Management Notes

cafre
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

Soil analysis

As fertiliser costs continue to rise, carrying out soil analysis this month should be priority. Only take soil samples when fertiliser, slurry, manure or lime has not been applied for at least 12 weeks. If you are planning to apply slurry to grassland soon after the closed period ends, take soil samples first.

Soil sampling

Soil augers are available for loan from DAERA Direct offices on an appointment basis only. Contact your local office either by phone (0300 200 7840) or email to arrange collection and return of augers. Email addresses are on the DAERA website. Soil sampling kits are also available from your local office. These can be collected or posted to you.

After taking the soil samples, place them in the pre-paid envelope provided as part of the sampling kit and post them directly to NRM.

When sampling soil:

- Always use a corer. Never use a spade or lift a handful of soil from a ploughed field. A poor sample is worse than none at all.
- Take cores down to 75 mm for grassland and 150 mm for arable.
- Take cores from the field by crossing it in a 'W' pattern.
- Collect 20 cores from the field, bulk them together, mix and put a sub-sample in a labelled sample bag/box.
- Do not sample near water troughs, gates, headlands, trees, dung or urine patches or areas where stock shelter.
- Each sample should not represent more than four hectares. Divide large fields, noting and sampling each area separately.
- Do not put cores from different soil types together in a sample.

Tackling digital dermatitis

If digital dermatitis is a problem this winter, routine foot bathing is the most practical method of control. However, to be successful it must be carried out effectively. Without regular foot bathing, the incidence of digital dermatitis will increase weekly during the winter.

Ideally, provide a double footbath; a bath to wash feet, followed by a treatment bath. The wash bath removes manure which reduces the effectiveness of the chemical in the treatment bath. Depending on the level of manure, cleanliness of the cow's feet and floor before entry, the pre-wash footbath may need changed during milking. If using a pre-wash bath allow one cow length between the pre-wash and treatment baths, along with good drainage to remove excess water. If there is not enough space to fit in both baths, wash the cows feet with a hose before they leave the parlour on the way out to the foot bath. When doing this adjust the hose to a softer spray to reduce the risk of a mastitis flare up.

To allow time for good chemical penetration, the cow needs to take at least three strides through the treatment bath. The bath must therefore be at least three metres long. Fill the bath to a depth of 10 cm to ensure the foot is covered up to the top of the hoof. Accurately measure the amount of chemical required. This includes topping up. Dilute mixes are not as effective and more concentrated mixes may damage cows feet, leading to more incidences of lameness.

The frequency of treatment depends on the incidence of infection. The minimum regime is to foot bath after four consecutive milkings each week to minimise digital dermatitis in dry cows. It is also important to continue foot bathing throughout the dry period.

Getting the cow back in calf

For autumn calving herds breeding is underway. All cows that are six weeks calved should have displayed a heat and are past their 'voluntary waiting' period. Heats seen after this should be bred and a record of the service made. Assess breeding efficiency by working out the submission rate for the last three weeks; how many cows that completed their 'voluntary waiting' period three weeks ago have been served.

January's top tips

- Use heat detection aids/systems to improve accuracy.
- Check adequate slurry storage is available until the spreading period opens on 1st February.
- Complete your nitrogen loading calculations and keep a record of the figures.
- Submit slurry export records online to NIEA by 31st January. The exception is derogated farms where export records are submitted as part of the fertilisation account by 1st March.

Beef and Sheep

Nigel Gould

Housing ewes and pre-lambing nutrition

Milder weather conditions that lasted later into the autumn of 2021 resulted in higher than average grass growth for the time of year on some farms. This led to relatively good grass covers on paddocks closed in October. Resist the temptation to go back and graze these paddocks again as this grass will be more beneficial to the flock in spring. This is particularly the case with the increasing cost of chemical fertiliser in the last six months. The best option on most farms at this stage is to house ewes.

Unclipped lowland ewes on slats or mesh require a floor space of at least 1.0 square metre per ewe reducing to 0.9 square metres per ewe for unclipped hill breeds and clipped lowland ewes. Straw bedded ewes require at least 1.1 -1.4 square metres per ewe.

Allow at least 420-475 mm feed space per ewe where concentrate is offered. If ad-lib silage is offered without concentrates, allow a minimum of 200 mm per ewe.

