CASTLE VET GROUP

March/April NEWSLETTER!

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Welcome to your March/April newsletter,

We hope your farm is running like clockwork. Don't forget we are here to help whenever you need us. Consider us as part of your team and give us a call if you need a visit or just need advice. We are always on hand.

With that in mind, we hope the two articles we have for you are useful.

In this issue, we're talking about fertility in the beef herd, with a look at the tools that are available to help you.

For those of you with sheep, we've covered lamb growth rates to help you get the most from your flock.

We would love to hear from you about what subjects you think would be useful for us to cover in the newsletter, so let us know when we are on farm next.

Stay safe!

Best wishes,

The team at Castle Vets

In this issue:

Fertility in the Beef Herd

In the UK, the majority of beef suckler herds utilise a natural service from one or more bulls, timing this to allow calving at a time that fits with their management system.

While this practice can be very successful, there are more tools at a farmer's disposal for managing fertility in the herd to maximise productivity and genetic potential as well timing calving more accurately to suit the farm's needs. Let's take a look at what they are:

Artificial Insemination

In some herds it may be possible to replace a bull entirely with AI. This has the obvious cost advantage of not needing to buy, house or feed a bull. In most herds however, it is impractical to go without a bull altogether, but AI still has major benefits:

- The ability to use semen from bulls with a higher genetic merit
- Selection of the most appropriate bull to suit individual groups or cows (e.g. an easy calving bull for heifers)
- Having a known service date makes predicting the date of calving far easier and therefore helps calving management

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- Where oestrus synchronisation programmes are in use it is possible to serve far more cows in a short space of time than a bull would manage

Oestrus synchronisation
Whether it is by using injections or intravaginal devices like CIDRs, synchronisation programmes allow us to bring cows into oestrous at a time of our choosing.

Use of synchro programmes is often seen as restricted to herds implementing fixed time artificial insemination however, there are a wide range of programmes and, when used appropriately, they can bring benefits to most breeding systems:

- In a system utilising natural service only (i.e. running a bull), a programme to bring cows into season earlier will tighten service and therefore, calving. They can also be used to bring cows into season more quickly after calving, pulling late calvers forward for the following year
- Where a combination of Bulls and AI are used, synchronising cows allows a block of AI to be followed by a sweeper bull
- Where AI alone is to be used, a synchro programme takes away the need for heat detection and means cows get served more quickly and efficiently. It also means the AI can be done at a time of your choosing

Pregnancy diagnosis
Having your cows scanned has the advantage of finding out which cows are in calf and therefore, saving the considerable time, effort and money involved with keeping a cow for nine months, only to discover she's empty. Dating the pregnancy will also allow early and late calvers to be separated and managed appropriately.

Thanks to ultrasound scanning pregnancy can be detected from 30 days after service. Knowing whether or not a cow is in calf at this early stage means that she can be re submitted for service if not in calf and the earlier the PD is performed the more accurately pregnancy can be dated.

Heifer management
Selecting the right heifers to be kept as replacements is a vital factor in preserving the future of the herd. It has been shown that calving heifers at two has major financial benefits, both in terms of saving on rearing costs and increasing the lifetime productivity of that heifer. For this to happen it is important to know that she is ready to breed at fifteen months. Before bulling, a heifer should be 65% of her adult bodyweight and must be reproductively mature.

Performing some relatively simple pre breeding checks prior to mating will allow you to eliminate heifers which are not fit for breeding and select those with good fertility traits and pelvises favourable for easy calving.

Pelvic scoring: Using callipers to measure the internal dimensions of the pelvis gives a very strong indication of a heifers 'roominess' for calving. Heifers with good pelvic scores have significantly less caesarian sections and assisted calvings than those with narrower pelvises.

Reproductive tract scoring: Using ultrasound to examine the uterus and ovaries of a heifer around a month pre service informs us of her readiness to breed. Those not reaching a required standard may be left to mature or may be selected for fattening, as these animals will be less fertile throughout their lives.

We can help with all of your fertility requirements. Please have a chat with one of our farm vets or, why not discuss it as part of our herd health planning service?

