

Management Notes



Richard Gibson

Dairying

Transition cow management

The transition period is from when the cow is dried off and up to the calving period. Problems that can arise from poor management during this period include udder oedema, milk fever, retained placenta (cleanings), displaced abomasum (stomach), laminitis (lameness), metritis (uterus infections), ketosis and fatty liver syndrome, all of which result in lost profitability. Poor management may also result in increased calf mortality due to difficult calvings and weak calves.

A short or absent dry period greatly reduces the number of secretory cells in the mammary gland and reduces milk lactation yields. Research has shown that cows dry for over 60 days give approximately 125 kg more milk the following lactation, compared to cows dry fewer than 40 days, which produce around 250 kg less milk the following lactation.

Body condition scoring

Ideally cows should be dried off in condition score 3 and maintained at this condition score until calving. Where possible, cows at drying off

should be grouped as fat average or thin. Cows which are fat, should be offered a restricted dry intake. This can be achieved by offering the animals straw or restricting their silage intake or grass intake. In contrast, cows which are thin should be offered high quality silage/grass as well as a small amount of concentrate to gain body condition score.

Nutrition

During the last four weeks of the dry period, many changes are needed in the nutrition and management of the dry cow. It is important that the rumen bugs and rumen papillae in these cows are adapted to the feedstuffs being fed to milking cows.

Much of the early dry cow's diet should consist of forage containing a high fibre content to keep the rumen expanded and working. Ideally, a low potassium forage such as whole crop or specific dry cow silage are the best options. The typical energy requirement at week -8 to -3 pre calving is 90 MJ/day. During the close-up stage, energy requirement increases to around 120 MJ/day. Therefore, diet nutrient density needs to be increased as this stage especially due to the lower dry matter intake (DMI).

Supplementation during this stage is required to meet the dry cow's energy needs due to the rapidly growing calf. To meet this demand in the Greenmount Campus herd, dry cows are offered 1.0 - 2.0 kg of a pre-calver feed containing 250 to 300 g digestible undegradable protein (DUP) freshweight/day. Sources of DUP include protected soya or prairie meal. At this stage of the gestation cycle, the developing calf has a large nutrient demand for protein. Cows are therefore offered a high protein concentrate daily.

Transition feeding - one week before calving

During this stage, the dairy herd at Greenmount Campus are fed the same concentrates and forages as the milking cows. This offers the opportunity to adapt the cow's rumen to the higher levels of concentrate feeding after calving by introducing up to 2.0 kg of concentrate before calving. Feeding the same diet before calving that is fed after calving aids the rumen adaptation and transition after calving and helps to reduce the stress of calving.

Housing

Ensure comfort in both cubicles and lying surface is at least similar to the milking herd. Other aspects to consider are stocking density ($\leq 85\%$), feed space (90 cm/cow), cubicle hygiene and provision of clean water. Furthermore, if practically possible, minimise the number of animal movements, particularly in the last 10 days of pregnancy. Research has shown that mixing pre-calving heifers with dry cows in the close-up period can lead to reduced bullying of heifers when entering the main herd, so this may be an option if practically feasible. Also ensure cows receive a foot trim at drying off and maintain footbathing during the dry period.

Summary points

- Body condition score (BCS) cows 8-10 weeks prior to drying off to achieve target BCS of 2.75 - 3.
- If possible, group cows into close and far off and feed accordingly i.e., palatable bulky forage low in potassium.
- Carry out foot trimming and continue to footbath.
- Feed a dry cow mineral.
- Ensure suitable dry cow accommodation to maximise cow comfort.
- Minimise stress.
- Talk to your vet/nutritionist if transition diseases are a problem.

September top tips

- Going for an autumn reseed, get moving now on this if you want any residual grazing on the reseeded area before end of October. Select grass varieties that suit your farm soil type and system, either cutting or grazing.
- Building grass cover to maximise days at grass this winter 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.



Jack Friar

Beef and Sheep

Decision time for lambs - sell as stores or finish?

If you are thinking of finishing your own lambs, remember a lamb will eat almost as much as a dry ewe on a grass-based system. These lambs may be using important grass supplies, which is one of several important factors towards achieving a good lamb crop pre and post-tupping. If you think grass supplies could be an issue over the next few months due to less fertiliser applications or poor weather conditions, it makes sense to sell them as stores.

If you decide to sell as stores, group lambs by breed, sex and weight. Batch lambs by estimated finishing time. These can range from short keep (less than 6 weeks to finish) to long keep

(12+ weeks to finish). An even batch of lambs will help both the seller and the buyer at the sale.

