

# Devenish Diary

Issue No. 12

news, views, articles & updates

Dear Reader....

Welcome to the latest issue of the Devenish Diary. You will notice the continuing emphasis on innovation and the interesting ideas and challenges that represent opportunity for our industry. Indeed in the midst of the financial and other turbulence of the last year we continue to be struck by the sheer number and quality of the ideas waiting to be adopted. Perversely all the challenges posed by our current business environment make it easy to lose sight of the opportunities, when in fact they were never more required; good ideas and good people to work with them.

We hope you find some of the material of value. Thank you all for your comments and suggestions on previous issues and we look forward to your response on this occasion. We also look forward to continuing to work with you in the business, and in developing the ideas and opportunities that there are.



Owen Brennan

## WEDDING BELLS AT DEVENISH!!

Devenish Nutrition are very pleased to announce the recent marriage of Dr Violet Beattie to Mr Trevor Wylie.

Violet has been with Devenish over 7 years and her expertise and experience within the animal research industry has been an invaluable asset to the Devenish pig team.



We would like to take this opportunity, as I'm sure many of our readers will, to wish Violet & Trevor every happiness for their future together.

## GETTING THE SUMS RIGHT MAY MEAN LESS LAND REQUIREMENTS

-Dr Marian Scott-

Part and parcel of the nitrates directive is restriction of livestock manure application to the land. The current figure is **170 kgN/ha**. To equate this back to hectares of land required for a specific pig unit, certain assumptions must be made. DEFRA have proposed that the standard total N excretion of finishing pigs is **10.5kg/pig place**. However, research conducted by McCann *et al.*, (2007) at AFBI, Hillsborough, sponsored by DARD, John Thompson & Son

and Devenish Nutrition evaluated the effect of reducing the CP level of diets containing two levels of lysine in diets for finishing pigs. N excretion per pig place was determined under the same conditions as the figures published by DEFRA (2002) assuming pigs would be 84 days in the finishing stage and operating at 90% occupancy. The research concluded that N excretion per pig place decreased with decreasing CP level resulting in values lower than proposed by DEFRA (2002).

The N excretion values determined ranged from **7.5 to 9.15kg/pig place** for diets containing 16.2 to 18.8% CP respectively, in comparison to the 10.5kg/pig place proposed by DEFRA (2002). The observed N excretions suggest that the N loss as ammonium and nitrates will be reduced in the manure produced.

Dietary Crude Protein (%)	McCann <i>et al.</i> , 2007 (kg/pig place)	DEFRA (2002) (kg/pig place)
16.2	7.48	10.5
17.5	8.48	10.5
18.8	9.15	10.5

These findings equate to;

- 679 hectares required for a 500-sow unit (17.5% CP) according to DEFRA 2002.
- 548 hectares required for a 500-sow unit (17.5% CP) according to McCann *et al.*, 2007
- A difference of **131 hectares**.

Regardless of dietary crude protein content, N excretion/finishing pig place was considerably less in the research conducted by McCann *et al.*, 2007 than the figures proposed by DEFRA. This emphasises the importance of using correctly formulated low protein diets and published scientific figures when calculating land requirements.



# Get Them Off to a Flying Start with a Balanced Nutrition Programme - Sam Smyth

The first few days of the modern game bird's life represents a critical period when determining overall lifetime health and performance. This is a period of extreme physiological and functional development in the gut. At hatch, the day old poult has a relatively immature gut, which must quickly adapt from a lipid rich yolk-based nutrition to a carbohydrate rich feed-based diet. The speed at which physical and functional development of the gut occurs is critical in determining the poult's lifelong ability to digest and utilise nutrients, thus allowing its full potential to be expressed. Research has shown that one of the most important factors influencing early gut development is early access to highly digestible feed and clean water post-hatch. In the young poult, the most obvious impact of delayed access to feed and water is the risk of "starve outs", the second most likely impact is weight loss due to dehydration. Studies have shown that this weight loss increases rapidly the longer the birds are fasted from hatch. Any early loss in weight due to delayed feed and water access is accentuated through the rest of the poult's growing life.

Trials and commercial application have shown GameGuard has potential to reduce the incidence and impact of enteric challenges and therefore can be successfully used as part of an overall gut health package. The components of Game Guard are encapsulated for improved stability and function in the lower GIT (Gastro Intestinal Tract), where they will prove most beneficial. GameGuard also contains a source of Omega 3s which have a key role in the immune, nervous, cardiovascular and reproductive systems; Omega 3's can also help reduce inflammation and the effects of stress, help improve immunity to disease and prevent and aid recovery from gut infection.

Overall when Matan and GameGuard are used in combination as part of a balanced nutrition programme it's a powerful combination, especially for the young poult. Over last season and into this current season, field results and feedback from game keepers has been exceptionally positive, especially in the areas of reduced early mortality due to starve outs, ease of getting difficult birds such as Grey Partridge started on feed, better gut health and better overall quality of birds reared. Figure 1 summarises some of the field trials from last season.

