Teagasc/Irish Farmers Journal

BETTER FARM BEEF CHALLENGE

AUTUMN WALKS 2019

IRISH FARMERS JOURNAL farmersjournal.ie

teagasc
Agriculture and Food Development Authority
www.teagasc.ie

John and James Flaherty
Cordal, Castleisland, Co Kerry
Farm walk date and time:
Tuesday 10 September 5pm

Thomas Holmes
Tullysleve, Ballina, Co Mayo
Farm walk date and time:
Thursday 12 September 5pm

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04 John & James Flaherty

12 Thomas Holmes

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Adam Woods
Beef editor,
Irish Farmers
Journal

On behalf of the stakeholders of the Teagasc/*Irish Farmers Journal* BETTER Farm beef challenge, I would like to welcome you to our two BETTER farm autumn open days. We hope you will find these farm walks informative and practical and that you can take home some key messages to improve the profitability of your farm.

While increasing output and subsequent gross margin has been a central theme to all farms in the programme, it is the manner in which this higher output is achieved that brings the greatest learnings. All of the programme farms have placed a huge emphasis on grass and growing and utilising as much of it as possible in a bid to reduce costs – particularly as we face into autumn grazing. Achieving high animal performance over the winter is also critically important. Looking at factors such as ventilation and winter health regimes is key here. Most importantly, I want to thank John and James and Tommy and their families for opening up their farms to public view. With the support of Martina Harrington, Tommy Cox and John Greaney, as well as their local Teagasc B&T advisers Eugene O'Doherty and Tom Kelly, I have no doubt that these two farms will continue to grow and improve their businesses in the years ahead. Finally, I would like to acknowledge the continued support of the programme sponsors FBD, ABP, Dawn Meats and Kepak.

Martina Harrington
Teagasc/ Irish Farmers Journal BETTER farm beef challenge manager, Teagasc

On behalf of the Teagasc/*Irish Farmers Journal* BETTER Farm beef challenge management team, I would like to welcome you to the farms of John and James Flaherty and Tommy Holmes. It has been a pleasure to work with both farms and I want to thank them, and their families, for their openness and willingness to work with us over the last two and a half years. I would also like to take this opportunity to thank their local Teagasc B&T advisers Eugene O'Doherty and Tom Kelly and the Flahertys' previous adviser Edward O'Mahoney for their contribution to the programme.

The BETTER Farm beef challenge has been designed specifically to demonstrate how the adoption of key technologies can benefit suckler farms both practically, in the day-to-day running of their farms, and financially. The strength of the programme is that these technologies, such as improved grassland management, soil fertility, breeding and herd health for example, are being adopted not on research farms but on commercial family farms. The purpose of these walks is to demonstrate the positive effect of the changes made by the Flahertys and Tommy Holmes on their respective farms. I hope you find the days useful and can identify at least one change that you can bring home to your own farm to benefit you. Thank you for your time, enjoy the walks and take the opportunity to ask questions.

Tommy Holmes

Welcome to Mayo

On behalf of myself and my and family, I would like to welcome everyone here today to Ballina, Co Mayo. I hope you have an enjoyable day and that you find the visit both informative and worthwhile.

Since joining the Teagasc/*Irish Farmers Journal* BETTER Farm beef challenge in early 2017, the farm has undergone many changes.

These changes were all simple steps, but are all having a positive impact on the performance of the farm.

The completion of the farm plan gave me a clear focus on the areas I needed to improve on in order for the farm to become more efficient.

The key areas I focused on improving were grassland management, soil fertility and herd health, with the overall aim being to increase beef output on the farm.

I have always been conscious of the importance of good grassland management and over the past three years I further developed my skills in this area by measuring with a platemeter and using PastureBase, as I am fully aware of the importance of having high-quality grass in front of stock at all times and the role this plays in maximising animal performance.

Along with managing the grass quality,

The home block.

The out block.

I am continuously aiming to increase the volume of grass grown on the farm too. Fundamental to this is increasing my soil fertility to the required levels.

Along with grass and soil fertility, I put a huge focus on maintaining good herd health on farm.

