

KAHL  
KAHL - Group

Complete Plants and Machines

The image features a world map with a color gradient from blue in the north to orange in the south. A blue square with a white circle is overlaid on the map, containing the word 'KAHL' in white. Below the map, the text 'KAHL - Group' and 'Complete Plants and Machines' is displayed.



KAHL

Our Central Factory  
in Reinbek near Hamburg

The image shows an aerial view of a large industrial complex with several large buildings and parking lots. The KAHL logo is visible in the top right corner. A blue banner at the bottom contains the text 'Our Central Factory in Reinbek near Hamburg'.



KAHL Group

The Delivery Program



Plants and Machines for the Feed Milling Industry, Chemical Industry, and Recycling Industry



Plants and Machines for the Coffee-, Cocoa Industry



Plants and Machines for the Rice- and Grain Processing Industry



Machines for Spice milling



Poultry Feed Mill 30 t/h





## Roughage Feed Plant 15 t/h

With long time conditioner  
and pellet presses  
F 38-780, F 45-1250



Pelleting Press for Straw



Compound Feed Mill 60 t/h



Compound Feed Mill 7/10 t/h  
1 Expander- / Pelleting Line

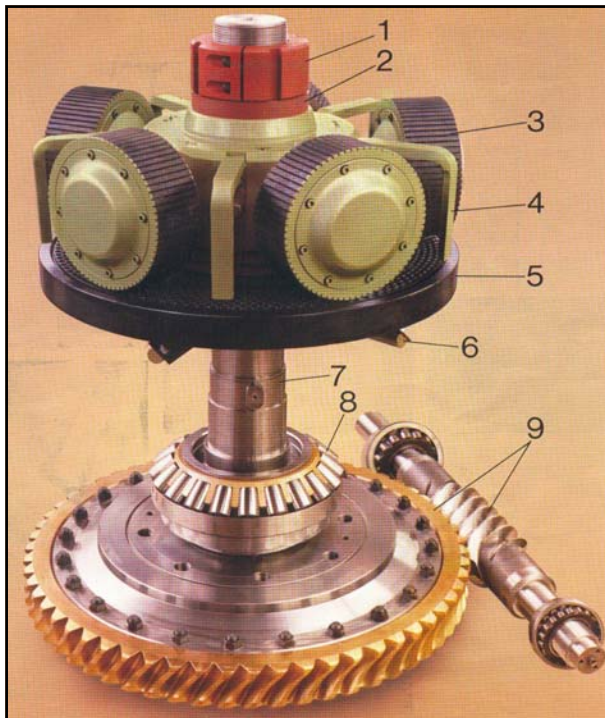
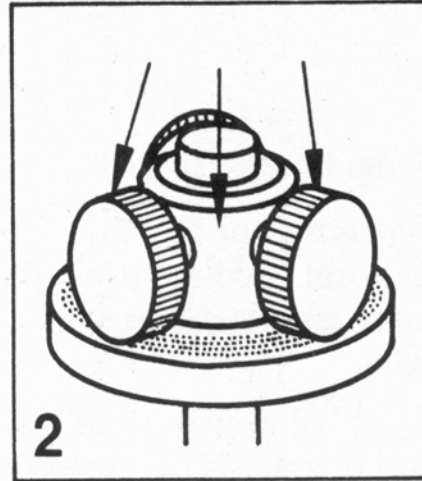
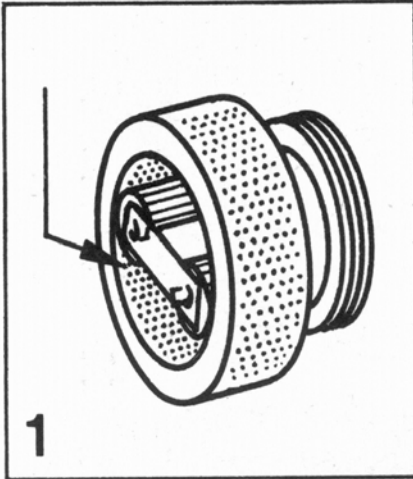


