



news from advanced nutrition Autumn 2018

Adapting to market changes

Welcome to the Autumn 2018 issue of our 360 Newsletter. We're all getting better at, and are now trying to adapt to, the current market volatility which seems to be a constant, whether milk price, feed raw materials or other farm inputs.

Living in the UK, we've always been used to the weather volatility and extremities. However, couple these two things together and you end up with a situation where driving efficiencies has never been so key and relevant within all of our businesses.

Change seems to be a constant at the moment and can be, or will be, the key to survival in challenging times. As a business, we have also had to adapt to the current market and the changes within the industry.

Hence the reason why this month we will be launching a new division of Advanced Nutrition called 'Advanced Robot'. This division has been set up for two main reasons.

Firstly is the current and anticipated growth within the automated milking systems, (AMS), sector over the coming years.

Secondly, due to the vast majority of phone enquiries we are now receiving from current units, and new planned Robotic units, looking for help and advice in driving on farm efficiencies, whether that be in nutrition, health or the general management of their current or anticipated Robotic System.

Our expertise within this field has been proven over the years where we have worked in partnership with our current customers in driving efficiencies, and helping them to achieve their individual goals.

Our team will talk more about this within this newsletter and I hope you will find this interesting and informative.

As always, if you are looking for any independent advice in the coming months to help promote productivity and efficiencies, please don't hesitate to contact us.

Grant Spittal, Commercial Director



**First Step for
Advanced Robot**



**Maximise forage
fibre with MaxFiber**



**Disappearing
Forage**



01524 263 139
www.arn-ltd.com
office@arn-ltd.com



First step for Advanced Robot

This autumn Advanced Nutrition will launch the UK's first dedicated robotic milking division to better service dairy farmers in this rapidly growing sector.

Advanced Robot will build upon over 10 years of experience with robotic milking and offer farmers a tailored 3 point programme to encompass everything from robot settings, to nutrition, to health and shed design.

It is estimated that 8% of UK farms already use robotic milking but they also constitute 35% of new milking systems being purchased. In Holland, 40% of dairy farms are automated, with some Scandinavian countries as high as 50%.

Managing a farm with robotics requires a different approach from conventional milking. We have found over the years the key to success is to begin by correctly balancing 3 key areas like points on a triangle – cow nutrition, cow health and robot settings. Any one of these areas taken in isolation can potentially knock the others out of sync.

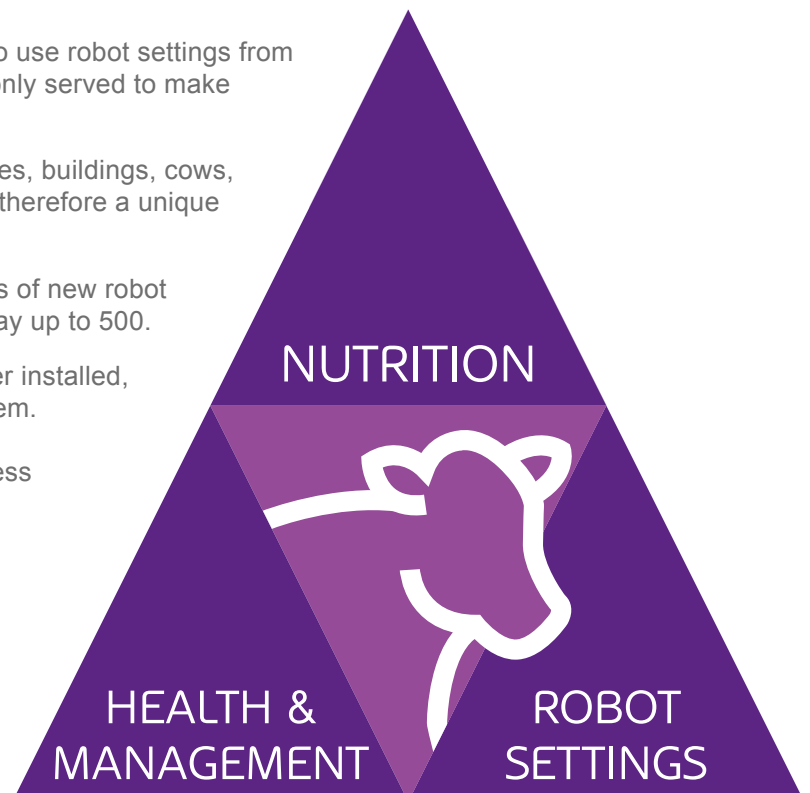
We regularly find dairy farmers who have tried to use robot settings from another farm to solve issues but often this has only served to make the problems worse.

Each farm is unique to itself, with different forages, buildings, cows, production expectations and health challenges; therefore a unique action plan is required to deliver results.