On the purchasing side of stores, you need to decide on either short, medium or long keep. Ideally, all lambs purchased should be removed from the grassland by the end of December. This is required to allow the swards time to recover before spring growth. Therefore, ask yourself, how much grass is available? And how long you intend keeping them for?

Performance of lambs over the next few months will be determined by lamb type, sward quality, parasite control and hopefully the absence of prolonged periods of wet weather. To speed up finishing, creep feed will reduce the slaughter period, but this will incur a high cost.

Overall, if you are thinking of finishing your own lambs or considering buying store lambs, always complete a budget. Allow for the cost of bringing them through to finish and the expected value of finished lambs. The latter is often difficult to

estimate, therefore look at the market trends in recent years.

Preparing housing for winter period

In anticipation of housing cattle in some parts of the country, ensure all feed barriers, gates and water troughs are in good working condition. Also ensure houses have been washed and disinfected to prevent the spread of disease. Complete these jobs as soon as possible, as a sudden change in weather and ground conditions could mean cattle needing housed unexpectedly.

Spring calvers – it's scanning time

Scan spring calving cows and heifers now. As mentioned in previous notes, this is not the year to be carrying passengers, especially into this winter. Therefore, if empty cows are identified, consider early weaning and/or introducing supplementary feed to allow for them to be slaughtered or sold before the winter housing period. This will help savings on winter feed and allow for these cows to be sold before the traditional flow of cull cows onto the market after the main weaning period.

Watch out for:

Autumn calvers

Autumn calving is now well under way on many farms. Close observation of these cows is needed both pre and post-calving. Large calf size can be more of a problem with autumn calving, particularly where grass has been plentiful. Be prepared and have the necessary calving



equipment and items to reduce mortality after birth available. Grass tetany caused by magnesium deficiency, can also be a problem in autumn calving herds, particularly where there are stress triggers, such as, changeable weather or prolonged wet periods. The most popular preventative measures are magnesium lick buckets and boluses.

Fertiliser closing date

Reminder that from 15th September the closed period for spreading chemical N and P fertiliser to grassland begins. Chemical fertiliser containing N and P cannot be applied until after midnight 31st January (if ground and weather conditions permit).



Leigh McClean

Crops

CEREAL MANAGEMENT

Variety selection

The first step to achieving high yields is choosing varieties with good disease resistance scores, high untreated yield and favourable agronomic profiles. The AHDB recommended list is available at <https://ahdb.org.uk>. With some potential delays in deliveries for seed from Great Britain, ensure to make seed orders early. Leaving to the last minute could mean a reduced variety choice or delays in delivery.

cultivate, chit and spray off weeds reducing the weed seed bank.



Cultural weed control

The earlier harvest presents a chance to get on top of grass weeds by using stale seedbeds. Light cultivation after harvest encourages a flush of weeds which can be burnt off before ploughing and drilling. Where grass weeds are known to be a problem delay drilling, if conditions allow, and use high seed rates to help the crop smother out unwanted grasses. If the grass weed burden is severe and impacts yield, consider spring cropping, which allows multiple opportunities to

Aphid monitoring and virus control

Infection by migrating winged aphids is the most common route for Barley Yellow Dwarf Virus (BYDV) infection in autumn cereals. Destroy the 'green bridge' for wingless aphids by burning off seven to ten days before ploughing or allowing 14 days between ploughing and sowing. As autumn progresses, aphid migration and consequent BYDV infection pressure diminishes. As early drilled autumn cereals are at greater risk, you

should balance this against later sowing, slower emergence and potentially poorer establishment.

Only apply pyrethroid sprays when aphid colonies, not individual aphids, are present on leaves, to slow development of pyrethroid resistance. A few winter barley varieties show tolerance to BYDV, meaning if infected suffer less of a yield penalty in severe outbreaks than non-tolerant varieties. As small quantities of tolerant seed are available this autumn, consider these for early sown high risk situations.

Slug monitoring

Assess slug numbers before winter crops are sown. Set traps on damp soil using dry bait under a tea tray sized cover, leave overnight and check for slugs the next day. Removing green cover reduces their habitat and feed source. If slug numbers exceed four per trap in cereals or one per trap in oilseed rape, consider applying ferric phosphate slug pellets if emerging crops are still at risk.

POTATO MANAGEMENT

Late season management

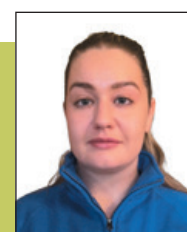
Maintain blight spray programmes until after haulm desiccation to avoid late blight developing. Blight strains insensitive to Fluzinam are common in Northern Ireland, meaning this active should no longer be relied on for tuber blight control. The EuroBlight late blight fungicide table, available online, provides alternatives to fluzinam such as Ranman Top and Infinito, which have high tuber blight ratings and good antispore activity.

