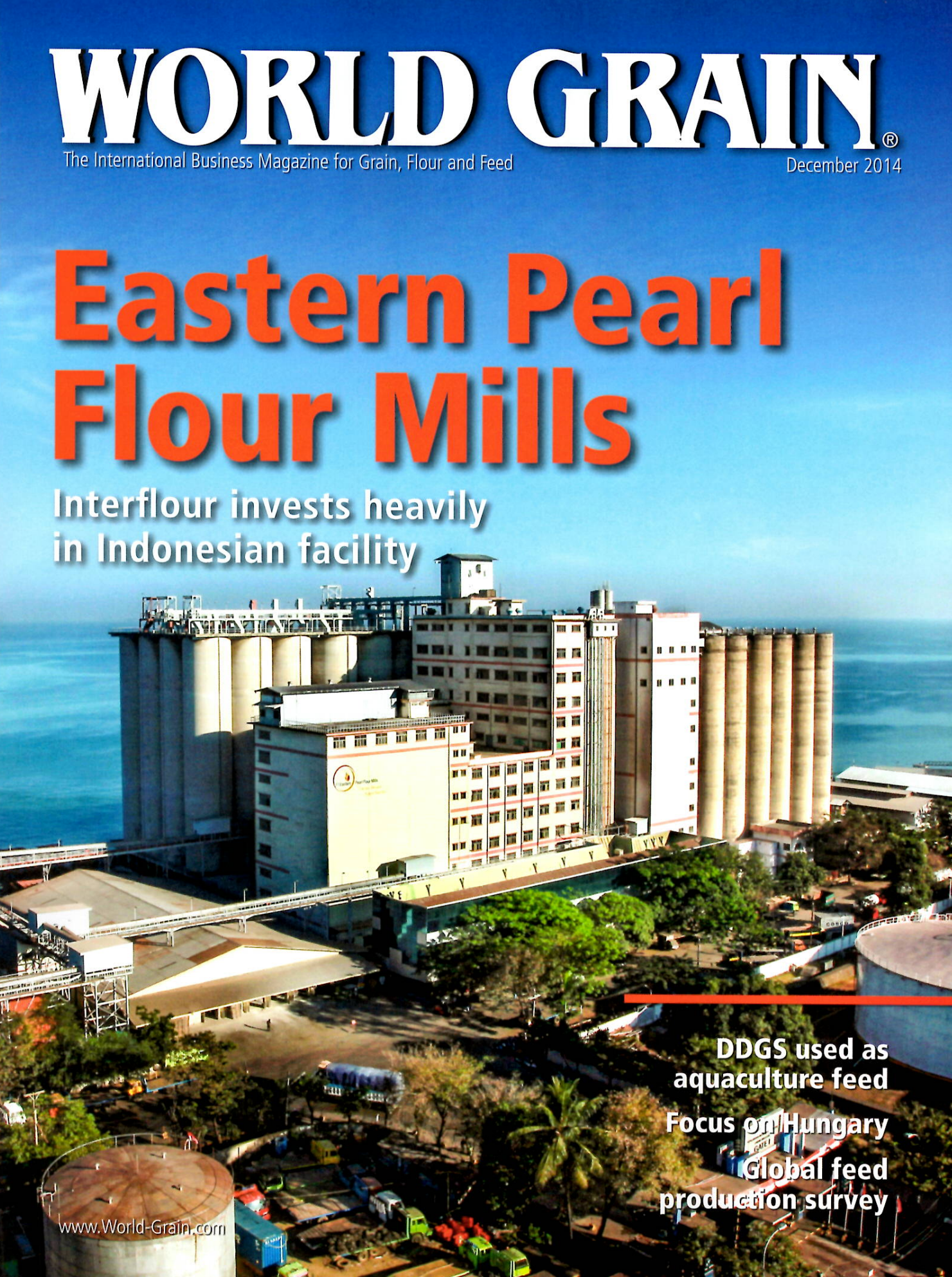
WORLD GRAIN®
The International Business Magazine for Grain, Flour and Feed
December 2014

Eastern Pearl Flour Mills

Interflour invests heavily in Indonesian facility



DDGS used as aquaculture feed

Focus on Hungary

Global feed production survey

www.World-Grain.com

Lecithin – the unrivaled nutrient

by Sophie Slawski

Studies show that using BergaPur as a feed supplement benefits poultry, aquaculture and horses

Phospholipids, well known as "lecithin," are biological emulsifiers that facilitate the emulsification of fats and fat-soluble vitamins. They improve the digestibility of nutrients in the feed, thus ensuring a better supply to the animals and boosting their performance.

