



# Newsletter

The **ABERDEEN-ANGUS** Cattle Society Newsletter January 2012



## TECHNICAL AND HEALTH SPECIAL

### COUNCIL UPDATE

#### MYOSTATIN – A POSITIVE ATTRIBUTE OR A LATENT DANGER

There has been much talk recently at shows and sales on the perceived increased muscularity of some Aberdeen-Angus cattle relative to what they were only a few short years ago.

There is an understandable view that increased muscularity and consequential improved grades is what the market requires and whilst that may be true in a commodity beef market, the Society has to take care not to compromise the traits that we are famous for such as ease of calving and quality of our beef in pursuit of increased muscularity and improved performance.

#### *So what are the facts?*

##### **WHAT IS MYOSTATIN NT821 GENE DELETION OR M1?**

M1 has been recognized as a strain of double muscling. Cattle that are homozygous for the mutated gene (carry both versions) will exhibit M1. Such animals are extremely heavily muscled in appearance, including abnormally large, wide and rounded rump and thighs with prominent creases between muscle groups. There is usually little covering fat, and bones are thin.

##### **WHAT CAUSES M1?**

M1 is caused by a recessive mutation on a single cattle chromosome. Remember only cattle that are homozygous or carry both versions of the gene will exhibit M1. We are confident that relatively few bulls will be M1 or homozygous for the gene.

##### **WHAT IS A M1 CARRIER?**

An M1 carrier is an Aberdeen-Angus or Aberdeen-Angus cross cow, heifer, bull or steer that **carries a single version of the recessive M1 mutation in their DNA.**

##### **WHY ARE CARRIERS OF M1 IMPORTANT?**

Carriers of M1 used in breeding programs (registered or commercial) are responsible for propagating the recessive mutation within the cattle population.

##### **WHAT DOES A M1 CARRIER LOOK LIKE?**

A single version M1 carrier looks perfectly normal; there is nothing in the way an animal looks (its phenotype) that indicates that the animal is a carrier of the M1 mutation.

##### **IF A COW HAS A M1 CALF, WHAT DOES THAT MEAN?**

If a cow has a M1 calf, and if it is the cow's natural calf, it means that the cow is a carrier of the M1 mutation and the sire of the calf is also a M1 carrier.

##### **IF A RECIPIENT COW HAS A M1 CALF, WHAT DOES THAT MEAN?**

If a recipient cow has an M1 calf, it means only that both the donor cow and the sire of the calf are carriers of the M1 mutation. It doesn't tell you anything about the M1 carrier status of the recipient cow.

## **IF A BULL SIRES A M1 CALF, WHAT DOES THAT MEAN?**

If a bull sires a M1 calf, it means that the bull is a carrier of the M1 mutation and that the dam of the calf is also a M1 carrier.

## **I HAVE NEVER HAD A M1 CALF. DOES THAT MEAN MY COWS ARE NON-CARRIERS?**

Not necessarily.

## **WHAT IS THE RISK OF HAVING A M1 CALF IF I BREED A M1 CARRIER COW TO A M1 CARRIER BULL?**

Every time you breed an M1 carrier to an M1 carrier, there is:

- a 25% risk of having an affected or homozygous M1 calf;
- a 50% risk of having an otherwise normal-appearing calf that carries the M1 mutation;
- a 25% chance that you will have a normal-appearing, non-carrier calf.

## **IF I BREED A M1 CARRIER COW TO A NON-CARRIER BULL, WHAT IS THE CHANCE OF HAVING A M1 CALF?**

Zero. You will never have a M1 calf if you breed a carrier cow to a non-carrier bull. (excluding the possibility of a spontaneous mutation),

## **IF I BREED A M1 CARRIER COW TO A NON-CARRIER BULL, WHAT IS THE RISK OF HAVING A CARRIER CALF?**

Every time you breed a carrier cow to a non-carrier bull there is:

- a 50% risk of having a normal-appearing calf that carries the M1 mutation; and
- a 50% chance you will have a non-carrier calf.

## **IS THERE A TEST TO IDENTIFY M1 CARRIERS?**

Yes. A DNA test is available to determine if an animal carries the M1 mutation in their DNA. The type of DNA sample required is hair root samples.

## **WHAT DO I DO WITH THE CONFIRMED NON-CARRIER FEMALES IN MY HERD?**

If the females are tested non-carriers and they are bred to non-carrier bulls, they will never produce affected M1 calves or carriers. These non-carrier females can be used throughout your breeding program with no risk of propagating the M1 mutation.

