Saving costs with alternative

There has been a steep rise in the cost of feed in recent years, and although prices have now stabilised and somewhat subsided, the impact remains visible. However, alternative ingredients are available, which can partly replace traditional ingredients. Centralys advises on layer rations, both from an ingredient as well as from a composition point of view.

By Philippe Caldier, *France*

The French company Centralys is a subsidiary of Provimi, and forming part of a big company, they have access to extensive R&D facilities with 13 research centres worldwide. According to Michel Richet of Centralys, the laying hen division has always been a strong business for them, with around 25% market share in France. The objective is to produce premixes and additives, and to offer a wide range of advice to feed producers. Their total business accounts for more than 6 million tonnes of compound feed, of which 3,2 mt is used in France, and more than 3 mt exported.

Jean-Marc Gauzère: "Some raw materials are underestimated."

Richet makes a note of the difficult economic situation that egg producers faced in the first part of 2008. "Producers have seen the ITAVI index for layer feed climbing from 110 to 150 between May 2007 and May 2008." As a result their research concentrated on the energy content of the feed. Following the results of 11 field trials, there is an exponential increase of feed costs with the energy content of the formula, particularly above 2,600-2,700 kcal. "A laying hen consuming too much energy will be fatter, with a less persistent laying period," says Richet. He says that it is wise to take into account all the parameters having an influence on feed consumption (temperature, light, number of meals, particle size). This approach is said to be the basis of the "Optiponte" programmes (*see Box*).

Diversify formulas

Jean-Marc Gauzère of Centralys draws the attention to some relevant raw materials that are as yet not used for laying hens. "Among the energy sources, sorghum is a very good alternative to maize," he says. Sorghum, however, has some limits, including variable geographical availability, absence of pigments, and fine grinding. "Sorghum can be used without a significant drop in hens' performances," says Gauzére.

"We recommend a rate of 15-20% in the case of sorghum without tannins," he adds. Among cereals, barley has a high cellulose content (4.6% against 2.5% for wheat and 2.7% for triticale). Triticale has similar nutritional values as wheat and corn but, as barley, needs a Beta-glucanase supplement (such as Maxym). Trials done with barley and triticale have shown no drop in hen performance. Further trials made by Provimi in Poland have led to the conclusion that triticale may increase egg size.

Among protein raw materials, Provimi trials on breeding animals have shown that colza cake has no influence on live weight, consumption index or mortality at an inclusion rate of 20%. However, a drop of consumption and of performance has been observed with a 13% inclusion rate in formulas, being equivalent to the control ration with a 6.5% inclusion rate.

Optiponte feed programmes

Optiponte feed programmes of Centralys are adapted to different breeds, production types and breeding conditions. Optiponte defines strategies to optimise egg production costs: pullet raising (the first 15 days have a direct incidence on the shell quality), management of the live weight (to stimulate laying and manage the feed conversion index after 35 weeks), to sustain the laying persistence, optimise egg weight, manage feed consumption (control of the feed index at the end of the laying), and improvement of shell quality. Several programmes exist, with the most famous being Optiponte 3 having three phases: OP31 from 18-35 weeks (rapid increase of the weight, stable feed consumption), OP 32 from 35-50 weeks (maximal laying, adaptation of the feed amount to egg size and weight, maintenance of the feathers), and OP 33 from 50-75 weeks (laying persistence and shell quality). The Optiponte 5 programme consists of 5 phases with more precise nutritional supplies, while Optiponte Multi consists in a daily optimisation of the feed in relation with production parameters. All these programmes are linked with the supply of nutritional specialities and additives to maximise animal performance.

Table – Centralys' recommendations of using alternative ingredients in raw materials (%)

	Breeding		Laying	
	Chicks	Pullet	Beginning	Middle
Barley without enzyme	0-5	0-10	0-10	0-10
Barley with enzyme	0-5	0-15	0-20	0-25
Triticale without enzyme	0-5	0-15	0-15	0-15
Triticale with Maxym	0-5	0-20	0-30	0-40
Distillers grain without enzyme	0	5	7	7
Distillers grain with enzyme	5	10	10	12
Colza cake (without oil)	3	7	5	7
Colza cake expeller	0	5	6	8
Sunflower cake	0-10	0-15	0-15	0-15
Bran and middlings	0-5	0-10	0-5	0-7
Alfalfa	0-2	0-3	0-3	0-5

Alban Llorca: "Less losses with crumb feed."

Michel Richet: "Optiponte takes into account everything regarding feed, from the pullet to the end of the laying hen's life."

Rich in proteins and phosphor, distillers' grains should be more available in the future. However, these have some limitations (variable protein content, low amino acid digestibility) and need to be used with care. Following recent trials made with distillers' grains in laying hens, this can be included in formulas without affecting performance, even at 25% inclusion. Other raw materials such as bran and middlings, sunflower cake or alfalfa can also be used in formulas (*see Table*). "Our trials show that some raw materials are still underestimated," concludes Gauzère, who adds "these raw materials could diversify the profile of the formulas while decreasing costs in some cases."

Crumb against mash feed

When it comes to feed technology, Alban Llorca mentions the new Granutech tool of Centralys to measure granular composition of laying hen mashes. "Particle size is a very important daily concern for production," he says. Granutech gives feed producers two parameters: the average diameter (in µm) giving an idea on the average size of the particles, and the homogeneity level. Trials by Centralys in 2008 to compare crude mash, treated mash (85°C during 2 min) and crumbs were conducted between 29 and 37 laying weeks on 546 hens and with formulas having 20% wheat and 30% maize. The first results after 7 weeks of trials provided evidence of the advantages of the crumb feed: less losses (less sorting out of the feed), a significant increase of the average egg weight (60.06 g with crumbs, 59.53 g with treated mash and 59.35 g with crude mash), less daily feed consumption (117.6 g with crumbs, 119.1 g with treated mash and 118.7 g with crude mash), and better feed conversion (kg feed/kg eggs): 2.14 for crumbs, 2.187 for treated mash and 2.153 for crude mash. "Crumb also helps to prevent salmonella contaminations," adds Llorca, who goes on to explain that Centralys has just started a research programme with the INRA institute in France regarding additives that inhibit salmonella. The goal of this research is to better understand the inhibition mechanisms of salmonella with the help of the latest microbiology technologies, to study the differences between various types of salmonella, and to test new additives, either separate or in combination in different feeds. "We are about to develop more and more powerful formulas with clear aims, concludes Michel Richet: destroy salmonella and enterobacteria in feed, and limit their development." ■