Lecithin is an important component of the body's cells. It plays a major role in the formation of brain and nerve cells, the mucosa, muscle and lung tissue. As a vital substance it also assists numerous physical functions such as:

- digestive and metabolic processes;
- muscle formation and regeneration;
- growth of horn and hair;
- stress tolerance and cognitive processes; and
- fertility.

As one of the world's leading manufacturers of de-oiled lecithin, Berg + Schmidt has been dedicated to the domain of the unrivaled nutrient for humans and animals for more than 35 years. Its production facilities are located in India and Singapore.

The lecithin deoiling plant in Singapore is the first in Southeast Asia with a capacity of more than 4,000 tonnes. Generous storage tank capacities and separate production lines make it possible to manufacture both GMO lecithins and IP/non-GMO lecithins in powder and granulated form in accordance with all international requirements.

LIQUID LECITHIN VERSUS DE-OILED LECITHIN

A common way of supplementing feed with phospholipids is to add liquid crude lecithin. But liquid lecithin is difficult to handle, and its concentration of active phospholipids is low. Under the name BergaPur, Berg + Schmidt supplies a phospholipid complex in the form of de-oiled lecithin. De-oiled lecithin is made by extracting the oil from liquid crude lecithin. The result is a free-flowing powder that contains only small traces of oil but the maximum possible concentration of phospholipids, about 97%. The proportion of active substances is therefore 1.6 times that of conventional raw lecithins.

One especially valuable attribute is the high percentage of the bioactive components choline, inositol, ethanolamine, linolenic acid and phosphorus (see Figure 1, page 79).

Countless studies have been made with de-oiled lecithin in order to demonstrate the wide range of positive effects on health and performance in a diversity of animal species. In 2013, fish and horses came onto the research agenda in addition to broilers.

BERGAPUR DE-OILED LECITHIN TRIAL

A large-scale practical trial with 90,000 broilers showed that the use of BergaPur resulted in better, economically relevant performance parameters.

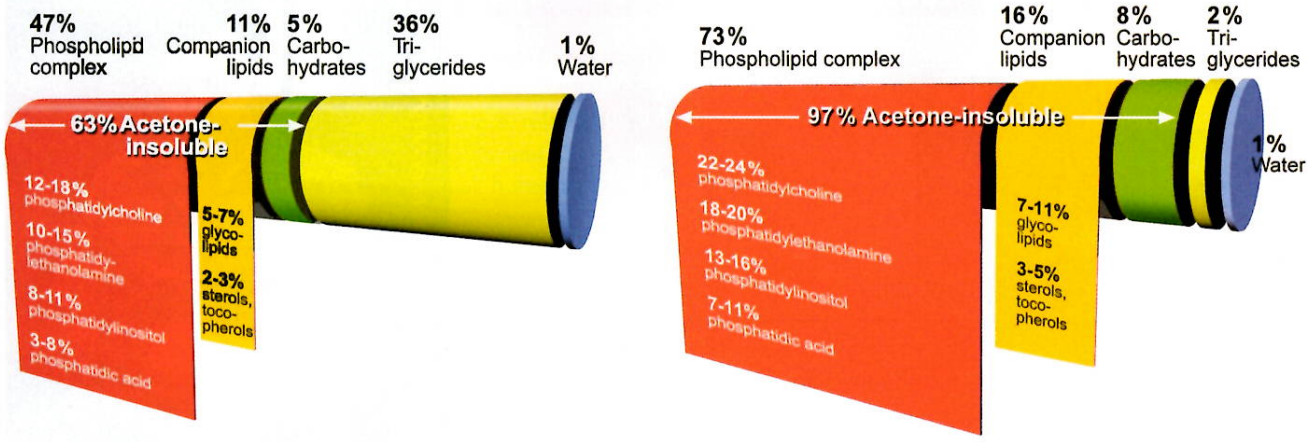
Live weight increased by 2.6%, and at the same time a reduction in feed consumption of 3.1% per kg of produced meat was observed (see Table 1, page 80). Moreover, better feed quality was achieved through pellets with less loss from abrasion and higher oil binding capacity.

The footpads of the broilers in the trial groups tended to be healthier than in the controls, because of the fact that the litter in the lecithin group was much drier over the whole trial period.

DE-OILED LECITHIN IN AQUACULTURE

In research collaboration with Aller Aqua (DK), one of the biggest European fish feed producers and a specialist in

Figure 1



trout feed, the influence of de-oiled lecithin on growth parameters in rainbow trout was investigated. On a commercial fish farm in Denmark, 27,000 trout were subjected to a growth trial over a period of 56 days. 13,600 fish each were assigned to a control group and the trial group.

