

Who will be the Genus ABS Long Life Cow 2015?

What do Empingham Anne 6, Stardale Royal Stella 3, Gladwake Neptune Collona Mapleigh Juror Socks, Cimmaron Even Jenny and Chalclyffe Iron Arlene have in common? The answer - they have all won the Genus ABS Long Life Cow Award and the search has begun to find the Genus ABS Long Life Cow of 2015.

"The Long Life Cow Competition was created to celebrate those cows who have made an outstanding lifetime contribution," comments Genus ABS Cornerstone Manager Hannah Noble. *"There are many attributes which mean a cow will last longer. She will suit the management system, she will get in calf regularly over several lactations, and she will be a high producer with good compositional and hygienic milk quality. Most importantly she will be profitable."*

"Your best Long Life Cow may have an impressive lifetime yield, may breed back regularly, may never have had mastitis or had her feet trimmed, or she may never have seen the vet."

The 2015 winner was Chalclyffe Iron Arlene, owned by J F Cobb and Sons from Newburgh, Dorchester.



Born in July 2004, Arlene calved for the first time in August 2007. She is in her 8th lactation and has already produced nearly 133 tonnes of milk in her lifetime, losing just one month in calving date over the eight lactations.

If you think you have a cow that deserves to be crowned the Long Life Cow of 2016, complete the enclosed entry form, download an entry form from www.genusbreeding.co.uk or call customer services on 0870 162 2000. The closing date for entries is 14th August 2015 and the winner will be announced at the UK Dairy Day at Telford on Wednesday 16th September.

This year we will be announcing county winners, the best cow from each county. The overall winner will be selected from the four country winners, the outstanding cows from England, Scotland, Northern Ireland and Wales. The top Long Life Cow will receive the coveted Long Life Cow Trophy, a glass trophy and a certificate.

"The quality of entries we received last year really highlighted the durability of UK cows and the excellence of UK stockmanship," Hannah continues. *"We look forward to identifying more Long Life stars this year."*

Business Sense

Genus ABS supporting a fertile future

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RMS helps manage volatility



Huw Lloyd

Achieving high levels of reproductive efficiency can help insulate dairy farms from volatility. As Genus ABS Technical Services Director Huw Lloyd describes, dairy businesses using Genus ABS Reproductive Management Systems are setting the industry benchmark in terms of dairy herd fertility.

Volatility has become a fact of life on dairy farms and it is having a significant impact on profitability. While most people associate volatility with milk price and feed price fluctuations which have become more marked as we move into a more global marketplace, it is important to consider that other factors can cause swings in performance and profitability too.

The most obvious one would be the weather and its impact on forage production. In a good forage year you will have more, better quality feed which will lead to cows milking better, being generally healthier and requiring less purchased feed leading to better margins and profits. Conversely, in a poor forage year the ability to produce milk from home grown feeds is reduced with more purchased feeds used to support yields but probably not profits.

The dream situation is a good forage year coinciding with a strong milk price: feed price ratio, but how often does this happen? The reality is that a dairy business will have to cope with a degree of difficult circumstances every year so have to be set up to be able to minimise the impact.

The key to this is having a long term strategy and managing the business for the long term with sound foundations in place. The easiest example of this is the cows you breed, ensuring they are fit for your system and are able to produce cost-effectively.

The other key foundation for a business must be managing fertility, ensuring cows get in calf in a timely manner.

Achieving and maintaining consistent levels of high fertility can help minimise the effects of other short term influences such as a particular forage season.

There are well-proven benefits to achieving high levels of fertility.

Increased milk income – getting cows in calf more quickly means there is a higher proportion of fresh calved cows in the herd and fewer stale milkers. This has the effect of increasing annual milk production and consequently income.

Better feed efficiency – cows in early lactation use feed more efficiently leading to more cost-effective milk production.

Increased calf crop – more calvings means more calves. Combined with the strategic use of sexed dairy semen and proven beef semen, this will result in increased calf sale values.

More planned culls – with more cows getting in calf, fewer will be sold barren. This means more cows can be selected for culling for management reasons such as production, with less being culled merely because they fail to get in calf. This will help improve the genetic merit and productivity of the herd.

Dates for your diary

Genus ABS will be exhibiting at several major shows this summer. Come and visit us to discuss how our top quality genetics, proven reproduction programmes and outstanding forage additives and dairy hygiene products can make a profitable difference to your business.

