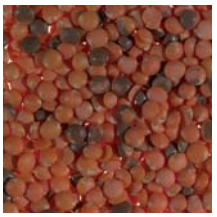
New Process



Protein Shifting

Until now, animal proteins for the production of concentrate have mainly been obtained from fish meal which is expensive and scarce.

With the development of a new process from collaboration between the companies

- **F.H. SCHULE Mühlenbau**
- **HOSOKAWA ALPINE**
- **and AMANDUS KAHL**

high-quality vegetable protein concentrates are produced economically as a substitute for animal protein.

Vegetable proteins are supplied by quickly reproducing legumes which are inexpensive and infinitely available worldwide.

Advantages of the process

- Innovative and economical
- Vegetable instead of animal proteins
- New market opportunities
- Higher margins in the food industry can be achieved.
- High market prices can be realised with by-products such as shells
- Storage without problems

Concentration of know-how

Each of the three companies can rely on long-standing experience and ranks among the leading international suppliers in their sector.

The special fields of the individual companies in the production of protein concentrate for example from legumes:

Comparison of the standard process with the innovative SCHULE / HOSOKAWA ALPINE / KAHL precision process

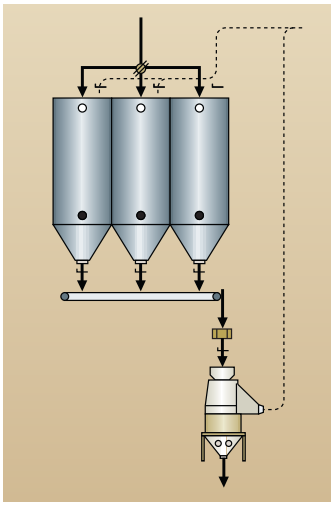
	Standard process		Precision process	
	Fines content	Protein content	**Fines content**	**Protein content**
Peas (yellow)	30 %	> 50 %	**35 %**	**> 55 %**
Beans (field beans)	25–30 %	> 60 %	**> 35 %**	**> 60 %**
Lupins (blue)	not possible	not possible	**> 40 %**	**> 60 %**
SPC (soy protein concentrate)*	> 60 %	> 65 %	**65 %**	**> 65 %**

* On the basis of soybean meal with a protein content of abt. 50 to 55 %

■ F.H. SCHULE Mühlenbau

Cleaning, separation and shelling. Defined separation of shells and fibres of the legumes kernels ensures an economical process.

Verticone, conical shelling machine for legumes



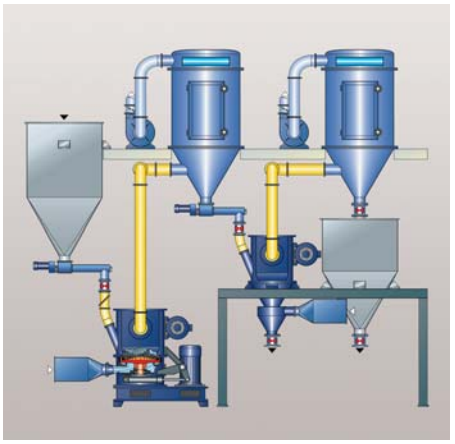
Defined shelling with the Verticone

New process: > 55% protein by means of protein shifting

HOSOKAWA ALPINE

Fine grinding of legumes and separation by means of air classification into protein concentrate and starch concentrate.

HOSOKAWA ALPINE mill



Flow diagram of a plant for the production of protein concentrates

KAHL Pelleting press

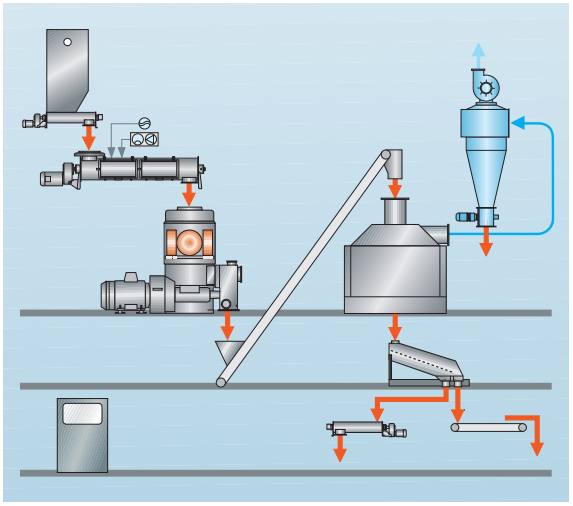


Diagram of a KAHL pelleting plant

AMANDUS KAHL

Gentle pelleting using the flat die pelleting press and cooling for storage and transport of the individual fractions, which are fine-grained to the extent that they cannot be handled without prior pelleting.

Precision process

In comparison with the common standard process, the innovative precision process of protein shifting is an economical and environmentally sound alternative for the supply of new protein resources - this takes into account a medium-term ”return on investment“.

SCHULE

KAHL

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