As a company, we have been involved in dozens of new robot start-ups over the years, from 50 cows all the way up to 500.

An increasing number of larger herds have either installed, or are in the process of installing, a robotic system.

Regardless of herd size, our principles for success never change.



Healthy cows are paramount with a particular emphasis on healthy feet. Not only do lame cows eat less often, but they also visit the robot less, which affects the average number of milking's, and therefore milk yield as well as fertility. For this reason, we use Zinpro's FirstStep® programme – a system for the assessment and prevention of lameness in dairy cows.

Getting the nutritional balance right on an AMS unit is something we have worked hard to perfect over the past decade. As on any farm there are basic fundamental steps which need to be followed. Balancing the diet both in and out of robot is critical to producing profitable milk and ensuring optimum visits.



On most farms this balance needs to be struck between the mixed ration and in parlour feed but on others there may also be an out of parlour feed option or grazing gates. Again, regardless of what's available, the Advanced Robot principles remain the same to ensure a healthy rumen and therefore a healthy cow, supported by a range of specialist products.

Different farm situations, diets, cows, and yield aspirations will determine how the robots are set up for each individual farm. Settings which work well on one unit will not necessarily work on another unit; therefore a tailored approach is required.

As a general rule, a robotic system must beat a 3 x per day milking herd; therefore average visits of 3 or greater should be targeted with a milk increase of minimum 10% to cover the investment cost versus a conventional parlour. This should easily be achieved from less standing time (during milking), higher dry matter intakes and more milking's per cow, especially in early lactation.

We believe that by taking a total farm, and having a complete understanding of the balance between cow health, nutrition and robot settings will provide the key to unlocking true potential and profitability on AMS farms.



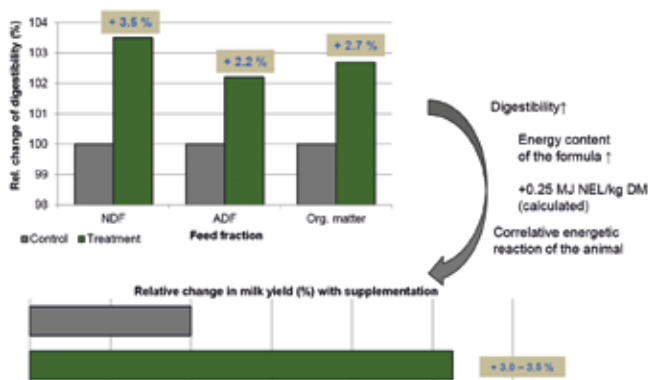
For more information on advanced robots please contact ARN on t: 01524 263 139 / e: office@arn-ltd.com

Maximise forage fibre with MaxFiber

Sean Kennedy explains that MaxFiber is an innovative enzyme fermentation product. It enriches the conversion of the fibre nutrient in the rumen of dairy cows.

MaxFiber promotes the digestion of various carbohydrate fractions in the rumen, especially starches and vegetable fibre. The consumption and turnover of nutrients in the feed are better developed, as a result of increased rumen microbial fermentation performance.

Base feeds need to be broken down in the rumen. This is exactly where MaxFiber provides its advantages. MaxFiber promotes the breaking down of the fibre fractions and cell membrane in base feeds much more efficiently. This makes them accessible for additional digestion by ruminal microbes. MaxFiber makes further absorption of nutrients more manageable.



By increasing the digestibility of fibre fractions energy availability was increased and milk yield was greater by 3.0-3.5 % versus the control

The foundation of lucrative milk production is performance-focused feeding. Depending on the forage quality utilised, the digestibility of crude fibre differs significantly in the total ration. When assessed against other crude nutrients in the diet, fibre fractions are less digestible and consequently less accessible to rumen microbes. MaxFiber boosts the obtainability of fibre nutrients.

MaxFiber supplies ruminal microbes with greater surfaces on which to act. This results in above

average digestibility of overall rations (+2-2.5%). In turn, this permits animals to make more effective use of starch fractions and fibre (NDF and ADF). Therefore, MaxFiber makes nutrients accessible that would otherwise either take significantly longer to be digested, or leave the rumen undigested.

The constitution of the carbohydrates, cellulose and hemicellulose (shortened to NDF/ADF content), make up the greatest portion of the cell wall. This can only be digested to a particular point by the ruminant bacteria. Therefore, fibre digestion plays an important part in feeding these bugs.

MaxFiber is an exclusive crude protein rich product. Its enzymes are acquired by way of solid state fermentation of defined fungus strains aimed at particular forage diets. Therefore, MaxFiber increases the digestion and fermentation of assorted carbohydrate fractions within the rumen. This continuously increases the nutrient medium for rumen bacteria.