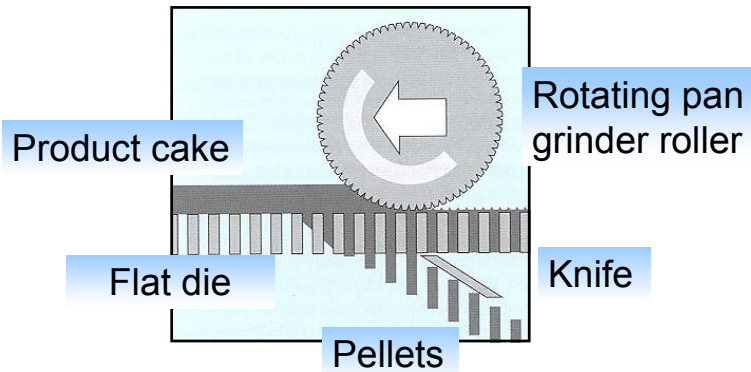
Compound Feed Plant 30 t/h  
2 Expander- / Pelleting Lines



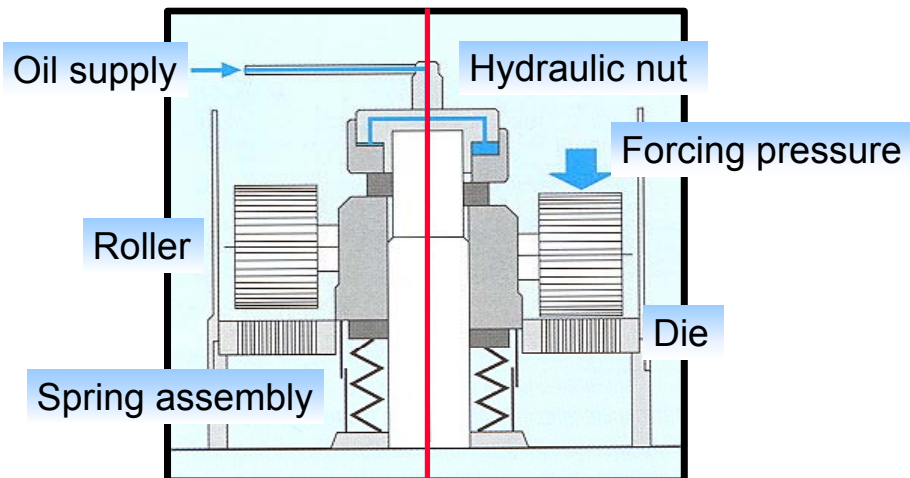
Bagasse Feed Plant 30 t/h

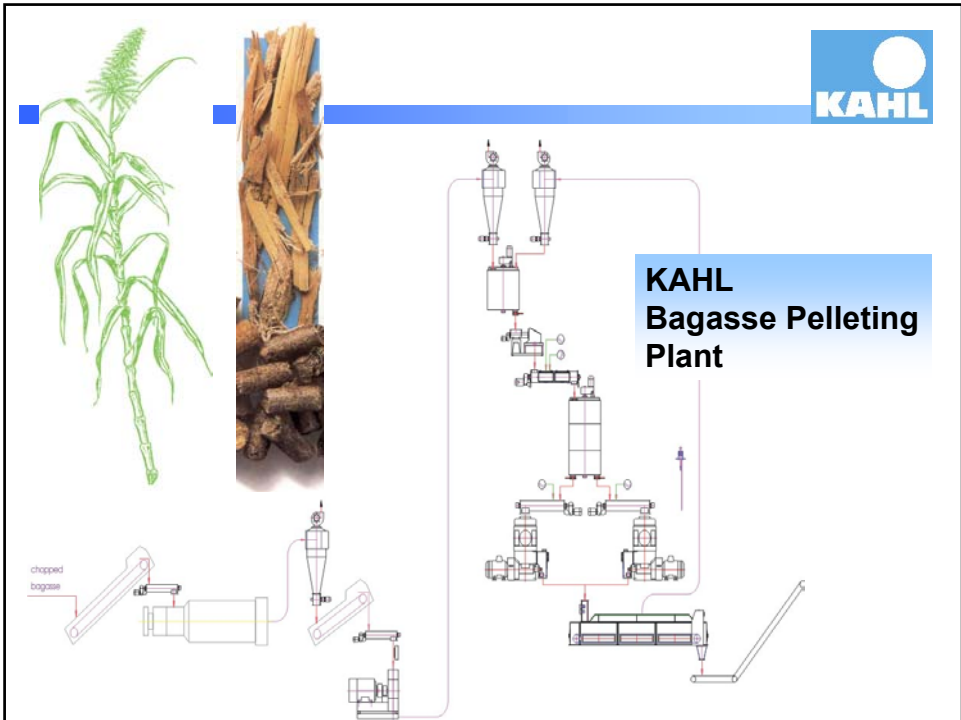
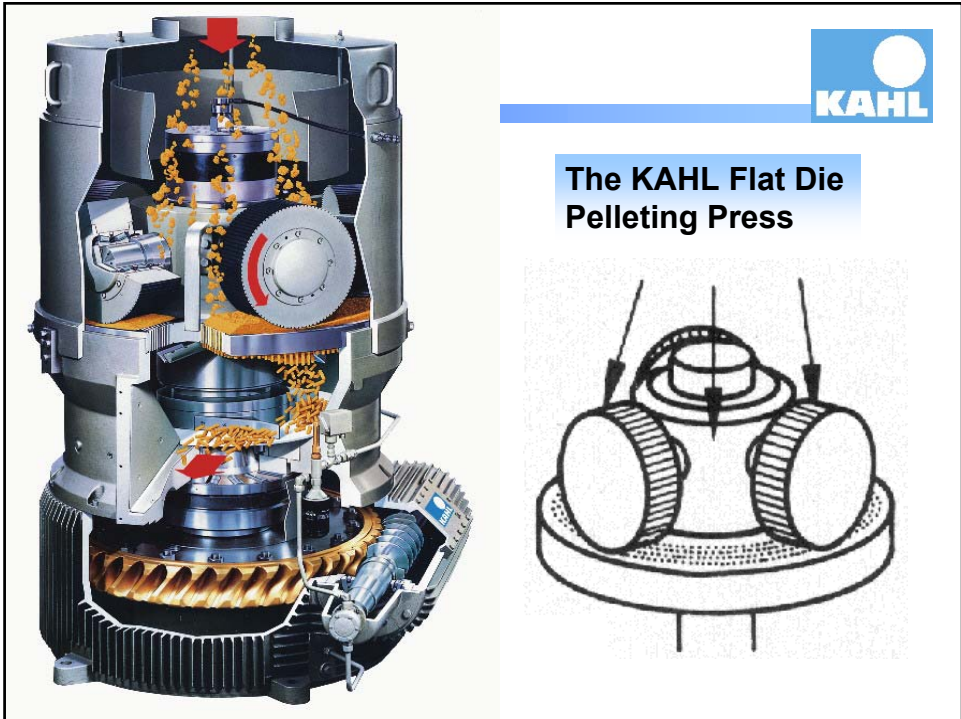






### Hydraulicsystem of the Press









Amandus Kahl is well known for their know how and for the ability of their pelleting machines to process difficult roughage materials such as wheat straw, maize straw and of course bagasse.

Wherever cereal grains or sugar cane is being cultivated a lot of roughage, such as straw or bagasse is generated. These by-products are often burnt or utilised to provide boiler energy but they can also be used as ruminant feed.