Highland – 18th - 21st June

Livestock Event – 8th - 9th July

Royal Welsh – 20th - 23rd July

UK Dairy Day -16th Sept



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Achieving and maintaining high levels of fertility can have a significant impact in reducing the consequences of volatility by ensuring a constant supply of fresh calved cows and more calvings per year. And evidence shows that by taking a planned approach to getting cows back in calf, it is possible to improve high levels of reproductive performance.

The keys to achieving high levels of fertility are high heat detection rates, high conception rates and the timely measurement of success to allow prompt management changes.

It was to help farmers maximise reproductive performance that Genus ABS introduced RMS eleven years ago and since then it has been used by a significant number of herds to improve fertility. Critically using RMS in partnership with GMS (Genetic Management System) offers the opportunity for faster genetic advancement of a dairy herd through selected matings to create a cow for the system.

The service was the first in the country to offer a sub-contracted fertility service where highly trained and experienced technicians work in close partnership with the farm team and vet to deliver a structured rebreeding approach.

By employing vigorous heat detection techniques based on interpretation of tail chalk and animal behaviour it has been possible to greatly increase heat detection rates.

Tail chalking is the highly visual and globally proven way to spot cows in heat, even if only bulling for a short time or with marginal signs and has been proven to deliver heat detection accuracy of over 90% based on progesterone testing.

Highly skilled RMS technicians use management records to ensure effective breeding decisions are made contributing to improved submission rates.

Performance is monitored using 21 day pregnancy rate which is calculated as the number of cows pregnant out of the number of cows eligible to become pregnant in a 21 day period. In so doing it reflects changes in both heat detection and submission rates. Being time specific it allows proactive decision making to address any fall in performance.

The table below compares the performance of herds new to RMS in a 12 month period with a total of 6778 cows. In the six months before starting on RMS the herds were averaging a 13% pregnancy rate but following use of the service for 6 months increased this to 19% within six months of joining, creating more than twice as many pregnancies in the process.

Currently over 200,000 breeding animals are enrolled on RMS and the average 21 day pregnancy rate is 19% which is 5% above the estimated national average.

Submission rate average is 56% with 51% of cows pregnant by 100 days.

No other fertility service has made as a significant an impact on improving herd fertility and by investing in training and development we can help our technicians continue to deliver exceptional reproductive performance.

In so doing we help customers establish a sound foundation which helps them better manage the impact of volatility on their business.



	Performance in six months before joining RMS	Performance in six months after joining RMS
21 day pregnancy rate	13%	19%
Submission rate	35%	56%
Pregnancies created	976	56%



Better returns from beef calves



Stephen Reade

Cheshire dairy farmer Rob Sims was one of the first in the country to get involved in the BeefConnect scheme and is already seeing the benefits.

A partnership between Genus ABS and ABP Food Group, BeefConnect is a collaboration designed to deliver better efficiencies across the beef supply chain to benefit UK producers. Under the arrangement, farmers use Genus ABS Aberdeen Angus sires with calves moved to an ABP dedicated rearing unit, allowing greater transparency and the opportunity to collect data on growth rates, feed efficiency, carcase quality and other factors that affect the price received and potential margin for beef finishers.



With a flying herd of 260 spring calvers, the value of the beef calf crop is a major factor for Rob who farms at Marton, near Macclesfield, running the herd with herd manager Stephen Reade. The herd is run on a simple system with the emphasis on utilisation of grass, averaging 5,600 litres from 800kg of concentrates.

Cows are outwintered and are bought in to calve in straw yards before being turned out again the day after calving. This means calving ease is a high priority.

"We want the cow to calve easily and get back up on her feet quickly. She also has to be ready to rebreed to maintain the calving block," Rob comments. *"At the same time we want a good calf value."*

All cows are served to AI and Rob had been using Genus ABS Belgian Blue calving surveyed bulls. While happy with the calves, he wanted to improve subsequent conception rates so decided to make the switch to easy calving Aberdeen Angus.

Calves are fed colostrum immediately after calving with all colostrum tested for quality using a colostrometer, with only high quality colostrum fed. They are moved into starter pens before moving onto an adlib calf machine and are bedded on straw.

Calves were being sold to local markets and more recently Rob had been selling around 90% of the calf crop to a calf marketing organisation with calves typically sold at 3-4 weeks old based on visual assessment. The Angus calves were targeted to be sold at 50kg.