MaxFiber confidently motivates rumen fibre fermentation. It promotes degradation of crude fibre and other structural elements alongside starch fractions. The consequent enhancement of fibre digestion, higher dry matter and thus increased energy absorption are predictable. This results in increased feed efficiency.

MaxFiber encourages the prompt fermentation of fibre fractions and therefore encourages powerful activity of fibre-digesting microbes. The speed of feed passing through the rumen increases. This means that there is more space for new fodder more rapidly. The cow absorbs more nutrients, feed intake is enhanced and performance increases.

In short, MaxFiber enhances feed effectiveness by refining the transformation of nutrients in the rumen. MaxFiber supports ruminal microbes in breaking down cell membranes and intensifies their effectiveness resulting in increased milk yield and milk quality.



For more information on MaxFiber contact Sean Kennedy on t: 07983 813521 / e: sean@arn-ltd.com

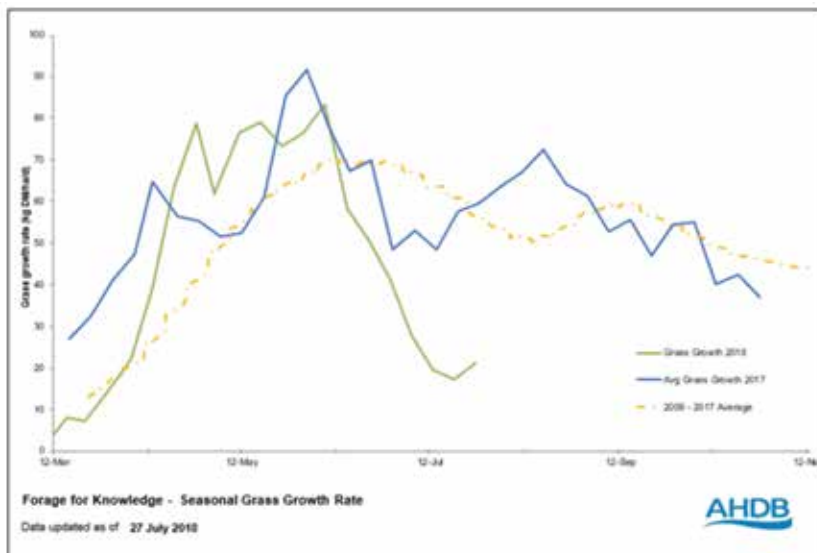
Disappearing Forage



The drought is certainly biting deep into forage reserves, as highlighted by Mark Gorst. Whether it is intended silage crops that are being grazed or grass already harvested being used to buffer cows, the situation is getting serious.

The growing season is now getting shorter to the point where we will be better advised in taking whatever grass cover the fields have by 14th of August and hoping for one last sensible 5-6t crop before winter arrives. Grass will have the potential to grow at 30% ahead of the average for August-September, upwards of 85kg DM/ha if we get rain.

We must be proactive - calculate a forage budget for winter and compare that to forage tonnes clamped, can we buy standing crops going forward? These appear to be very expensive; most moist feeds are now off the market so dry feeds may be the next best forage extender to lower grass demand. Every 1kg of concentrate will lower grass demand by 0.88kg DM daily.



One solution is the supply of ForageMax from Advanced Nutrition. This is a highly digestible source of raw materials that will buffer summer forages whilst also promoting milk fat % and rumen health in this constant heat. Dry matter intake of energy is going to be vital moving forward. Many herds are now seeing the onset of fertility problems, with poor conception rates being the main issue.

Feeding 120 cows 4.5kg of ForageMax per cow/day now for the next 2 months will shorten the winter feeding season by 25-30 days, approximately 120 tonnes of fresh silage @24%-25% DM.



For more information, please contact Mark Gorst on:
m: 07880 794004 / e: mark@arn-ltd.com

Nutrition by nature with new MilkFoss Calf Milk Replacers

Richard Bainbridge of Advanced Nutrition discusses the benefits of skim milk for heifer rearing.

A focus on digestibility is the key to Advanced Nutrition's new range of calf milk replacers, (CMR). The new MilkFoss range contains up to 60% skim which is 92% digestible to the 0-3 week old calf - similar to natural whole milk as displayed in the table below.

Protein Source	Age (Weeks)	Apparent Digestibility
Whole Milk	3	94%
	5	97%
Spray-dried Skim	3	92%
	5	96%
Whey Powder	3	65%
	5	90%
Soya Protein Conc.	2	57%
	7	82%

"We have recently carried out a comprehensive review of milk replacer products from several manufacturers and found the market to be heavily dominated by whey based products, many of which also contain vegetable protein sources such as soya protein concentrate and wheat or pea protein," states Richard Bainbridge.

"However, when we looked at the evidence, it's clear that skim milk is far more digestible to the calf than whey protein and especially vegetable protein sources, particularly in the first 3 weeks of life when calves simply do not have the enzymes required to break down vegetable based protein.