Silage will be the forage of choice on most farms. Use silage analysis, scanning results and body condition score (BCS) to determine a suitable concentrate supplementation strategy. 70% of fetal growth occurs in the last six to eight weeks pre-lambing, while ewe intake capacity is reduced by 30% in the last six weeks. This means that in the majority of cases, silage alone will not meet the nutritional demands of the ewe pre-lambing and concentrate supplementation is required. Adequate nutrition during this critical period will lead to more viable lambs at birth, increased quality and quantity of colostrum and reduced incidence of metabolic diseases such as pregnancy toxaemia (twin lamb disease).

The table below shows the amount (kg) of concentrate supplementation required for twin bearing ewes with a BCS of 3 for silages of differing quality.

Weeks before lambing	Precision chop silage			Big bale
	Excellent quality (12 MJ)	Average quality (10.4 MJ)	Poor quality (9.6 MJ)	Excellent quality (11.7 MJ)
4 - 6	0.00	0.20	0.40	0.25
2 - 4	0.35	0.53	0.70	0.50
0 -2	0.50	0.82	1.00	0.70
Total fed (kg)	12	20	30	21

Clostridial booster vaccine for sheep

Clostridial vaccination is common across sheep farms with boosters required annually. Most manufacturers recommend booster vaccines are administered to ewes four to six weeks pre-lambing. Timing is important to ensure maximum passive transfer of immunity to lambs. If there is a wide spread in lambing dates, the vaccine may need to be administered to the flock in batches. This usually provides lambs with protection for the first three weeks approximately, after which clostridial vaccination of lambs will be required. The relative cost of the vaccine and the potential financial losses due to clostridial disease make it a worthwhile investment.

Prepare for spring calving

Calving will start in most spring calving herds in the coming months. Prepare in advance of by having facilities and supplies ready. Having adequate facilities and avoiding a last minute rush will reduce stress and the likelihood of farm accidents related to cows at calving time. A general rule of thumb is to allow one calving pen for every ten cows, but more will be required where a very compact calving is anticipated. Every suckler farm should have a good calving gate, including a part which can be opened to allow safe assistance of calves to suckle. Essential items include calving aids/ropes, iodine solution, arm length gloves, calving lubricant, disinfectant, artificial/frozen colostrum, a stomach tube and/or feeding bottle. Have plenty of straw in store. Use plenty in the calving pens, disinfect and clean out between calvings to minimise the build-up of disease in the shed. After the calf is born, treat navels with a strong iodine solution. Ensure an adequate quantity of colostrum is consumed by the calf as soon as possible after birth (10% of calf body weight within six hours). The ability of a newborn calf to absorb antibodies from colostrum deteriorates rapidly from birth. If thawing frozen colostrum, do so in good time. Freezing in bags or containers with larger surface areas will reduce thawing time. Overheating will destroy antibodies. Never use a microwave to defrost colostrum. Be mindful of the risk of bringing disease into your herd via colostrum from another herd.

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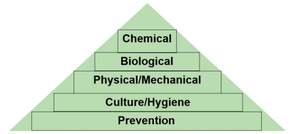
Horticulture

Kieran Lavelle

Improving plant health using biostimulants

Optimising plant health has numerous benefits for the grower and crop production. With further reductions in available pesticides, new strategies are being investigated for the control of pest and disease pressures. A healthier plant has better abilities and defenses against pests and diseases. This results in less dependence on the already reduced number of pesticide products.

Analysing crop nutrient requirements throughout the growing season is fundamental in maximising plant health. Carrying out tests such as pH, EC, tissue and leaf sap analysis regularly provides insight into the current growing conditions and the plants requirements . Tailoring a programme that covers both the macro and micronutrients ensures nutrient deficiencies are avoided and unnecessary plant stresses are kept to a minimum.



The incorporation of biostimulants into a crop production plan can ensure that specific plant nutrients are made available at key stages of growth. The term 'biostimultant' is defined as 'a substance or microorganism that, when applied to seeds, plants, or on the rhizosphere, stimulates natural processes to enhance or benefit nutrient uptake, nutrient use efficiency, tolerance to abiotic stress or crop quality and yield'.

A plant biostimulant contains substances and/or microorganisms that stimulate natural plant processes. The effect is independent of nutrient content and will improve one or more of the following characteristics of the plant or the plant rhizosphere:

- Nutrient use efficiency.
- Tolerance to environmental stress.
- Quality traits.
- Availability of nutrients in the soil or rhizosphere.

The Bio4Safe database presents scientific data on plant biostimulants. You can search generally on any search term or filter by desired effect, biostimultant type or crop. After searching, you get an overview of biostimulants.

