Management Notes

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College of Agriculture, Food & Rural Enterprise

Management Notes are prepared by staff from the College of Agriculture, Food and Rural Enterprise (CAFRE). CAFRE is a college within the Department of Agriculture, Environment and Rural Affairs (DAERA).

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Dairying

Richard Gibson

Dry cow management

You will now be starting to dry off cows for autumn calving herds. Correct management of cows at drying off and during the dry period is critical to ensure the best possible start in the subsequent lactation. Any mistakes made during this time can have consequences that will dramatically outweigh the cost of a good dry cow management plan.

Cows should be condition scored regularly and measures taken before dry off, so that cow condition can be maintained in a steady state during the dry period.

Ideally, cows should be giving no more than 15 litres per day at drying off as this reduces the risk of dry period infections developing. Milk yield leading up to drying off can be decreased by reducing concentrate feeding, but this may add stress to the cow. Milking should be stopped abruptly. Milking cows less than twice a day before drying off can increase the risk of new infections and delay the formation of the keratin plug. A high proportion of all early lactation mastitis cases originate from the dry period, but do not often show as mastitis cases until the next lactation.

In terms of the drying off procedure, hygiene is critical. Cows should be dried off as a separate job outside of milking. Taking small steps, such as washing down the parlour before the cows enter, using clean gloves and an apron can make a big difference. Milk recording data should be used to guide selective dry cow decisions. All cows should receive internal teat sealants, as they are very effective at preventing new infections, particularly during the high risk period just after drying off and just before/around calving. Cows should stand for 30 minutes after drying off, before being moved to a bare paddock or poor quality silage for a few days to allow the udder to dry off. All cows should be housed and fed a bespoke dry cow diet in the last three weeks before calving. This will maximise colostrum quantity/quality and minimise milk fever risk.

The dry period is also an ideal time to treat cows for fluke and worm as there is no milk withhold and cows are at a stage of low stress level. However, farmers should consult their vet or supplier on the selection of a fluke treatment as a limited number are licensed for use in dairy cows, either milking or dry.

Reseeding

Identify underperforming swards for reseeding. A new reseed should yield in excess of 10 tonnes of dry matter per hectare per year in the first few years and if managed correctly, maintain quality above 12 ME and 20% crude protein.

Getting the establishment conditions correct is vital for effective reseeding. Soil pH needs to be between 6 and 6.5 with phosphate and potash at index 2. Use soil analysis to determine the correct lime and fertiliser requirements. Much of the additional yield and quality from a reseed is driven by an improved response to applied nutrients. Sow grass varieties with similar heading dates which are suitable for the intended use and ensure mixes contain a maximum of four grass varieties.

Minimal cultivation and stitching-in techniques can be used to establish new or renovate existing swards.

- Minimal cultivation - if the old sward contains scutch grass or is heavily infested with docks, it should be burnt off before cultivation. Following hard grazing (3-5 cm) or silage cutting, spray off the regrowth. About a week later, (follow specific product recommendation), drill the seed into a shallow tilth prepared by harrowing the surface and roll afterwards.
- Stitching in – use this technique to improve swards with a significant proportion of perennial ryegrass. It is particularly suitable for open silage swards or stony ground. Most drills will sow grass seed into existing swards. Minimise competition from the existing sward by hard grazing or mowing for silage immediately before reseeding. Graze with light stock after reseeding to keep the existing sward from overwhelming the new seedlings.

Inspect all reseeds for signs of pest damage, particularly frit fly and leatherjackets.

Typically, for every kilogramme of nitrogen applied, (from bag/slurry) there will be a 25 kg DM response from a young vigorous sward at peak growing time. With this level of response, grass is cheap forage, especially when establishment costs are only likely to be incurred in the first of the potential five to ten years that the sward is down. It is reasonable to expect to reseed between 10 and 20 percent of the farm each year to achieve full grass growth potential. It is reasonable to expect to reseed between 10 and 20 percent of the farm each year to achieve full grass growth potential.

August top tips

- Sire selection for the following breeding season. Now is the time to select sires for the upcoming breeding season. How many replacement heifers do you need? Will sexed semen play a role in your breeding policy? Set your breeding criteria for sires now. Use PTA data (Predicted Transmitting Ability) to guide your selection. Ensure the replacement stock bred on farm are genetically better than the stock leaving your farm.
- If you are considering an autumn reseed, act now if you want any residual grazing on the reseeded area before end of October. Select grass varieties which suit your farm soil type and system, either cutting or grazing.
- Plan grass covers to maximise days at grass this autumn for your herd. If possible build your autumn grass plan on grass measuring software now. The aim is to build grass cover on your farm in September to allow a longer grazing rotation in October. Techniques and targets to help will be in next month's notes.