Lamb Growth Rates

Birth to Weaning:
Lambs grow better pre-weaning when they are effectively monogastric animals. Aiming to achieve growth rates of over 300 grams per day pre-weaning is the best course of action. That means the lambs would have weaning weights exceeding 25kg.

When feeding lactating ewes, driving the process of lactation to maximise early lamb growth is important, so paying attention to both energy and metabolisable protein requirements is the key to success.

Like the dairy cow the ewe can mobilise body tissue and this is perfectly normal and is another reason why body condition scoring (BCS) and feeding pregnant ewes correctly is so important. If the ewe is in the correct BCS for her breed, then condition losses of 100 to 150grammes per day are supportable.

100g loss of liveweight per day = 2MJ per day and 12grammes of metabolisable protein per day.

Step 1 is having an idea of how much milk your ewes are likely to be giving; table 1 below from AFRC (1993) gives us a rough idea.

Litter size	Type of ewe	Month of lactation 1	2	3
One lamb	Hill	1.25	1.05	0.70
	Lowland	2.10	1.70	1.05
Two lambs	Hill	1.90	1.80	1.10
	Lowland	3.00	2.25	1.50

Table 1: milk yield (litres) by month of lactation according to type of ewe and how many lambs she is rearing:

Step 2 is calculating requirements. In order to do this, refer to published requirements for energy and metabolisable protein from AFRC (1993), listed in table 2. These requirements assume the diet is of quality (qm) = 0.6 i.e of the total energy supplied in the diet (the gross energy), 0.6 of it can be utilised by the ewe i.e 0.6 of the gross energy is metabolisable.

Housed 40kg ewe	Milk yield (kg/d) 1.0				2.0				3.0			
ΔW g/d	DMI kg	ME MJ	MP g	L xM	DMI kg	ME MJ	MP g	L xM	DMI kg	ME MJ	MP g	L xM
0	1.2	13.6	133	2.6	1.9	21.9	209	4.1	-	-	-	-
-50	1.0	11.8	127	2.2	1.7	20.0	203	3.8	-	-	-	-
-100	0.9	10.1	121	1.9	1.6	18.2	196	3.4	-	-	-	-
Lowland ewes outdoors + 0.2 MJ/d, ewes on hills + 0.8 MJ/d												
Housed 60kg ewe												
0	1.3	15.6	146	2.1	2.1	23.7	222	3.3	2.8	32.2	297	4.4
-50	1.2	13.8	140	1.9	1.9	22.0	216	3.0	2.6	30.3	291	4.2
-100	1.0	12.1	134	1.7	1.7	20.2	209	2.8	2.5	28.5	285	3.9
Lowland ewes outdoors + 0.3 MJ/d, ewes on hills + 1.1 MJ/d												
Housed 80kg ewe												
0	1.5	17.5	158	1.9	2.2	25.6	234	2.8	2.9	33.9	309	3.7
-50	1.4	15.8	152	1.7	2.1	23.8	228	2.6	2.8	32.0	303	3.5
-100	1.2	14.0	146	1.5	1.9	22.0	221	2.4	2.6	30.2	297	3.3
Lowland ewes outdoors + 0.4 MJ/d, ewes on hills + 1.5MJ/d												

Table 2: Dry matter intake (DMI), energy, protein and feeding level requirements according to milk yield and liveweight of ewe.

As an example, consider an 80kg lowland ewe, rearing twins in the first month of lactation. Table 1 tells us that she is likely to have a milk yield in the region of three litres per day. Let's say that feeding level is 3.3 (this value just indicates the level of feeding above maintenance – to achieve greater feeding levels that result in zero liveweight change, the ration has to be very palatable – in practice, such perfect rations are scarce and so the ewe is likely to lose 100g of liveweight per day in the first month of lactation.

Therefore, her dry matter intake (DMI) = 2.6kg per day, metabolisable energy requirement (ME) = 30.2MJ per day and metabolisable protein requirement (MP) = 297g per day.