The increase in the world population is forcing industry to seek and to utilise all known available feedstuffs in order to meet the demand for dairy and meat products. Companies might also find that it pays them to utilise such relatively low value products in a more profitable way, as a ruminant feed components, rather than to simply burn them for their calorific energy values.




Before whole bagasse can be fed to cattle it is necessary to condition the product by breaking down the ligno-cellulose component, to such extent that the animal can use the product, in terms of its digestibility and to make it more readily available. i.e. in pelleted form.

Different chemical means of decomposition and technical processes have been used, such as NaOH, Urea and Ammonia.

One process that has proven to be quite popular and most cost effective, is based on the addition of NaOH as a conditioning agent. It is characterized by:

- **Crushing and de-fibration** of the straw or bagasse, to render the material more accessible to the decomposition agent.
- **Conversion of the cellulose structure** from a crystalline state into an amorphous state by means of NaOH, together with heat, time, and pressure, in order to increase digestibility.
- **Compaction**, i.e. pelleting of the product in order to increase the bulk density of the straw or bagasse. This increases the animal's feed consumption and its performance.

One can also add UREA to increase the nitrogen content of the product and the production of bacterial protein, which in turn contributes to a general protein increase. This is particularly important for the feeding of dairy cattle.



**Treated Bagasse Pith as a Feedstuff for Cattle?**

For a long time the feedstuff industry has been searching for an economical process to increase the digestibility of fibrous by-products - and AMANDUS KAHL is offering it.

After drying the bagasse will be treated by the AMANDUS KAHL process technology. This treatment causes the destruction of lignin and improves the digestibility of the fibre in the ruminant's stomach. Molasses, another product in the sugar refining process, may be added as a nutrient to the bagasse.

Furthermore the bagasse and molasses mixture can be completed to a basic compound feed by addition of grains, bran, oil cakes, minerals, and vitamins.

After pelleting the product can be handled and stored in an economical way.

Processing of bagasse is only one example for the use of roughage products. There are other possibilities like processing for example maize straw, wheat straw etc.

**¿Bagazo fino tratado como pienso para ganado vacuno?**


Durante mucho tiempo la industria de piensos ha buscado un proceso económico para aumentar la digestibilidad de subproductos fibrosos - y AMANDUS KAHL lo ofrece.

Después de secarlo, el bagazo será tratado con la tecnología de procesos de AMANDUS KAHL. Este tratamiento causa la destrucción de lignina y mejora la digestibilidad de las fibras en el estómago de los rumiantes. Melaza, otro producto en el proceso de refinación de azúcar, puede ser añadida al bagazo como nutriente.

Además la mezcla de bagazo y melaza puede ser completada a un pienso compuesto básico añadiendo cereales, salvado, torta oleaginosas, minerales y vitaminas.

Después de la pelletización se puede manejar y almacenar el producto de manera económica.

El procesamiento de bagazo solo es un ejemplo para el uso de productos de pienso forrajero. Hay otras posibilidades, como procesar p.ej. paja de maíz, paja de trigo, etc.



**KAHL**  
advertisement  
in an international  
sugar journal



## Bagasse Pelleting Plant



- The Amandus Kahl company, having recently celebrated their 125<sup>th</sup>. anniversary in 2001, have a wealth of experience in the pelleting of biomass feed stocks, as well as many other raw materials.
- Evidence of this can be found in the form of the many KAHL factories, turnkey installations, and machines in most parts of the world.
- Particularly In the field of thermal heat treatment of feedstock and in the processing of roughage, Amandus Kahl enjoys a leading position and their R&D activities are internationally recognized.

- The unique flat die pelleting press has enormous advantages when used for the pelleting of roughage, or voluminous products such as straw or bagasse.
- Bagasse pelleting is a familiar concept to Amandus Kahl and they have installations to prove this.
- Pelleted bagasse can be used as a combustible fuel, for energy in the boilers of sugar mills and other factories; as raw material in furfural production, or treated with NaOH for use in compound animal feed.



**AMANDUS KAHL**  
Your Competent Partner