

Dairy Cow nutrition and feeding

Some messages from the Institute of Organic Training and Advice Dairy Cow Nutrition research review workshop in November 2006.

The review of all the organic dairy cow nutrition research, which was undertaken by Dr. Mike Tame, is available to IOTA members on the website www.organicadvice.or.uk

Summary of discussions

- Most member of the group agreed that organic farmers generally made poor quality silage. There was then a discussion of why this should be so. Suggested that organic farmers often only made one cut and tended to put quantity before quality. It was suggested that instead of making a rather late large cut they should make a smaller earlier cut to give a higher energy but lower protein followed by a higher protein second cut or a cut of whole crop cereal/protein crop.
- Questions were asked as to the relative costs of these different options and it was agreed that this could be done as a desktop study possibly allied to benchmarking.
- However, there was also a agreement between several of those who advise on farms that either the current silage analyses underestimate the protein content of grass/clover silages and swards or the FiM feeding programme overestimates the needs of the organic dairy cow.
- As a result, we felt it would be useful to compare FiM predictions with what actually works in the field.
- There followed a discussion of whole crop silages based around John Bax' observations. It was generally felt that whole crop silages fed better than they analysed, particularly the higher protein versions such as cereals with lupins or better oats or barley with vetches.
- Need a better description of energy and protein content of whole crop silages as well as a better description of degradation rates. Also felt we need to re-evaluate the description of grass/clover forages.
- There was a brief discussion of the importance of dry cow management and how a protocol could be developed for organic dairy cows. It was felt that this was a very important area and that developing a strategy was important. This included some discussion of trace mineral level and it was suggested by some that there was already sufficient information in this area though this was not accepted by all. No conclusion was reached.
- There was also a brief discussion on the importance of breed of cow though no conclusions were reached.

Key points from John Bax's presentation:

Feed the rumen not the cow.

Acidosis is a very widespread problem (22% newly calved cows) causing clinical and sub clinical disease, particularly mastitis, infertility and lameness and inefficient feed utilisation.

Provided the form and type of ingredients is correct then very much higher than predicted levels of performance are achievable. Average dietary protein levels below 16% may be adequate.

Do not rely only on grass/clover silage; a mix of forages is important, Wholecrop at a minimum of 25% of ration is needed. Cereal and legume wholecrop is particularly appropriate such as a 45% DM lupin and triticale or pea and barley mix. Straw should not be needed if the rest of the ration is correct.

Beware of excessively acid silage – anything below pH 4 is likely to require buffering – probiotics may be a better solution than Bicarb

Chop length is crucial to ensure sufficient long fibre. 20cm is ideal for the rumen (average at the trough), in order to ensure sufficient cudging and saliva to buffer pH. Some variability in chop length is good. Beware of feed mixers that chop the mix – if necessary remove paddles/choppers. Fodder beet, with its slowly fermentable sugars, is an excellent feed but do not chop too fine – quartering is sufficient.

Forage palatability is crucial. There must be an obsession with silage hygiene and soil and manure contamination must be eliminated. Dry matter should be at least 30 %, (though too dry and there may be high wastage – an additive will help)

High quality and palatable forage with sufficient structural fibre and sufficient energy supply will ensure optimum protein utilisation.

TMR feeding is the best feed system and parlour feeding the worst for the rumen.

Be prepared to buffer with wholecrop throughout the grazing season, particularly during periods when grazed forage is too high in protein – clover swards are often over 20% protein after June.

Conserving leys by more frequent cutting is likely to be worthwhile e.g. plan on first cut at earliest sign of heading and plan on 3 cuts during a season. Reliance on a major first cut is likely to result in excessively mature, poor palatability, low protein and low energy silage. Impossible to balance. Plan on extended grazing, particularly in the autumn. Good tracks are essential.

Cereals and pulses must not be over processed; some whole grains in dung are acceptable, crimping works well.

Fat: protein ratio is more significant than one level or the other. Ratio max of 1.4:1, if above then metabolic problems

Mike Tame and Mark Measures