Given that he was producing the breed and type of calf required for BeefConnect, Genus ABS Sales and Breeding Advisor Rob Warrington suggested they consider participating in the scheme.

He arranged a visit from Rob Ashmore from ABP who assessed the calf rearing management against the scheme protocols and weighed some of the calves. Not only did the management meet the required standard, but several calves were identified that could be moved on having exceeded the target weight but not picked out on visual assessment.

Based on the initial visit, Rob Sims agreed to get involved in BeefConnect and is already seeing the benefits.

"It was certainly an eye opener to see that we could be moving calves sooner," he continues. *"With the block calved herd, space can become a real issue and it is a great advantage to be able to move calves out younger."*

"Now we are weighing calves prior to sale, we have seen we are achieving growth rates close to 1kg/day and are selling out at 2-3 weeks old, saving around one week per calf."

"This means we are saving on milk replacer and bedding costs and it takes less time to see to the calves every day which is another advantage. Combined with the better price, this means the margin on the calf crop will have improved."

Rob is also convinced of the benefits of a more connected and traceable supply chain. *"As an industry, a more joined up supply chain has to be a good thing. We have the opportunity to produce more beef and offset imports but must be more efficient. Hopefully the added benefits of more performance data for the bulls will drive efficiency further leading to more margin to be spread across the chain."*

PLANNED BREEDING

MAKES BEST USE OF GENETICS

Since moving onto a managed breeding programme, Dumfries dairy farmer Allan Campbell has seen continued improvement in the cows in his expanding herd.

Allan runs a herd of 420 all year round calving Holsteins at Kerricks Farm, Kirkmahoe where he farms with his wife Janice and son Robin. When they started dairy farming in 1979 they had 100 cows averaging 7,000 litres but the herd size and yields have increased steadily.

The cows now average 10,750 litres sold per year and for the last five years have been housed all year round. They are housed as a fresh calved group for approximately three weeks and a single main milking group and fed a single TMR. All dairy replacements are home-bred and reared to calve at two years old.

Since the autumn of 2014 the cows have been milked three times a day.

"We didn't move to three times a day for the extra yield although we have seen a 10% increase. It was more about wanting to help reduce the risk of mastitis, increase lifespan and helping the cows achieve their potential," Allan explains.

Breeding decision making had been based on discussing possible groups of bulls to use with the emphasis on production and conformation, predominantly with high leg and foot and udder composites. Allan comments that they always wanted milk but type was important.

Allan was doing all the AI himself and usually had semen from around 6 bulls in the tank at any one time for use on the cows. Heifers were bred to a Holstein stock bull. There was no precise plan for which bulls to use on individual cows, however individuals were assessed and mated to the most suitable bull in the flask.

"Over time we started to get a few problems such as the cows getting bigger, and in some cases too big to use the cubicles comfortably. We were also seeing considerable variation between cows.

"At the same time more indices were becoming available making it harder to select between bulls so in 2007 I decided I would look to make breeding decisions based more on available science and decided to try the Genus ABS Genetic Management System (GMS)."

The objective of GMS is to develop cows to suit the farming system making best use of available genetics. The starting point is to really understand what the farm is trying to achieve and to get a true picture of the current cows in the herd which represent the starting point for improvement.

The cows in the herd were all scored for type traits although, as Genus ABS Breeding Advisor Dougie White explains, it is possible to run the system without carrying out individual cow assessment.

"While assessing cows gives a very close picture of the herd, it is possible to develop a planned mating programme based on existing information such as pedigree information going back up to seven generations," he says.

"To match bulls against individual cows we first develop a strategy for the herd. In Allan's case the aim was to focus on longevity and production while trying to breed a slightly more uniform sized cow, better suited to the farm facilities."

"The GMS programme draws up a list of first and second choice potential bulls that suit each cow, correcting type faults, improving management traits and eliminating any risk of inbreeding.



It assesses a comprehensive range of production, type and management traits when selecting possible sires. The key is that each cow is mated as an individual."

The system does not allow any individual bull to be recommended on more than 25% of the cows and bulls with low reliability will be selected with lower frequency. This reduces the over-reliance on one or two bulls while maximising progress by increasing the size of team used, giving more options for each cow and creating the best possible mating.

Furthermore, GMS is unique in that when allocating bulls to individual cows it ensures the best cows are allocated to the most compatible sire first. This ensures that they continue to improve while ensuring the lower genetic merit cows also improve so the whole herd moves forward.