## **WHAT IS THE ABERDEEN-ANGUS CATTLE SOCIETY'S POLICY REGARDING M1?**

Since 2002, Bye-Law 10(b) has been in place which allows the Society the right to refuse the registration of animals which are proven homozygous carriers for the Myostatin nt821(M1) deleted gene (see below).

**10(b).** Animals exhibiting double muscling characteristics (muscular hypertrophy) will not be accepted for entry in the Herd Book, and if entered unknowingly, may be removed from the Herd Book on the instructions of the Council of the Society. (See guidance not at end of Bye Laws)

If required, the proof of double muscling shall be a combination of visual appearance (phenotype) and scientific gene testing. Such proof shall be instituted by the Council, who shall appoint a veterinary surgeon and a Council member, who is also a member of the Society's panel of judges, to inspect the animal. If both agree that the animal phenotypically shows double muscling characteristics, the Council shall arrange with the owner of the animal to test for the deleted version of the myostatin gene. If the result of such test is that the animal is homozygous for the gene, the animal shall be considered to be double muscled.

## **SO WHAT'S NEXT?**

In the Spring of 2012, the Society will sample all bulls coming forward to official Society sales for the presence of the Myostatin nt821 deleted gene. We also intend to sample AI bulls as well. Only by conducting such a survey will the Society be able to ascertain the prevalence of the gene. The results of this survey will not be made public but breeders may obtain the results if they wish.

It is envisaged that with a suitable 'lead in time' and sufficient notice to all breeders, the Society will initiate a compulsory Myostatin nt821 Deleted Gene test on all new stock bulls before their first calf is registered. This test will be carried out at the same time as the existing compulsory Sire Check test.

It is further proposed that the results of such compulsory tests will be printed on an animal's pedigree certificate and on the Web as to whether an animal is a single version carrier or free from the gene.

Only by putting such information in the public domain will breeders be able to make informed decisions on their herd's breeding policy. Presently without that information breeders may be inadvertently introducing the Myostatin gene into their herd.

## **IN SUMMARY:**

This is a difficult subject and not easily understood for which I make no apology.

However the Myostatin nt812 Deleted Gene could be a serious issue for the Aberdeen-Angus breed if not addressed. As such it is important that breeders are kept fully informed about any testing requirements and access to accurate information. This is not "someone else's problem" and we must act if we are to manage our way out of what could be an irrevocable slide towards an impending disaster. The Aberdeen-Angus breed is famous for all the right reasons. Let's keep it that way.

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## **HEALTH ISSUES – SO FAR SO GOOD**

Herd Health issues have occupied a very considerable amount of Council's time over the last year and rightly so. You can have the best genetics in the world but if your herd's health status is not up to scratch then your herd will be compromised. Healthy herds are more productive and more efficient.

Earlier in the year the Society produced the "Don't Fall Behind" Herd Health booklet which was circulated to all breeders and is available at all official sales and major shows. It was designed and written for practical farmers to raise the awareness of the major diseases and how to improve their herd's overall health.

We were the first Society to take the initiative and the publication was well received across the industry. However much remains to be done.

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### **BVD:**

It's sorted. All cattle coming forward to Official Sales now require to be tested free and vaccinated against BVD. Whilst Scotland and hopefully the rest of the UK is moving towards a national BVD eradication programme it is heartening to know that we were the first breed society to make BVD testing and vaccination compulsory at official sales. The majority of other breed societies have now followed suit.

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### **JOHNES DISEASE:**

Unlike BVD, Johnes Disease still presents major challenges. The test etc nature of the disease means that it is difficult to detect and consequently difficult to treat.

Currently, the Society's policy is that all cattle coming forward to Official Sales must come from herds that are in a CHeCS approved Health Scheme and be "monitoring their herd's Johnes status". It's a start but far from ideal.

For some time the Society has had serious concerns over the terminology used by CHeCS and the Health Scheme Providers in relation the Johnes disease. For example, to most breeders and commercial bull buyers the term "JOHNES ACCREDITED" implies the herd is free of Johnes disease. What it actually means is that the herd has tested clear on three consecutive

tests. It is impossible to claim that a herd is clinically free of Johnes disease. At the moment a herd is either 'Accredited' or 'Monitored' and there is no way of knowing if the herd has an active culling policy for high titre animals or if their bio-security is good. No management information is taken into account.