Desiccation
Regular trial digs indicate when tuber size has reached your market specification, allowing desiccation to be timed accordingly. PPO inhibitors, Spotlight Plus and Gozai take longer to achieve the same effect as diquat. Make the first application seven to ten days earlier than usual. They work best in bright, sunny conditions and good spray penetration into the canopy is key. Therefore, use slow forward speeds, high water volumes with forward and backward facing nozzles applying a medium quality spray. Including a fungicide, either Ranman Top or Infinito, can improve the desiccants efficacy whilst also having good activity on tuber blight.



Store and equipment preparation

Spores of many storage diseases lie dormant in the dust and debris remaining in stores, boxes and equipment. Thorough cleaning and disinfection is one of the most effective ways to avoid carryover of disease from previous years. Significant reductions in infection can be achieved by thoroughly power-hosing or vacuuming stores and equipment before the new crop is harvested.



Lauren Curry

Energy Management

As energy costs and availability become more unstable and global policies continue to focus more on reducing our carbon footprint, interest in renewable energy generation is increasing. Through the installation of renewable energy technologies, agricultural businesses are well positioned to offset greenhouse gas (GHG) emissions from agricultural practices, reduce business energy costs and provide renewable energy for the wider community.

Renewable heat sources

1. Solar Thermal Panels
2. Air/Ground Source Heat Pumps

Both solar thermal and air/ground source heat pump systems generate heat which can be used to heat water and/or air. While solar thermal panels can be used to generate electricity, indirectly by producing steam to drive a turbine, it is less efficient than direct electric generation by solar photovoltaic panels.

Industry guidelines would suggest that air and ground heat pumps have a lifespan of 10-15

years, while solar thermal panels may have a lifespan of up to 30 years.

Both air source heat pumps and solar thermal panel systems have the benefit of being quick to install with minimal disruption, as units are attached to existing infrastructure. Ground source heat pumps require longer installation periods as large areas of landscape will be disrupted during the installation process. Once installed there is minimal impact on the land.

For these reasons solar thermal and air source heat pumps have a lower installation cost, with ground source heat pumps requiring additional capital investment.

Renewable electrical sources

1. Solar Photovoltaic (PV)
2. Wind Turbine
3. Hydroelectric Generation

These three systems are used to generate electricity. Solar photovoltaic uses semiconductors, while wind and hydroelectric

turbines use mechanical action to drive a generator. These electrical generation systems can be used independently, or in conjunction with an electricity grid connection. This flexibility in installation allows these electrical generation methods to, potentially, power all electrical functions of the farm business. All three technologies have a lifespan up to 50 years.

Solar photovoltaic panels are typically installed on pre-existing; allowing them to be the lowest cost investment option. Wind and hydroelectric turbines have longer planning and installation periods. Typically, the wind turbine itself only accounts for 60-70 % of the total project costs, with additional costs including supporting infrastructure and engineering works. In comparison, hydroelectric generation requires bespoke design which is needed to mitigate against local ecological disruption. This usually requires a significant level of input from specialist consultants which leads to hydroelectric generation normally requiring the highest capital input.

Additional considerations

Maintenance

Renewable energy technologies, generally, require minimal maintenance which is achieved through annual servicing. The efficiency of solar panels is also maintained by annual washing in line with manufacturer's guidelines.

Planning permission

Planning requirements for the installation of renewable technologies should be clarified with the relevant planning authority.

Northern Ireland Electricity (NIE) Application

Grid connection for your renewable energy generation is subject to a successful NIE application and is dependent on the size of the renewable generation system and whether your current connection is single or 3 phase. Even if the installation is below the threshold for requiring NIE application and energy will not be exported, it is critical that individuals inform NIE so they can account for this energy generation and confirm feasibility of your proposed installation, as export allowances are dependent on regional restrictions. NIE have no involvement in purchasing contract agreements for exported electricity, this needs to be agreed with an export supplier.

Monitoring Software

A monitoring software platform allows you to easily identify production and consumption levels as well as technical and financial performance. Information can be accessed via computer or mobile apps by installers, maintenance staff, and system owners. This maximises the systems operation time by identifying and resolving faults quickly.

Guarantees

It is important that purchasers consider the available manufacturer, performance and installation guarantees and have a full understanding of what is covered under each guarantee and the duration of cover.