Older calves can eventually break down these sources more effectively, but we really wanted to focus on getting calves off to the best possible start and therefore we made the decision to incorporate the MilkFoss range into our Advanced 24 Heifer programme."

"Skim has traditionally been a more expensive ingredient to use but the gap has closed significantly, partly driven by the EU's push to sell intervention stocks. Our calf rearing programme is focused on cost per KG of weight gain and not strictly on price per tonne – the higher digestibility of skim gives us much better weight gain and therefore our overall cost per kg of weight gain is more attractive than a whey system," adds Richard.



UK Heifer Rearing

A recent study by Liverpool University looked at almost 400,000 heifer's, age at first calving and their performance following. It showed the average age at first calving is 29 months and only 12% calved at 24 months or under.

The study also showed those calving down at 24 months had, 1L/cow/day higher lifetime yield, 6 days lower calving interval and 4,000 cell/ml lower SCC than those calving at 29 months (Eastham et al.,2018).

This proves from home-grown young stock that calving down earlier produces a more profitable, healthier animal and takes less time for the animal to start producing milk.



MilkFoss Benefits

Skim milk powder has many positive attributes aside from the obvious benefits of digestibility. Skim allows for a clot to form in the abomasum which slows digestion and reduces scours at a young age – a similar process to whole milk. Due to this slow break down there is a 30% higher digestion in the first 3 weeks of life which ultimately leads to higher growth rates.

Skim has a high protein content meaning less vegetable protein sources are needed to achieve the overall crude protein target. Vegetable protein sources have a much lower digestibility value because the calf has not produced enzymes to break them down at a young age. MilkFoss 60 contains only dairy protein ingredients.

When a calf is born, there is no maternal immune system and the calf's own immune system hasn't developed yet, which is why clean, well managed calves are so important. To help prevent any potential diseases developing, vitamin E can be supplemented; this is an antioxidant which protects cells from damage, assisting the immune system. The MilkFoss range provides vitamin E in a natural form rather than the synthetic form which is 7 times more available to the calf.

Essential oils are used to further enhance gut integrity and prevent any potential disease stressors. They also provide an additional antioxidant to the supplements, working alongside vitamin E.

The use of skim powder, vitamin E and essential oils in the MilkFoss range provides the correct balance of high quality ingredients to improve calf growth and immunity.



For more information on MilkFoss contact Richard Bainbridge on t: 07585 320400 / e: richard@arn-ltd.com

Optimising Milk from Forage

Rob Watkins discusses the results from one of his customers based in Leicestershire

Optimising milk from forage is the way to go for new entrants Alex and Karen Moore, milking 70 pure-bred Holstein cows on a 65 acre Leicestershire County Council holding.

Alex teamed up with myself and Advanced Nutrition, because he identified us as being 'a forward-thinking company where mediocrity is not an option'. ***"Being target driven in everything we do together keeps me focused,"*** states Alex. ***"Rob's understanding of the cow and how more milk from forage doesn't mean less yield per lactation is key and unique."***

Together, we rolled out an essential nutrition plan to maximize yield from forage - the cheapest form of feed. However, the first year wasn't without its highs and lows. We considered what was going to leave the most margin.

We were targeting 4,000 litres from forage. However, I knew that a lot would hinge on the quality of the forages which Alex had inherited from the previous tenant; we found we had to make up a substantial shortfall with a mixture of moist feed, straw and concentrate within the 7ppl feed budget and 0.35kg/litre feed rate.

Alex caught the farming bug whilst helping out on a local dairy unit from an early age, then on to Brooksby College where he met Karen. He left with a National Diploma in Agriculture, and set off to gain more practical experience, with the ultimate goal to farm in his own right.

The 20-year journey took Alex from general farm worker to herd manager, including a 10-year foot trimming business along the way. ***"It took four tenancy applications over a five-year period before securing Fosse Farm, Sapcote, in 2016. We believe we were lucky despite the fact we were entering the industry at a time of huge volatility."***

"We arrived with £140,000 in savings. Within the first 12 months we had tested the soils and water, re-seeded two-thirds of the unit, introduced seven acres of lucerne, upgraded the parlour and cubicles, adjusted the lighting and invested in 70, two-year-old, freshly calved, high health Holstein heifers imported from Luxembourg."

The cattle, now in their second lactation, were tested Lepto, BVD and Johne's free and vaccinated on arrival.

"We are continually exploring other avenues to boost the business' cash flow, for example, the herd is currently 'semi' autumn block calving, so we're planning to extend calving to commence in June, and eventually to all year round."



If you'd like to improve your forage, please contact Rob on: **m: 07867 384382 / e: rob@arn-ltd.com**