Beef and Sheep

Jack Friar

Finishing cattle at grass

Cattle that will be slaughtered off grass should now have been identified and concentrate supplementation introduced and increased, especially for continental cattle. These should only be cattle that are within 50 to 60 kg of the point of slaughter, approximately six to eight weeks. Earlier in the summer cattle could gain 1-1.2 kg/day, whilst this figure can drop down to 0.75 kg/day during August on grass alone as grass quality starts to deteriorate. Therefore, supplementation is required to maintain weight gain, growth and help reach ideal fat covers. As a rough guide, if grass quality is still adequate, cattle should be fed half a kilo of meal per 100 kg of liveweight. If grass quality is poor or supplies are low, this should be increased to 1 kg per 100 kg of liveweight.

Preparing for weaning and housing

Prior to weaning, all calves should be put through a strict health programme that includes dosing for parasites, especially lungworm and vaccinations for pneumonia. This should help reduce the risk of calves susceptibility to viral pneumonia at weaning if lungs are not parasite damaged. To further reduce the risk of pneumonia, there are a number of vaccines available on the market to cover most common viruses and bacteria that cause pneumonia. Most vaccines require a build up time to provide protection and programme courses should be completed in advance of weaning and housing to provide the best possible protection. This means starting vaccination programmes at least six weeks prior to planned weaning or housing date. Seek advice from your vet about the best product for animals that need treatment.

Autumn reseed

Reseeding grassland late August and into September can be rewarding if the weather is on your side. However, most of the time it is inviting trouble on a number of fronts. Notably, shorter daylight hours and falling soil temperatures can impact germination and there may be less opportunities to use post emergence spray or graze before the winter. Therefore, act as early as possible in the first few weeks of August if weather conditions allow. A reseed during this time has a better chance of a successful establishment.

If you are planning a full reseed this month, take into consideration the burning off period into the timescale. Remember to leave at least ten days between burning off and ploughing. If the reseed is occurring on an existing sward with a high infestation of weeds, such as docks, leave 14 days before ploughing.

Seeding rate for autumn reseeds normally require a higher rate of at least 14 kg of grass seed plus 1 kg of clover per acre. Early reseeds during spring and summer can get away with a lower rate due to more "perfect" conditions.

A full reseed also allows you to reassess water troughs locations in fields and reposition them to more practical locations for paddock systems.

If weather conditions are less favourable this month, stitching in grass seed is an option but only if perennial ryegrass still makes up at least 50% of the grass species (below 50% a full plough reseed is advised). Stitching is less weather dependent and a quicker way to carry out grassland rejuvenation. If carrying out this option, always apply lime as a remedy to the increased acidification of the seedbed from the old sward dying and decaying which can impact germination of new grass seed.

Bulls still out for spring calvers? Get them in

There may be a temptation to prolong the breeding season for spring calving sucklers, though anything served from start of August and holds will calf down from mid-may next year. A tighter calving pattern has the advantages of making life easier, in terms of reduced labour and also better herd management at calving and up to weaning, so do not be tempted to keep bulls out.

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Horticulture

Kieran Lavelle

Optimising Strawberry Production

A soft fruit event at Foxberry Farm provided an opportunity for strawberry growers to discuss nutritional aspects, which could improve productivity.

The increasing cost of fertilisers was debated as a particular concern to all growers since the strawberry plants nutritional needs must be met throughout all of the growing stages in order to achieve the crops yield potential. Yara fruit specialist, Giz Gaskin, suggested adaptations to the fertiliser programs that growers could implement to alleviate difficulties currently experienced in accessing products, which are becoming exceedingly costly due to the ongoing global situation. In that context, the speaker indicated that work previously carried out by the AHDB showed that the use of supplements alongside fertilisers, can improve the plants overall performance. Benefits include, optimising uptake of the nutrients applied, stimulating the plants natural defence system against diseases and pests and by providing micro-nutrients, which can also support the plants responses to stresses caused by environmental changes.

Attendees viewed protected and outdoor cropping areas, offering them an excellent opportunity to see the crop at different growing stages and providing them with useful information on sources of plants, substrates, crop protection products, fertilisers and other inputs used to produce fruit of excellent quality to meet market expectations. The group discussed the importance of obtaining good plant material to guarantee high yields and fruit quality. The speakers highlighted the importance of checking plant material on receipt and throughout their growth for the presence of pests and diseases, focusing particularly on the significance of a healthy root system to obtain optimum yields. Growers were also shown how to assess the plants capacity to produce flowers and fruit and how this can inform their plans for fertiliser regimes, which can ensure the cropping potential, is fully explored.

