

Challenges in 100 % organic feeding of poultry.

It is a great challenge to put together balanced 100% organic feeds for poultry. Product Manager Niels Juel Nielsen, Danish Agro describes the challenges and possible solutions. This article was written before the EU Commission decided to postpone the date of transition to 100% organic feeding.

Challenges in feeding 100 % organic feed to poultry.

The International Network for 100 % organic feeding, Product Manager, Niels Juel Nielsen, Danish Agro

EU legislation stipulates 100 % organic feeding to monogastrics starting January 1. 2012. This give rise to some concern in the feeding of poultry, both for layers and broilers. The main concern is the supply of balanced protein, which will become more difficult.

The modern genotypes being used in organic poultry production are bred to produce eggs and meat with high efficiency meaning high numbers of eggs, potential rapid growth and good feed conversion. This calls for feed with the right balance of nutrients; energy and protein being the most important.

A lot of research has been carried out to establish an ideal protein recommendation for most production animals. In table 1 these are given for layers in early lay and for young broilers compared to what is possible with the current situation where 5 % conventional feedstuffs are allowed and also with 100 % organic feed.

Nutrient	Layers early lay			Broiler starterfeed		
	Recommended	Achiveable 95 % organic	Achiveable 100 % organic	Recommended	Achiveable 95 % organic	Achiveable 100 % organic
Protein %	18	18,5	19,2	20	20,6	21,8
Lysin Index	100	104	120	100	100	117
Methionine Index	50	39	39	41	35	36
Met+Cys Index	91	77	77	74	71	71
Threonine Index	73	82	89	66	76	82
Thryptofane Index	22	26	27	16	24	25

Table 1: Protein and amino acid relations in organic layer and broiler feed.

Table 1 show that it is not possible to fulfill the recommended level for either methionine or the sum of methionine and cystine in neither layer nor broiler feed. The change to 100 % organic feed will make this even more critical. If we choose to maintain the current level of the sulphuric aminoacids, as I have done in this example, the levels of crude protein and other amioacids as lysine will rise to undesirable levels. If we choose to keep crude protein on the same level, we will have to accept a drop in sulphuric aminos acids to even lower levels than now, which are to low already.

It is a fact that methionine is the first limiting aminoacid in all poultry feed, not only for growth and eggproduction, but also for feathering and other traits. An imbalanced aminoacid profile is known to be a risk in various welfare problems such as featherpecking and cannibalism, but also will result in less than perfect nitrogen-retention giving rise to an environmental issue.

So we must look for feed ingredients with a high content of methionin. One way of expressing this is the methionin to lysine ratio, which for laying hens ideally should be around 0.5 in the complete feed. Looking through different tables, it is difficult to find of lot of ingredients, which meet this demand. I have found the following: Corn gluten, sesame expeller, corn, sunflower expeller, hemp expeller and some alga meal.

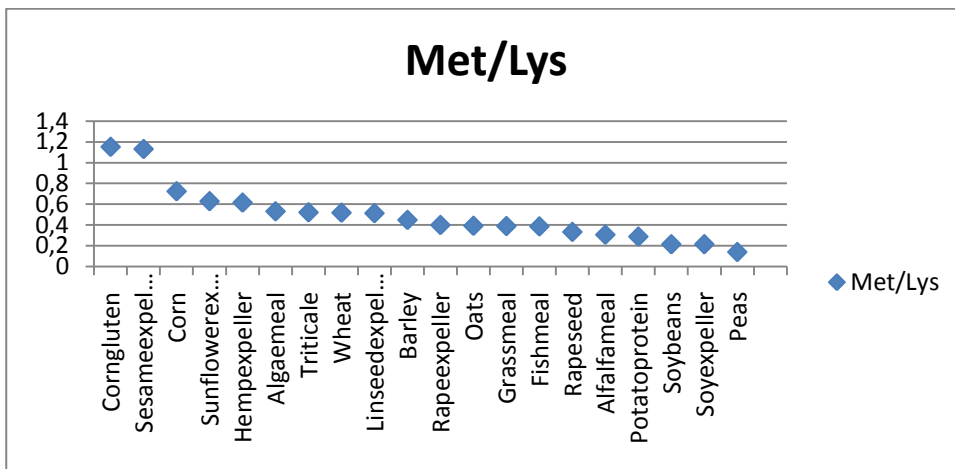


Figure1. The met/lys ration in some feed ingredients.

Corngluten is being used at the moment, but in a conventional form. There is no or a very small production of organic corngluten. This product will be missed, as it not only supply protein with a beneficial amino acid profile, but also contains a rather high level of yellow xanthophylls, which in some markets are desirable in layer feed, as it provides a nice yolk colour.

Sesame expellers are of some interest, but to my knowledge, there is only a limited supply of this product and mycotoxins is said to be a problem.

Corn is off course of some interest. The main problem is the supply, as it is impossible to grow corn to maturity in the Nordic countries. Calculation shows that corn will become more interesting in the future than it is now.

Sunflower expellers are currently in use, but the supply is limited and the high crude fiber content also limits the use of sunflower expellers.

Hemp and Algae products might be of some interest, as they both contain relative high levels of methionine.

Time is running short, and I fear we will face a period where we will have to accept feed with inadequate supply of aminoacids to layers in early production and also broilers, which off course will result in lower productions results with economical issues for the poultry producers. Far more frightful is the risk of welfare problems, as better welfare is one of the major reasons to choose organic from a consumer's point of view.

The solution is not easy to find, but from my desk as a nutritionist working in a feed company, I could make the following wishes.

Fishmeal is still allowed as a non-agricultural product.

An organic production of corn gluten.

A prolonged transition time.

The development of an organic protein source with high methionine level.

The allowance of industrial produced aminoacids (political decision – not likely).

New animals better suited to produce under organic regime. (takes time and money)

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