**MATAN** is a high protein 'appetite generator' with a high Glycaemic Index which encourages and helps establish early feed intake. It also facilitates a more synchronised/phased uptake of amino acids and energy, thus helping to promote early muscle growth. This is an essential part of early bird nutrition, energy and maintain blood sugar levels during. When used in early game bird diets we have to starve outs and as they continue to

**GAMEGUARD** is a natural product aimed contains a mixture of different chain length of functional effects for the game bird. two game seasons have shown GameGuard bacterial flora, gut development, mineral in improved digestion and absorption of



It is well documented that delayed feed access reduces overall gut weight. Intestinal enzyme activity is decreased if feed access is delayed, thus reducing digestive efficiency. The gut surface area available for nutrient absorption is also reduced as fasting decreases villi height and crypt depth. More recently it has also been shown that satellite cell development is impaired which negatively affects breast muscle development. Therefore, a balanced nutrition programme targeted specifically at early feed intake, gut health and development will have merit when rearing game birds and its for that reason we have introduced specific products such as Matan, and GameGuard to the Game Feed market



and being able to provide a readily available source of metabolic stress in young poult is a major advantage. consistently seen reduced loss of young poult due grow, we see stronger and fitter birds.

at promoting intestinal health and integrity. It fatty acids and omega 3s, and provides a range Trials and commercial application over the last can play a key role in areas such as regulation of absorption, immune stimulation and assisting nutrients in the feed.

Figure 1. Summary of field trials 2008

	Feed with Matan and GameGuard	Commerical Game Feed
Mortality to week 1 in Pheasants	1%	4%
Mortality to week 7 in Pheasants	3%	11%
Mortality to week 3 in Partridge	2.5%	4.2%
Mortality to week 16 in Partridge	5%	10%

For further information on any of the above products, or any other product that are suitable for Game Feeds or nutritional guidance for game birds, please contact a member of the poultry department at Devenish Nutrition Ltd, 96 Duncrue St, Belfast, BT3 9AR. Tel: 02890755566 Email: [info@devenishnutrition.com](mailto:info@devenishnutrition.com) Website: [www.devenishnutrition.com](http://www.devenishnutrition.com)



*Feeding for healthy growth....*

**-Jane Hurley-**

At this time of year with the breeding and foaling season in full flow it is relevant to focus on feeding the young growing horse. Feeding a growing horse can be a complex task where the owner must provide adequate water, minerals, salt, protein and a large number of other nutrients.



The nutritional requirements usually cannot be met by forage alone. Cereal grains and forages may not provide the correct calcium:phosphorous ratio, trace minerals and essential amino acids for proper bone development. These nutrients can be provided to the growing horse through a concentrate feed or supplement.

Feeding foals prior to weaning is advisable as it will teach them to eat the feed on which they will survive once they are weaned and help prevent post weaning slumps in growth. Nursing foals should be introduced to concentrates when they are 1-2 months of age and as weanlings can be fed the same type of concentrate as when they are nursing.

The growing horse should be carefully monitored for signs of excessive weight gain or loss and DOD (developmental orthopaedic disease). Genetics, nutrition and exercise all pay a role in the incidence of DOD in horses.

At Devenish we have developed a product called **EquineGro+** to provide an ideal combination of minerals, trace elements and essential amino acids for the growing horse. Mineral imbalances have been well documented to contribute to and cause DOD and an adequate supply of minerals' zinc, copper and manganese are crucial to normal skeletal development..

Absorption of ingested trace minerals is an important factor to consider and organic bound trace minerals (chelated) are believed to be more bio-available in the horse's gut than inorganic minerals.

Lysine and Methionine are essential amino acids that are vital components of the foal's protein requirements. They are regarded as 'first-limiting' amino acids for growth therefore an inadequate supply could retard growth and development.

**EquineGro+** supplement works to boost the mineral balance of the horse and helps to ensure the minerals are deposited in the developing skeleton tissue to contribute towards the growth of sturdy frame. **Equine Gro+** utilises a broad spectrum of organic chelated essential minerals plus calcium and magnesium

derived from aquatic algae. It combines these with bio-available essential amino acids, lysine and methionine, to promote muscle growth. The buffering capacity of **EquineGro+** may also help to reduce the incidence of gastric ulcers and stomach inflammation in the growing horse.

For more information on this product or on any of our EquiCare range of products please contact Jane Hurley, Equine Nutritionist, Devenish Nutrition Ltd Tel:00353 (0) 86 8097376.