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Step 3 is to calculate the fresh weight of available ingredients to feed to these ewes. This step will require a forage analysis and the analysis sheet from any compounded feeds. Let's assume that we have average quality silage of 10MJ/kg DM with a crude protein content of 13% and assume we feed a compounded ewe nut that supplies 12.5MJ of ME/kg DM and 18% crude protein:

Component	Fresh weight (kg)	DM (kg)	ME (MJ)	FME (MJ)	CP (g)	ERDP (g)	DUP (g)	MP (g)
Silage	4	0.35	10	9	130	100	30	
Total supplied by silage		**1.4**	**14**	**12.6**	**182**	**140**	**42**	
Ewe nut	1.5	0.86	12.5	10.3	180	118	62	
Total supplied by ewe nut		**1.29**	**16.12**	**13.28**		**232.2**	**152.2**	**79.9**
Totals	**2.69**	**30.1**	**25.8**	**414.2**		**292.2**	**121.9**	
Requirement		2.6	30.2					297

- At a feeding level of 3.3, the microbial crude protein (MCP) yield will be 11.1g of MCP per MJ of FME

- Effective rumen degradable protein (ERDP) required to utilise the available fermentable metabolisable energy (FME) is therefore 25.8 x 11.1 = 286.3 grams. The diet supplies 292.2grammes, therefore FME will be limiting MCP production and so the maximum amount of MCP that can be supplied by available ERDP is 286.3 grams/ day.

- Metabolisable protein (MP) supplied by this diet is given by:
  0.6375x MCP + DUP
  0.6375x 286.3 + 121.9 = 304.4g/day
  This slightly exceeds requirements

Running the same calculation, using barley, produces a diet that is deficient in metabolisable protein. As a rule, lactating ewe diets, especially for lowland breeds, needs to be around 18% crude protein.

It is important to re-calculate feeding rates approximately one month prior to weaning so that expensive feed is not wasted, ewes do not become over-conditioned and weaning of lambs is not impeded by ewes that have not dried up fully.

If the ewes lamb later in the year, the silage analysis can be replaced by a typical analysis for spring grass and the concentrate requirements will be a little less.

Post Weaning

An efficient system will wean the lambs between 9 and 12 weeks; by this stage, milk will only be a small part of the lambs' nutrition. If growth rate data is available, the lambs must be weaned if that rate is dropping below 200 grams per day. Factors such as ewe condition and feed availability will influence the decision around when to wean.

Sheep don't like sudden changes to diet so, if forage crops or chicory are to be used for finishing lambs instead of grass, it is important to have a transition period before weaning.

After weaning, it's important that lambs go on to ground that has the lowest nematode burden. Carrying out a baseline faecal egg count at weaning can be useful to determine levels of parasitism and whether an anthelmintic treatment is required.

If anthelmintics are required, dose and move should be avoided and an in-refugia population must be maintained by not treating the biggest and heaviest lambs.

The best returns are made by producers that can match type and weight of lamb to their system and make best use of home-grown forages (HCC Lamb finishing systems 2012). Lambs should be weighed and batched at weaning:

- >35kg lambs = **short keep:** These lambs must maintain growth rates of 140-160 grams per day (AHDB 2015) using concentrates and good quality forage. These lambs will be ready for sale in less than 6 weeks.

- 30-35kg lambs = **medium keep:** These lambs will need to maintain growth rates of 90-110 grams per day (AHDB 2015).

- <30kg lambs = **long keep** (stores): These lambs will need to maintain growth rates of 80-100 grams per day (AHDB 2015).

Feed supply and market outlets will play a big part in which lambs best suit a system e.g. there is no point buying in silage to feed pregnant ewes because the long keep lambs have eaten all the grass.

For home produced lambs, the most efficient systems will finish the lambs as quickly as possible as this will minimise the time that the lambs will be exposed to parasitism, trace element deficiencies, endemic diseases of the farm and other production limiting factors.

Regardless of system, it is important that growth rates are monitored via whole group or sample group weighing, to ensure that the lambs are on course to finish when expected.

If you would like advice or need help with lamb growth rates and nutrition, would be happy to help. Give us a call.