Typically a team of 10 bulls will be in use at any one time. In the early years Allan Campbell was using well known proven sires such as Garrison, Bolton, Matson, Reece and Drake. The team was reviewed every six months to allow new sires and updated genetic information to be included, while the detailed reports produced by the system allow genetic progress to be measured across a number of key criteria.

"We were using a strong team and some sires such as Reece and Bolton were included on the list for several years and have made a big impact on the herd. But bulls are only on the list on merit which is the beauty of the system."

More recently Allan has changed his selection criteria.

It became apparent that milk quality was going to become more important so he has started putting more emphasis on fat and protein when shortlisting bulls. And since 2013 he has started to use genomically proven sires as part of the programme.

"Genomics offers an exciting new opportunity," comments Dougie White. *"They can help us get a more diverse range of bulls and the chance to potentially accelerate progress."*

"It is important to use the technology carefully and to bear in mind that reliability will be lower. Initially we used around 5-10% genomic semen but this has increased over time. The genomic group being used, also usually 5 sires, will change every six months and currently includes Miguel, Reese and Corinthian, the highest genomic sires for PLI with fat and protein percent improvement."

"Genomic sires are now used for first and second service on all cows with proven semen used for third and fourth service as required."

All AI is now carried out by Genus ABS Reproductive Management System (RMS) technicians. With the expanding herd Allan was finding it more challenging to maintain fertility.

"RMS is working really well. The combination of RMS and GMS is really powerful as the technician knows precisely which bull to use on each particular cow so we are driving both reproductive performance and genetic progress."

"By adopting a more structured planned approach to breeding we can be confident we are making continued progress while taking some of the risk out of sire selection and ensuring we continue to make progress in the right direction."



Allan and Robin Campbell with Genus ABS Breeding Advisor Dougie White

Will heat stress knock fertility this summer?

While many farmers are aware of the impact of heat stress on milk production, it can have a significant impact on fertility too. Alex Garnett, BVetMed MRCVS, Genus ABS Technical Services Consultant considers the problem and what can be done to reduce the risk.

Heat stress is a more common problem than is often appreciated. It occurs when temperature and, critically, humidity act to increase the cow's body temperature above normal limits. Milking cows are particularly sensitive to heat stress because they have a high metabolic heat production. Cows start to be affected by heat stress when the temperature reaches just 22°C (72°F)

The symptoms and effect of heat stress include reduced dry matter intake, reduced production and fertility, increased water requirement, increased respiratory rate, greater loss of water due to evaporation, higher body temperature and changes to metabolic and hormonal rates.

Cows are under heat stress if they show one or more of the following symptoms:

- Body temperature above 39.2°C
- Respiratory rate over 60/min
- 10% reduction in dry matter intake
- Yield down more than 10%

Heat stress is best measured using the Temperature-Humidity index (THI).

Based on environmental temperature and humidity readings, it can be used to estimate the level of heat stress cows are suffering (see table). When THI index exceeds 72, reproductive efficiency can be affected.

While there may only be few days in a year when environmental temperatures and humidity increase the THI, the living environment of dairy cows can provide greater risk, especially as it can increase humidity.



Heat stress and reproductive efficiency

The fertility of cows suffering from heat stress can be affected in several ways.

- It reduces the length and intensity of heat expression.
- Conception rates can decline by 10-20% leading to a decline in 21 day pregnancy rate and overall reproductive efficiency. The effects are likely to occur prior to and post periods of high heat stress risk and are difficult to predict.
- Heat stress damages the developing follicles/oocyte in the ovaries and leads to sub-fertile oocytes for several months, which can explain lags in reproductive performance after heat stress.
- A decrease in the production of oestrogen from follicles in the ovaries is also seen which can reduce heat expression. This also influences ovulation and the resultant corpus luteum, leading to reduced progesterone production. Low progesterone levels are associated with reduced fertility.
- Once fertilisation has occurred, heat stress can affect the embryo itself. The initial 24 hour period after the onset of oestrus and during the initial time post-breeding is challenging for a susceptible embryo during heat stress.

Action to reduce heat stress

Measuring rectal temperature can indicate the level of heat stress. As a rough rule of thumb, if more than 7 out of 10 cows have rectal temperatures above 39.2°C in the afternoon they are at risk of reduced yield and fertility.

Respiration rate should be assessed at the same time, counting the number of breaths/ flank movements for 30 seconds and multiplying by two.