Innovation and Trends for Ornamental Crop Production

Recent visits to the Flower Trials in the Netherlands and the Horticultural Trades Association (HTA) National Plant Show in Birmingham highlighted the current trends and innovations that many ornamental growers are adopting and adapting to.

At the Flower Trials, new plant breeding lines were showcased and highlighted the latest features for marketing and sales. Vibrant colours, drought resistant and long flowering patterns were many of the marketing ploys used. One particular style caught the eye and that was the use of trio planting. For example, the use of a trio of selected herbs in a small 1 litre pot specifically for use in a BBQ or a trio of summer bedding plants with the perfect colour combination in a similar size pot.

Following on from the visit to the Netherlands, a trip to the National Plant Show organised by the HTA provided a great opportunity to see the latest trends and innovations currently been adopted by UK growers focusing on issues surrounding plastic use and the solutions on offer. Plant labels seem to be an ongoing concern for both nurseries and growers as the plastic free versions tend to fade quite rapidly thus losing the information on them. As well as plant labels, plastic free or recyclable containers is another hot topic. One industry expert highlighted the benefits and opportunities that exist for using biodegradable carrier trays for P9, P12, 1 litre pots, etc. These tend to have a shorter usage period and can be advantageous to a business if they can be biodegradable as well. The issues surrounding biodegradable containers continue to be their shelf life and discolouration due to a reaction with their environment.

Information Technology

Pamela Gardiner

Automated Heat Detection and Health Monitoring Systems

What is it?

Automated heat detection and health monitoring systems can help gain control of your livestock. They utilise information technology to provide you with relevant and timely data on your livestock that is viewable on your smartphone, tablet or computer. This enables you to make more efficient and effective decisions, whilst at home or away from the farm, to increase your livestocks fertility performance, maximise productivity and avoid potential health problems. Automated heat detection and health monitoring systems can reduce time watching your livestock and act as an early warning system with animal heat and health alerts sent directly to your smartphone. When systems are used in conjunction with segregation gates, cows in heat can be automatically segregated for AI or treatment at milking time, which saves on handling and labour costs.

The technology

Automated heat detection and health monitoring systems generally make use of an electronic neck collar, ear tag or pedometer on the animal. The collar, tag or pedometer constantly measures activity and behavioural patterns associated with fertility status and rumen function to determine when livestock are in heat, when they are showing irregular heat patterns and provide an early warning of ill health or distress.

Most systems will have a controller/antennae which continuously collects and processes the data from the collars, tags or pedometers before transmitting it via the internet to the systems app on your device.

The app will normally present the information in graphical and tabular format to ensure the data collected is easy to understand. It will also alert you to any heat events or potential health issues. Some apps allow you to log events such as inseminations and medical treatments and are compatible with third-party farm management software packages, which helps you to view and manage all your farm data in the one place.

Experience at CAFRE

Various automated heat detection and health monitoring systems have been employed in CAFRE over the years. Within the Dairy Centre, the automated parlour ID has an associated pedometer function, which can be viewed on the parlour computer after every milking and has been used as a heat detection aid. However, this system only downloads at milking and therefore does not give 24/7 live monitoring of cow activity. Heat detection collars have been used, mainly on maiden heifers, to monitor for heats and do seem to work well. Sensors have been used within the dairy herd to monitor heats, eating times, ruminating times and point of calving activity. The current system used within the CAFRE herd not only monitors heats, but also lying times, lameness and locomotion.

In CAFRE's experience, automated heat detection and health monitoring systems do greatly aid herd management, particularly were labour shortages are an issue, and provide you with the ability to monitor various parameters 24/7 remotely via the Internet. However, it should be noted that irrespective of the system employed, these systems should be viewed as a management aid and should not replace good stockman ship.

Final considerations

If you are thinking about implementing an automated heat detection and health monitoring system, consider the following:

- What issues are you hoping to resolve by investing in the system?
- Are there limitations on your farm – do you have good data connectivity to ensure data collected can be transferred and retrieved by you in a seamless and timely manner?
- What number and type of activity monitors are required – pedometers, tags or collars?
- What is the battery life/back up procedure when a battery is dead?
- How is the data accessed – is it via an app on any device and accessible by multiple users if required? Is it compatible with an existing farm software package you may have?
- How is the data presented – is it simple, timely and in a user-friendly format?
- What support package is available from the supplier?

If you are interested in finding out more about automated heat detection and health monitoring systems for your livestock, contact your local CAFRE Adviser.