Having initiated a series of meetings with CHeCS, SAC and BioBest it has been agreed to move towards ranking a herd's Johnes status by the degree of risk which the herd poses. For example a herd which tests but does not cull and whose pedigree and commercial cattle mix on farm would have a much higher risk of selling infected animals than a herd which actively culls and whose bio-security is good. Whilst the final numerical values of the 'degrees of risk' have yet to be approved by CHeCS it is hoped to have this new 'Degree of Risk' status in place early in 2012.

## **IBR (INFECTIOUS BOVINE RHINOTRACHEITIS)**

In the greater scheme of Herd Health Planning, IBR does not receive the attention it deserves. Many breeders class it as a 'secondary disease' with little more than nuisance value especially when cattle are housed. "That's the one where they get a bit of a runny nose" is most people's perception of IBR. How wrong they are!

IBR is caused by the **Bovine Herpes Virus 1** and can cause acute upper respiratory tract infection and can lead to secondary fatal pneumonia. In adult cattle it can lead to a severe and prolonged drop in milk yield, abortions and fertility issues and once infected an animal remains infected for the rest of its life. Mild cases of IBR can be overlooked as the symptoms are difficult to detect but the infection is still there and the animal is a risk to the rest of your herd. If IBR is not part of your current herd health planning then it should be. There are very good marker vaccines now available. Talk to your vet about protecting your herd from this very serious disease. IBR tested free cattle is what your customers are looking for.

### **IBR AT OFFICIAL AND PRIVATE SALES**

For IBR is with us whether we like it or not. If you are selling privately from home or through Official Society Sales then your obligations are the same. If you don't test for IBR and you sell into a naive or open herd then the consequences for you as a breeder could be serious. Worse still if you test for IBR but do nothing about it then you best start looking for a good defence lawyer. Claims for consequential loss could be substantial. The move to IBR testing and vaccination is being driven by buyers' requirements.

To date, the Society has not had an active policy on IBR at Official Sales. There have been occasions where animals have left official sales and have subsequently tested positive for IBR but it is impossible to determine whether the animal was exposed to infection at the sale or may have been vaccinated with a live, non marker vaccine by the breeder prior to the sale. Either way they can still pass on the virus. These animals cannot be exported, admitted into AI centres or enter IBR accredited herds.

The Society has a requirement to bring information about IBR to breeders' attention and to encourage herds to be proactive in the control of IBR. You may think that this is really 'someone else's problem', but it's not.

### **ASK YOURSELF SOME SIMPLE QUESTIONS:**

- Do you know if your herd is free from IBR and if so, do you vaccinate?
- Which vaccine do you use?
- Is it a 'Live' or a 'De-activated Marker Vaccine'?
- If your herd is tested clear of IBR and you don't vaccinate is your bio-security up to scratch?

**It is the Society's objective is to have only IBR Tested Free cattle coming forward to Official Sales from early 2013. By giving breeders a 'suitably long lead in time', this will allow them to plan their IBR testing and vaccination programme accordingly.**

### **THE STEPPED PLAN:**

- If you are not already doing so, then talk to your vet about testing your herd for IBR.
- If your herd is tested free from IBR make sure you observe strict bio-security measures at all times.
- If you choose to vaccinate your herd once it is tested free of IBR then only use **Risposal IBR inactivated marker vaccine (Pfizer)**.
- For the foreseeable future any animal tested positive or vaccinated for IBR (including inactive marker vaccine) **WILL NOT BE ABLE** to enter an AI collection centres. However they can be collected on farm for UK domestic use.
- A breeder may choose not to vaccinate for possible semen collection reasons as outlined above. If so then the animal(s) should be tested as close to the date of sale as possible and then isolated. Remember this is an air borne disease so bio-security has to be strict.
- Do not use any form of live vaccine especially calf nasal sprays.
- If you have a high incidence and an active IBR viral problem another vaccination route may be better although this would stop you selling in Official Sales until you IBR problem is under control.
- If you start the process now then by 2013 you will be able to sell at any of the Official Society Sales. On the other hand if you choose to sell privately from home then you will be able to guarantee your cattle are free of IBR.

This plan is about reducing the risk of transmitting IBR at Official or Private Sales. If all animals offered for sale from 2013 onwards are either tested free of IBR or tested free and vaccinated with a deactivated marker vaccine then we will be able to give buyers that extra confidence. Repeat business is what drives the profitability of your pedigree enterprise. Being IBR free will help you achieve just that.

**The date of the next Council meeting is scheduled for Sunday 5th February, 2012**