To help your cows, you must support their ability to disperse heat through the four mechanisms available to them: conduction, convection, radiation, and, evaporation.

- Acidosis prevention is critical. Cows with heat stress ruminate less frequently, reducing natural saliva production so adding rumen buffers and yeast to the diet can help.
- High yielding cows drink up to 150 litres of water per day, so provide access to plenty of fresh clean water at all times during the day including in collecting yards and immediately after milking. Check water pressure so troughs fill quickly, and clean troughs regularly.
- Forages produce seven times more heat than concentrates in the rumen, so under heat stress conditions it may pay to reduce forages and increase concentrates, particularly high fibre concentrates. Work with your nutritionist to reduce the forage:concentrate ratio sensibly.
- Focus on high risk groups such as the transition and high yielding open cows.
- Make sure cows have access to sufficient shade. Consider allowing cows back off grazing on hot days.
- Make sure buildings have efficient natural ventilation and consider forced ventilation using fans.

With a proactive management approach, it is possible to reduce the impact of heat stress and achieve increased summer fertility, greater milk production and maximise cow comfort.

Temperature-Humidity Index (THI) and clinical symptoms Table

	Respiration rate (breaths per minute)	Rectal temperature (°F)
Stress threshold	>60	>38.5°
Mild-moderate	>75	>39.2°
Moderate-severe	>85	>40.0°
Severe	120-140	>41.0°

NEW INOCULANT REDUCES WASTE AND RETAINS FEED QUALITY

Reducing heating and wasted silage in the clamp and trough can be a big challenge, but a new development in silage inoculants offers a way to cut losses and maximise performance from forage as Paul Nunn, Genus ABS European Business Development Manager explains.

"All dairy farmers will be familiar with the problems associated with aerobic spoilage in silage clamps," he comments. "It is commonly an issue at feed out when clamps are opened and the silage is exposed to air again."

Aerobic spoilage is caused by the actions of yeasts and moulds present on the feed and results in the feed heating up in both the clamp and trough. The action of heating is a big problem as it leads to dry matter losses and reduced feed value with higher feed rejections, disposal of spoilt material and reduced production from forage. It can affect any crop or clamp but is a specific problem with high dry matter silages, and where clamps are opened too soon after harvest before a stable fermentation has been completed.

Mr Nunn explains that yeasts and moulds are naturally occurring. As it is impossible to exclude them from silage clamps, the focus has to be on reducing their activity and impact.

He says that ensuring best practice at silage making including reducing contamination with soil, ensuring the clamp is well rolled, thoroughly sheeted and weighted down can all help restrict spoilage when the clamp is opened. Once opened, maintaining a tight, well-managed feed face will also help.

"Choice of inoculant can also have a significant impact on wastage levels. Over the years, numerous approaches have been attempted to reduce these problems and while they have been successful to varying degrees, the downside is that there has also often been a reduction in feed quality."

"But now a major development in silage inoculants means aerobic spoilage can be reduced while maintaining silage feed value, greatly reducing the rate at which silage heats up in the clamp or trough and cutting waste. What is more it is based on a naturally occurring process."

Genus ABS Powerstart Xtra combines the unique proven bacterium L. Plantarum Aber F1 with a specific organic citrate, a preservative which when combined with the bacteria produces inhibitors during the fermentation of the grass and maize which reduce the activity of moulds and yeast."

"Citrate is found in higher concentrations in lucerne silage which is known to be less prone to aerobic spoiling. Research shows that citrate is used as a feed source by the Aber F1 L Plantarum."

During the fermentation of citrate, specific by-products such as Diacetyl are produced which inhibit the actions of yeasts and moulds. This results in more, better quality, more palatable silage available to be fed."

"The inclusion of citrate in Powerstart Xtra gives farmers the proven quality fermentation they are used to from existing Powerstart products, now combined with a significant reduction in aerobic spoilage."

In scientific trials, silage treated with Powerstart Xtra took significantly longer to heat up. While the control silage which was preserved with Powerstart Instant heated to 3°C above ambient temperature in less than two days, silage treated with Powerstart Xtra took over four days to reach the same temperature, so reducing wastage and maintaining feed value and palatability.

"With the focus clearly on controlling costs of production, reducing waste and increasing the proportion of silage that is utilised by cows, choosing an inoculant proven to reduce spoilage while maintaining feed value can have a big impact," Mr Nunn comments.



Paul Nunn