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Sustainable options for producing home-grown organic poultry feed **Organic principles place a strong emphasis on maximising home-grown or local feed from the farm, but this can be difficult for poultry producers when creating rations for their stock.**

Poultry rations are heavily dependent on imported ingredients, but fluctuations in global markets leave producers open to financial uncertainty and potentially high costs. Also, the draft of the new EU Organic Regulation include proposals to significantly increase the portion of feed that must be sourced from the farm and/or the local 'region'.

Therefore, developing the supply of home-grown or local organic ingredients is becoming increasingly important. Tony Little and Jason Gittins, of ADAS, consider some of the options identified by the Better Organic Business Links (BOBL) project, managed by Organic Centre Wales (2009 – 2015):

Dehulling protein crops

Removing the hulls from home-grown protein crops such as peas and beans can improve their quality by removing 'anti-nutritionals' which are concentrated in the seed hulls, and increasing the concentration of key nutrients. The concentration of two important amino acids can be increased by dehulling. Lysine content, for example, can be increased by 13% in peas and 31% in beans, and methionine by 20% in peas and 37% in beans.

In terms of costs and benefits, depending on the ration, the improved nutritional value associated with dehulling can add £10 - £32 to the value of a tonne of peas, and £16 - £103 for beans to home-grown crops in a 'least cost' ration formulation. At current commodity prices though, this only represents marginal benefits in most rations, taking dehulling costs of £19/t into account. The exceptions are broiler finishing and turkey grower diets where there can be a significant gain.

However, the significance of dehulling is more in insulating producers from potential rises in feed prices in the future, and in increasing the usage of home-produced proteins than making significant cost savings in the here and now. That said, in the short term, the yield penalty associated with removing the hulls, which make up 15-20% of the harvested crop, can be redressed by developing markets for hulls, for example ruminant feed, bedding or biomass. This would strengthen the economic case for dehulling considerably.

Home-grown sunflowers

From a poultry feed perspective, sunflower seeds are at their most nutritious before they are fully ripe, removing the necessity for the long hot summers normally associated with oil production. On-farm trials, funded by Farming Connect, at Capestone Organic Poultry in Pembrokeshire during 2013 indicated that Wales could potentially grow crops that are extremely high in energy and, in combination with a high protein ingredient such as dehulled beans, could make an important contribution to the ration.



It can, however, be a hit and miss affair! In 2013, for instance, the spring was very late and the crops never really caught up. Producers will need to have a fall back plan for such eventualities, such as taking it as a whole crop silage for ruminant feed. There are also post-harvest issues to be considered. The high moisture content makes crimping essential, and the high oil levels mean the grain will not keep for more than a few months.

Naked oats

Naked oats have strong potential as a poultry feed, because of their high oil content and proportionately higher levels of methionine and lysine, which are limited in many organic diets. Many varieties were bred at IBERS under Welsh conditions and the BOBL project showed that farms across Wales can produce quality crops. Strong networks of arable and poultry producers, trading directly, have the potential to significantly increase the proportion of home-grown cereals in poultry rations.

In summary

All of these approaches, when taken together, have the potential to significantly increase the supply of home-grown, high quality organic feed in Wales, but all have their challenges. Some are technical, others are supply chain related, such as access to dehulling equipment, on-farm mixing and milling facilities and crimpers. But as the problems of accessing quality, locally produced organic poultry feed become more acute, they will have an increasingly important part to play.