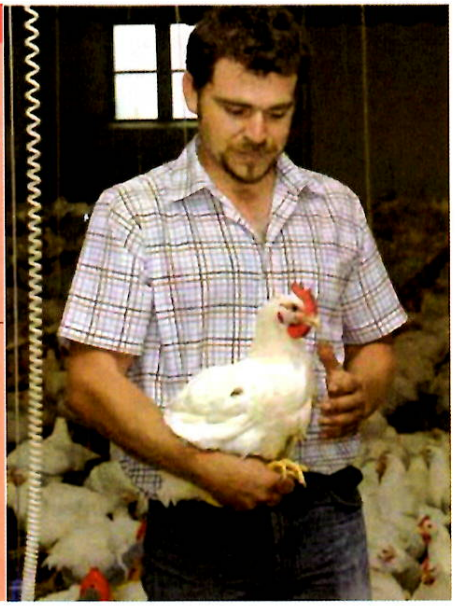
The results are clear evidence of the superiority of the trial group as compared to the control. In all the parameters, the fish that had received the added BergaPur performed 2% to 6% better than those of the control (see Figure 2, page 81).

DE-OILED LECITHIN IN HORSE NUTRITION

In horse nutrition, BergaPur supplies energy and the essential omega-6 and omega-3 fatty acids as well as linoleic and linolenic acid. It promotes vitality and health by offering active

Table 1: BergaPur De-oiled Lecithin trial results

	Control 1	Control 2	Trial 1	Trial 2
Number of birds	22,500	22,500	22,500	22,500
Start of housing, date	Jan. 13, 2013	Jan. 28, 2013	Jan. 28, 2013	Jan. 28, 2013
End of houseing, date	March 6, 2013	March 5, 2013	March 6, 2013	March 5, 2013
Fattening period, days	36	35	36	35
Weight on housing, av., g/bird	39	38	39	38
Weight at end of housing, av., g/bird	2,004	2,008	2,064	2,054
Daily live weight gain	55,8	57,4	57,5	58,7
Weight at slaughter, total, kg	85,430 (100%)		87,290 (102.2%)	
Feed quantity, total, kg	138,027 (100%)		137,127 (99.3%)	
Feed conversion, kg/kg	1.62 (100%)		1.57 (96.9%)	
Water consumption, total, liters	229,900 (100%)		210,000 (91.3%)	
Water: feed ratio	1:1.67		1:1.53	
EBI (European Broiler Index)	334		353	
European Efficiency Factor	341		360	



protection against metabolism-related disorders such as gastritis and stomach ulcers. The positive effect of lecithin on the gastrointestinal health of horses is already well known from the literature. Moreover, its emulsifying properties increase the digestibility of nutrients, especially of fats and fat-soluble vitamins.

For more information, see Page 90.

In order to confirm the initial findings, a feeding trial was carried out. In this trial, 10 high-performance sports horses were observed over a three-month period.

During this time the horses underwent strenuous training and participated in tournaments every weekend.

The development of the blood parameters relevant to muscle and liver health, clinical parameters and the performance of the horses under professional horse trainers were examined.

All the horses given BergaPur showed excellent riding qualities; they were highly motivated, supple and performed well. Their recovery after and between training units was also judged to be extremely fast.

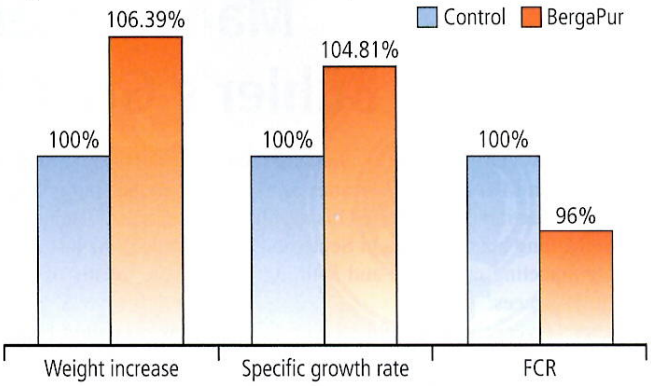
All these subjective observations by the professional horse riders were confirmed by the excellent monthly blood parameter analyses and clinical studies.

Further benefits included extremely good hair and hoof growth and an attractive, glossy coat.

CONCLUSIONS

These studies demonstrate clearly that supplementation of the feed with de-oiled lecithin benefits all animals, whether poultry, fish or horses.

Figure 2: De-oiled Lechitin in aquaculture trial



The use of BergaPur improved the relevant performance parameters such as daily weight gain, specific growth rate and feed conversion as well as the fitness of the horses. This makes it possible to increase the efficiency of production and reduce costs. WG

Sophie Slawski, who has a doctorate in animal nutrition, works for Berg + Schmidt, Hamburg, Germany. She can be reached at sslawski@berg-schmidt.de. www.berg-schmidt.de

We want to hear from you — Send comments and inquiries to worldgrain@sosland.com. For reprints of *WG* articles, e-mail reprints@sosland.com.