

# Expansion for ‘Magic’ feed processing line

At the end of 2005, Vitelia feed manufactured the first feed with their new production line “Magi-con”. It is the first and only plant, that has arranged its lay-out in such a way that feeds can be manufactured and controlled on contents and shape of the final product.



In its feed mill in Oirlo, the Netherlands, cooperative Vitelia keeps on conjuring magical feeds

By Dick Ziggers |

The Magi-con feed concept takes feed manufacturing to a higher level. The production line provides operators the opportunity to make any desired feed in terms of shape of product, internal content and quality by expanding, extruding or regular pelleting of the compounds. The aim is to improve health and performance of the animals, which ultimately is valued in a better quality of the animal products. Technicians of Dinissen Process Technology, installation and software specialists of Imtech and operators and nutritionists of Vitelia feed united their qualities and worked on the project, which was instigated by Jan Janssen, general manager of then SaWeCo feed. This cooperative, at the beginning of 2008 merged with cooperative farmers union Ysselsteyn to form Vitelia feed, which has an annual turnover of 550,000 tonnes of feed (€120 million in 2007) and is within the top ten of Dutch feed companies. As a result of this merger a new feed mill will be built in the area of Ysselsteyn to replace four existing mills. The new mill will have a capacity of 100 tph and will be operational in 2011.

“After the merger, more farmers asked for the special feeds produced on Magi-con,” Janssen says. “Raw material prices have changed considerably, recipes constantly change and our mills are constantly filled. Also more interest has arisen in different grinding of the raw materials, whether it is using a hammer mill or roller mill. Mueslis have also become more popular; at first only for horses and cattle, but now we also receive demand for pigs and poultry. This gave us enough reasons to start thinking about installing a second Magi-con line.” This thinking resulted in real action and became fact in July 2008.

Janssen has delegated the general management of the feed mills to two managing directors and now focuses on innovation within Regional Business Centre “de Oelderse Halte”, a platform that unites several disciplines within the agriculture business and small and medium enterprises (SME). “It is a melting pot of agribusiness and SMEs. We created a business plan that centralises cooperation, durable customer satisfaction, flexibility and creativity. The agricultural (feed)



Jan Janssen has a great drive to innovate the feed industry. Magi-con is one of the concepts he developed in close cooperation with Dinnissen Process Technology (Photos: Vitelia)

## Characteristics Magi-con

The characteristics of a multi-functional animal feed production process are:

- High conversion of pellets / extrudate
- High energy pellets / expandate
- High digestibility of the feed
- Homogeneous dosing of sensitive ingredients:
  - Enzymes / nutraceuticals
  - Vitamins
  - Dosing at non-critical positions (at low temperature)
- Maximum flexibility
- Optimal product quality

To improve digestibility and intake, a soft pellet is recommended. With Magi-con easy digestible feeds can be manufactured. Because of the use of a Long Term Conditioner, which uses high temperatures, a salmonella free feed is guaranteed. From practical experiences it was shown that Magi-con feeds enables:

- Better digestibility
- Healthier animals
- Cleaner stables
- More growth per kg of feed
- Lower feed costs
- Better manure quality

producer of yesterday has evolved into a financial service, which no longer only services agricultural customers. On the contrary, the share of agriculture in this sector is only five percent,” Janssen adds.

## Trendy feeds

In a brainstorm session on “innovations in the feed industry” producers asked themselves why the (compound) feed for cows, pigs and poultry always looked the same: dull, brownish and hard pellets. Are there no other options? Why not make different shapes and colours? Perhaps, as was suggested, pigs like soft pink pellets much better. This was the conception of Magi-con. Although the shape of the feeds did not change much, the concept did. For example, to charge the environment as little as possible Brazilian soy cake was replaced by rapeseed cake. This cake was supplied by the biofuel plant that converted rapeseed - grown by the surrounding farmers - into biodiesel and rapeseed cake. All Vitelia trucks run on this biodiesel. This way the circle is closed. “It is a good example of what can be reached using simple farmers’ common sense,” Janssen says.

With Magi-con, feed can be easily adapted to trends in the feed business. Janssen proclaims his “triple I” philosophy, being I, Innovation and Image. “The image of the feed industry is you and innovation can be achieved through cooperation. You don’t need to

do this on your own,” Janssen says. “It is not a sin to cooperate with your competitor as long as you pick the competitor that is the furthest away from you in terms of development. In such cooperation you can gain the most knowledge.”

## Energy use

When a mill is equipped with an expander, extruder and vacuum coater it is said that energy use is going up, making the feeds more expensive to produce. Janssen and also Henri Michiels, managing director at Dinnissen deny that. “Energy use doesn’t differ that much from conventional feed manufacturing. The expander and extruder do use more energy, but for pelleting less energy is used. For example the pellet mill can operate with a thinner die, which requires less energy to push the product through. Furthermore, the whole process is fully automated. In the new line the concept hasn’t changed, but we did discover new products.” In practice the improved results with the magic feeds have not been scientifically proven, but by using it on many farms some general conclusions can be drawn. One thing is the better digestibility of the feeds. Also palatability, due to the different stages of processing and coating, has improved which especially is of importance with weaned piglets. “Pigs prefer the Magi-con feeds and digest it better,” says Michel van den Bergh, pig specialist at Vitelia.



The Magi-con concept enables making feeds in different sizes, shapes and colours

“We found a 4% improved feed conversion. In sows we see more piglets per sow per year, but the piglets have a slightly lower weight at birth due to the fact that the total birth weight of a litter stays the same.”

### **Better, faster uptake**

During farrowing sows have to increase their feed uptake from 3-4 kg during gestation to around 8 kg in the farrowing stall. This increase in feed uptake has

to be realised in a period of 10 days, Van den Bergh explained. He says that with Magi-con produced feeds the sows can uptake the nutrients faster, which is of major importance for the top farmers.

“Vacuum coating gives an extra plus to the feed, in particular by making the feeds tastier by using special oils,” he says. On a practical level feeds are now tested on farms by supplying the farmer two different bags of feed, without the farmer knowing which feed he is feeding to his pigs. Results are collected separately. “After the merger with Ysselsteyn quite a few turkey farms became customers of ours. These birds also form an interesting target for Magi-con feeds, because turkeys are very sensitive in the gastro-intestinal tract,” Van den Bergh adds.

Innovation hasn't stopped at Vitelia. It is currently involved in a project on healthy pork using omega 3 fatty acids and poly unsaturated fatty acids (PUFAs), amongst other ingredients. “We are not doing this solo, but we try to get other parties' enthusiasm as well,” Janssen says. Also a feed design lab is on the drawing table to be able to carry out tests with newly designed feeds. “Currently our mills are too full to make special batches of research feeds,” Janssen says.

In the not so near future even an animal feed knowledge centre is on the cards. In the mean time the mill in Oirlo keeps on spitting out its magical feeds. |



The Dinnissen vacuum coater is the core of the Magi-con feed manufacturing process