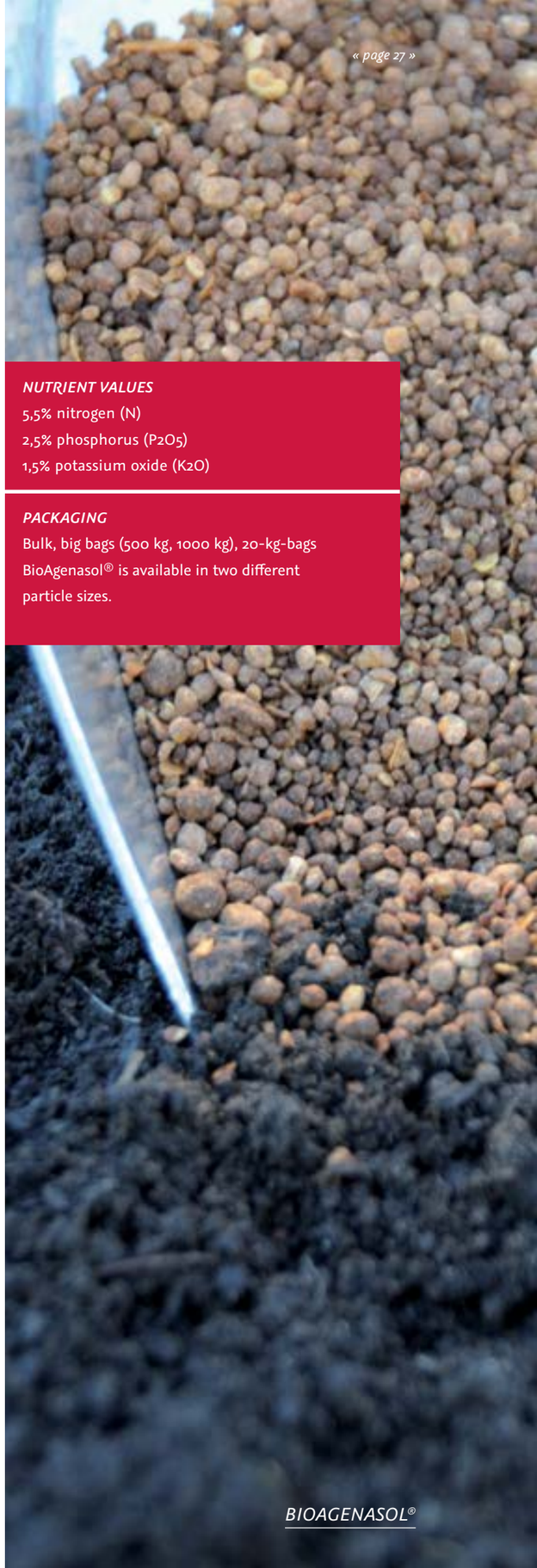
... initial rapid impact combined with a long-lasting effect
... the use of exclusively vegetable, GMO-free raw materials
... a very good degree of plant compatibility– even with high demanding crops
... not solely a fertilizer, but also an activator for the soil organisms
... it caters for lawns, with a uniform, dense growth and prevents entanglement
... it promotes formation of humus and thus the soil health
... over-fertilization does not cause fertilizer burn
... it poses no risk to man or animals
... no leaching of nitrogen (environmentally friendly)
... ease of use in the agricultural practice
... a pleasant smell (wood, bread)

For more information about BioAgenasol® – the new fertilizer generation from Austria – visit WWW.BIOAGENASOL.COM

ORGANIC Suitable for ORGANIC PRODUCTION

NUTRIENT VALUES
5,5% nitrogen (N)
2,5% phosphorus (P_2O_5)
1,5% potassium oxide (K_2O)

PACKAGING
Bulk, big bags (500 kg, 1000 kg), 20-kg-bags
BioAgenasol® is available in two different particle sizes.



BIOAGENASOL®

ADDITIONAL SERVICES

TRADING DESK

IN ADDITION TO THE COMPANY'S FEED PRODUCTS, FURTHER FEED MATERIALS ARE OFFERED:

- Soybean meal
- Rapeseed meal
- Sunflower meal

LOGISTICS

AGRANA specialises in the feed transportation, including all logistic processing, throughout Europe. The commodities are delivered promptly and in compliance with the industry's high hygiene standards.

There are a wide range of possibilities available for both, solid and liquid product deliveries; such as, via truck (in bulk or in big bags, flexitanks, IBCs), ship or train.

CONTACT

ANIMAL FEED & CO-PRODUCTS SALES DEPARTMENT

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