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Faba Beans

— PURE QUALITY



Faba beans are used as an ingredient in recipes all over the world. As a feed material, beans are also handily used. The starch-rich bean provides a ton of energy, while being low in fat. This easily digestible protein source is free of GMO's, highly palatable and supportive in rumen protein synthesis.



FABA

Faba bean plants are a legume fodder crop cultivated throughout the world, originating from the Middle-East. Bean plants are fast-growing, mostly green plants with white spotted waxy blooms. The large stalky plants can grow up to two meters and produce protein-rich bean seeds, which are used both in human- and animal consumption. The plant itself can be used as a fibrous fodder for animal feed.

As the plant structure is similar to most forage crops, photosynthesis within the plant traps carbon dioxide, making bean plants a beneficial yielding cover crop with a low impact on the environment. With overall protein yield of bean seeds and their reduction of carbon dioxide, it is an environmentally beneficial alternative to more traditional sources of protein such as meat - for which the animals produce carbon dioxide - or soybeans, requiring vast amounts of fresh water compared to the drought resistant pea plant.

In rotations beans are a valuable crop due to their cultivation breaking cereal disease cycles such as crown rot and nematodes, facilitating weed control and moreover increasing soil condition and fertility. This increase in fertility results from the plant's characteristic to extract nitrogen - up to 270kg/ha - from the air and to fix it in the soil, allowing for the cultivation following the harvest to benefit from soil conditions in yield and protein content.

Dried pea seeds have a fibrous and robust seedcoat, which make them easy to transport and store, with a shelf-life over one year without any reduction in nutritional aspects. Aside from direct use of fresh- or dry beans as a food, the human consumption applications of the crop are mainly centred in the Middle-East and Asia, where applications differ from a raw material for falafel to roasting for use as a snack. In growing numbers, faba beans are being processed to function as a raw material in the production of protein-rich meat replacers and provide a solid basis for the increasing range of vegetable protein products available. Where in the early stages similar products have been extracted from soybeans, the protein derivatives as obtained through pea processing do not have any allergenic effects and are gluten-free.

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The natural adaptability of faba bean strains allows for an easy growing plant with a high resistance towards wetter conditions and cold, removing any requirement for genetic modification, leading to a GMO free product. Where applications of bean seeds in human consumption are very diverse and specialised, beans are also a very important part of animal feed diets. With possibilities to be fed directly, in combination with other feed materials, beans offer a multitude of nutritional benefits for compound feed manufacturers as well. Being low in fat and having a moderate fibre content, beans

are a highly palatable and easy digestible protein source, offering an excellent amino acid balance and providing a ton of energy.

The energy source of beans attributed to the high levels of starch in the seed's kernel, which is produced by conversion of sugar as part of the plant's photosynthesis process. The remnant of the sugar amounts to a further four percent, making up for the overall energy potential of beans.

with reference to the energy distribution, beans have a very high digestibility in pig diets. As starch is the main basis of the energy for peas, pigs are able to efficiently consume beans, whereas a note has to be drawn to the fibrous nature of beans, the possible presence of anti-nutritional factors and tannins which may have an adverse effect on overall digestibility when the ration exceeds twenty percent.

In line with the high digestible energy, beans offer a vast protein base with a well-balanced amino acid pattern. The main amino acid beans are known and well-valued for is lysine, which is mainly found in legumes. While the body is not naturally producing this amino acid, it is vital for growth and meat quality to obtain this from the animal's feed.



Faba beans are mostly used and favoured ruminant diets, as the seeds provide a rapidly degradable dry matter and protein for microbial protein synthesis. The presence of this high rumen degradable protein and a lower rumen degradable starch is highly soluble and advantageous for ruminant feeds, providing a more sustained release of nitrogen, improving the rumen microbial growth. Dairy cow rations including up to 5 kg of faba beans per day can be reached in corn-based diets, completely replacing soybean- or rapeseed meal, with no detrimental effects to overall feed intake, milk production or -composition.

In high concentration bean diets, the ruminal degradation is similar to that in corn, but much slower than that in wheat, oats and barley. This slow starch degradation helps control the rumen PH levels, especially in animals that are fed large amounts of grain, reducing the risk on acidosis. Stable PH levels further allow for a higher dry matter intake, positively impacting milk production and the butterfat percentage within.

In pig diets, faba beans have a positive effect on body weight gain and carcass quality. The legume is generally fed in combination with rapeseed meal. Where the peas add lysine to the diet, it does lack the amino acids methionine and cystine, which are abundantly available in rapeseed meal. Where soybean meal is generally regarded as the optimal source of lysine and protein combined, beans offer a comparable palette, while being unprocessed, non-GMO, non-allergenic and readily available within Europe, presenting themselves as a more sustainable option environmentally and financially.



In poultry diets, beans are generally added to increase palatability, as the presence of legume starch allows for a lower overall digestibility. The combination with sufficient energy supply and proper protein source make beans a very economical ingredient for chickens. Further processing peas in a hammermill could be an option to further enhance the intercellular starch and increase digestibility. As for poultry the main limiting amino acids are methionine, cystine and tryptophan, it is important to ensure poultry feed containing peas are appropriately balanced for these amino acids.

In aquaculture beans can be an economic solution for species, replacing fishmeal, soybean meal or gluten, wherein dehulling the beans may increase the protein and carbohydrate fraction of the product while reducing the fibre content to prevent adverse effects. The inclusion of faba beans in aquafeed has positive effects on growth, the ratio of feed conversion and overall digestibility.



Specifications

Moisture	Abt. 14,0%	Sugar	Abt. 4,0%
Protein	Abt. 28,0%	Fat	Abt. 1,5%
Starch	Abt. 45,0%	Ash	Abt. 4,0%
Fibre	Abt. 9,0%	Metabolizable energy	12,5 MJ/kg



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