A preventive approach to plant health yields greater results than a curative one. Methodical crop walks and logging of nutrient analysis on a regular basis are fundamental in achieving optimum plant health results. If you require further information, please contact Conor Gallinagh, Ornamental Crops Development Adviser, Horticulture Branch, CAFRE: 07919 695676 or conor.gallinagh@daera-ni.gov.uk

Season extension for strawberry production

Strawberry fruit production from May to September is well established in Northern Ireland (NI), with supermarkets sourcing the fruit from various parts of the world to meet year round demand. There are opportunities to meet the increasing interest in locally produced fresh strawberries beyond the conventional main season.

Growers in NI are prolonging strawberry production by using novel producing varieties grown under protection.

To further explore market opportunities, growers are looking at new developments from manufacturers who produce films which can optimise conditions under their standard tunnels. The growing capabilities can be enhanced by considering the erection of double or twin-skin tunnels or glasshouses.

Under double or twin-skin poly tunnels, temperatures can be kept between two and 12° C higher than outdoors, depending on season and site specific factors. Suitable films used to cover these structures have heat retention and high light transmission capabilities. Growing requirements vary for different varieties between June bearing and ever-bearing varieties. However, using supplementary light and heat under these structures allows you to plant earlier or later in the season, while maintaining optimum environmental conditions for the plants to grow and fruit.

As light levels and temperatures are limiting factors for the strawberry plants to grow and produce fruit, the use of double or twin-skin tunnels and glasshouse systems have the potential to extend production further into the shoulders of the season and also through the winter in NI.

CAFRE staff are developing projects that will allow the demonstration of strawberry season extension. If you require more information, please contact Berta Cunha, Soft Fruit Development Adviser, Horticulture Branch, CAFRE: 07500 048294 or berta.cunha@daera-ni.gov.uk

Pigs

Liz Donnelly

Streaming pigs

As litter size continues to increase, it is inevitable there will be more below average weight pigs at weaning. Although smaller at weaning, these pigs do have great potential. However, to unleash this potential they require special care and attention and this is where streaming comes into play.

Streaming involves removing the smallest pigs from the main batch at weaning and rearing them in 'intensive care' pens. The small pigs can either be kept together in a pen in the flat deck or preferably housed separately from the main group in specifically designed rooms. Having several specifically designed rooms, each containing small pigs from one week's weaning, means it is easier to provide the extra care they need, as they are all in one house.

The benefits of streaming include:

- Improved performance and profitability of smaller pigs.
- More uniform pigs with reduced pen/room clearance time.
- Reduced levels of stress for the smaller pigs.
- Improved pig health and reduced mortality.

One of CAFRE's Pig Technology Demonstration farmers uses streaming to improve the performance of small pigs after weaning. On this farm 120 pigs are weaned each week. The 30 smallest pigs, weighing between 4.8 and 5.7 kg, are moved into a separate small room for special care. To reduce environmental stress, the temperature in this room is higher than that in the main flat deck. Pigs in this room are fed regularly throughout the day using a feeder which automatically dispenses feed as a gruel. Extra water is also provided in easily accessible bowls. The small pigs are kept in this accommodation for two weeks, during which time they gain up to 4.0 kg. Taking this a step further the ideal situation would be to stream the small pigs at weaning and keep them together as a group until at least 30 kg, before moving them to finishing pens. This may seem extreme, but as litter size and the number of small pigs increase, providing specialist accommodation for pigs up to 30 kg may become the norm.

Environmental enrichment

On 1st November last year Red Tractor introduced new standards. One of the main changes concerns the provision of environmental enrichment. The standard states that 'pigs must have permanent access to environmental enrichment to satisfy their investigation and manipulation behavioural requirements'.

Two points to take from this standard include:

1. All pigs, including sows and piglets in farrowing pens, dry sows, gilts and boars must have access to enrichment at all times.
2. To meet the investigation and manipulation behavioural needs of pigs, a combination of materials will be required. Materials such as plastic piping, wood, rope, salt licks, balls, rubber, toys can no longer be used on their own. They need to be used in combination and guidance is provided in the Red Tractor Pig Standards manual.

As indicated above suckling pigs also require enrichment. The photograph below shows a range of materials that can be used for suckling pigs. These include a combination of plastic toys, hessian sack, wood and rope. If using rope, it must be a natural rope; synthetic rope is not acceptable. Also, to prevent harm to the pigs and to allow them to investigate and manipulate wood it must be untreated and soft in nature.

They are then moved into a pen in the main flat deck along with pigs weaned that week; that is the streamed pigs are two weeks older than the rest of the pigs in the room. The small pigs from that week's weaning take their place in the 'intensive care' system.