## Devenish Have a Strong Research Presence at UK Scientific Conferences -Dr Violet Beattie-

In April of this year Violet Beattie and Marian Scott attended the British Society of Animal Science and the World Poultry Science Association with Elizabeth McCann & Elizabeth Magowan from the Agri-Food & BioSciences Institute at Hillsborough. Between the four of them they presented six papers from combined research carried out by Devenish and the Agri Food & BioSciences Institute. Topics covered were glycerol in finishing pigs, variation in growing pigs, DeviGuard® for growing pigs and using NIRS to determine diet quality.

In the poultry section the topics covered were feed additives, wheat variety and feed form on laying hen performance, and method/duration of wheat storage on broiler performance.

Devenish have a strong R & D focus and continue to work with the Agri Food & BioSciences Institute and Queens University to carry out and disseminate scientific research for the good of the agriculture industry.



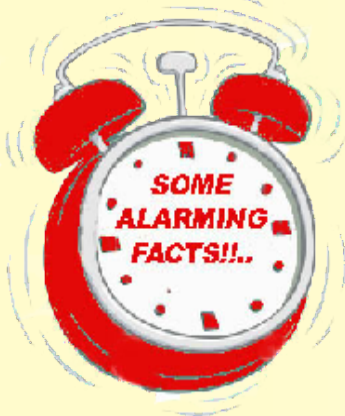
Dr Marian Scott (Devenish), Dr Elizabeth Magowan (AFBI), Dr Violet Beattie (Devenish), and Dr Elizabeth McCann (AFBI)



# SURVIVAL OF THE FITTEST-

## THE MEAT AND MILK ADVANTAGE - *Dr Marian Scott*

Globally, demand for animal derived products are growing rapidly due to numerous factors such as population growth, urbanisation and rising incomes. However, contribution of red meat and milk within the UK diet has been decreasing for many years due to SFA (saturated fatty acid) consumption and the perception of ruminant-derived foods being a major contributor to chronic diseases. Poultry meat consumption has increased significantly due to the perceived health benefits. Even with the increasing awareness of factors such as SFAs we are living in an era of chronic disease due to obesity and an aging population.



- ☐ **Health care bills within the UK are approximately €300/person/annum in comparison to €200 within the EU**
- ☐ **Currently 30% of men and 25% of women are obese with a prediction that 50% of the population will be clinically obese by 2050**
- ☐ **Predictions also state that only 30% of the population will reach 65 years of age by 2050**

There are many factors that contribute to this epidemic such as a lack of physical activity and of course convenience food. One convenience product that has received huge amounts of negative publicity is chicken nuggets. However, consumption still remains strong and even with many campaigns there is STILL a perception that they 'must' contain some of the perceived benefits of chicken.

Chicken is a low fat meat, a skinless breast only contains 3% fat, however; nuggets can contain more than 20% fat (economy brand) with standard brand nuggets containing 13% fat. A huge number of similar products exist. Reliance on these products and the ever rapidly decreasing cooking from fresh contributes substantially to the epidemic currently sweeping the nation.

It is essential that risks and benefits associated with different foods are clearly understood and that media hype be dissected so that the facts prevail. Campaigns such as "Not Milk" are claiming that milk is a poison, not a health food and with the increasing popularity of the "Atkins" diet, evidence is mounting up against the consumption of meat.



D.I. Givens recently presented a very interesting paper at the BSAS conference 2009 reviewing the health issues associated with meat and milk consumption. D.I. Givens (Givens, 2009) outlined the results of a 15 study meta-analysis (Elwood *et al.*, 2008) concluding that the relative risks of stroke or heart disease in subjects with high milk/dairy consumption was not significantly elevated relative to those with low consumption. In fact, the meta-analysis provided evidence of an overall survival advantage from the consumption of milk with respect to total deaths attributable to life threatening diseases within the UK (vascular/diabetes/cancer).

Manipulating fat composition of ruminant-derived foods holds considerable potential as a means of reducing SFA and providing health benefits. The use of *cis*-MUFA oils in dairy cow diets has the potential to reduce SFAs in milk fat from 70% to 55-60%. If applied to all UK milk this would reduce SFA entry into the food chain by 90,000 tonnes per year providing environmental benefits through reduction in methane production (Givens, 2009). A recent cost benefit analysis in the Lippene project of reducing SFA intake through dairy cow nutrition indicates a positive outcome through reduced population health costs within 5 years (Givens, 2009).



Universally, it is agreed that many of the nutrients found in meat and milk (iron, vit D, vit A and potassium) are good for your body and should be present in a healthy balanced diet. The new evidence suggesting milk consumption may have a survival advantage with respect to life threatening diseases within the UK should be the cherry on top!



**For further information on any of the articles in this edition please contact:**  
**Devenish Nutrition Ltd**  
 96 Duncrue Street, BELFAST. BT3 9AR  
 Tel: 02890 755 566 Fax: 02890 748 820  
[www.devenishnutrition.com](http://www.devenishnutrition.com)  
[info@devenishnutrition.com](mailto:info@devenishnutrition.com)