With the increased volume of stock coming through the farm gate each year, this raised the risk of a herd health breakdown.

I have put a number of measures in place, such as vaccinating and improving ventilation, to reduce the possibility of such a breakdown occurring.

Finally, I would like to give a special thanks to the Teagasc BETTER Farm programme advisers Tommy Cox and John Greaney and my local Teagasc B&T adviser Tom Kelly for their continued advice and support.

We would also like to thank Teagasc and the *Irish Farmers Journal* for allowing us to participate in this programme and acknowledge the industry stakeholders for their continued support.

Tommy Holmes

Maxed-out in Mayo

Tommy Holmes is flying the flag for Mayo in the BETTER Farm beef challenge, which commenced in 2017. Tommy is farming 18ha of fragmented land in the townland of Tullysleeve on the outskirts of Ballina, Co Mayo.

The land itself can be described as predominantly free-draining, which is capable of growing high volumes of grass annually.

A 15-cow autumn-calving herd is in place on the farm, with the plan being to increase numbers to 20 and calve during a strict eight-week window over the course of August and September.

Traditionally, an Angus-type cow was preferred, but, in recent years, Tommy has moved towards a more continental-type cow, with the aim being to drive up carcase weights and grades.

While suckling is a key part of the farm's system, Tommy's main enterprise is a bull-beef finishing operation. He plans to put over 100 bulls through the farm's gate each year. These bulls will consist of mixture of grass cattle purchased in the spring that will go to grass for the summer and get finished the back end of the year, while the other batch, which will be purchased in the backend of the year and early spring, will remain indoors and be finished throughout the summer.

The advantage of this double purchasing system is that it maximises use of sheds which would otherwise be empty during the main grass season and allows the farm's output to be increased without affecting the grassland stocking rate.

The farm has continued to make steady progress since the start of the programme, with targeted stock levels currently in place on the farm. With huge pressure coming on bull beef this year, Tommy will try to move towards under-16-month bulls as opposed to his traditional 20-month bull system. To do this, he will have to be diligent on the age and weight of the cattle he is purchasing.

Table 1: Performance targets on Tommy's farm

Measure	Base year 2017	2018	Target 2021
System	Suckler to bull beef Store to bull beef	Suckler to bull beef Store to bull beef	Suckler to bull beef Store to bull beef
Stocking rate (LU/ha)	1.89	2.5	3.2
Land base (ha)	18	18	18
Gross output/ha (kg)	727	1,238	1,500
Gross output/ha (€)	1,230	2,300	3,460
Variable costs (€)	800/65%	1,579/68%	1,903/55%
Gross margin (€/ha)	430	721	1,557

Grass: the drive for five in Mayo

Grazed grass is the cheapest source of feed in Irish livestock production systems and maximising the amount of quality grazed grass in an animal's diet over their life time will have a hugely positive impact on the productivity and profitability of a farm.

Consistently over the last three years, Tommy has been growing close to and over 15t DM/ha/year. The target for most farms is 10t DM/ha/year, while, in reality, 6t to 7t DM/ha/year is all most drystock farms are can achieve. For Tommy, growing double the norm is no mean feat and does not happen by accident. It is a direct result of five key stepping stones:

1. FARMER MINDSET

The mindset of the farmer plays a huge role in good grassland management. Tommy aims to prolong the grazing season as much as possible on the farm and his management at the shoulders of the year are key to this. He gets stock to grass as early as possible and aims to keep as much stock out as possible late into the year. Each extra day at grass in the spring is worth €2.70/animal, while each extra day at grass in the autumn is worth €1.80/animal.

2. INFRASTRUCTURE

Prior to commencing the programme, a rotational grazing system was in use on farm, using predominately temporary fencing.

In year one, Tommy took the plunge and installed a lot of permanent fencing on the farm. Table 1 **(page 16)** shows the full costings of dividing 20 acres. He doubled his paddock numbers and there are now over 30 permanent divisions in place on the farm today. All of these have the potential to be subdivided further us-

Continued on page 16

Figure 1
Cumulative paddock yield 2018

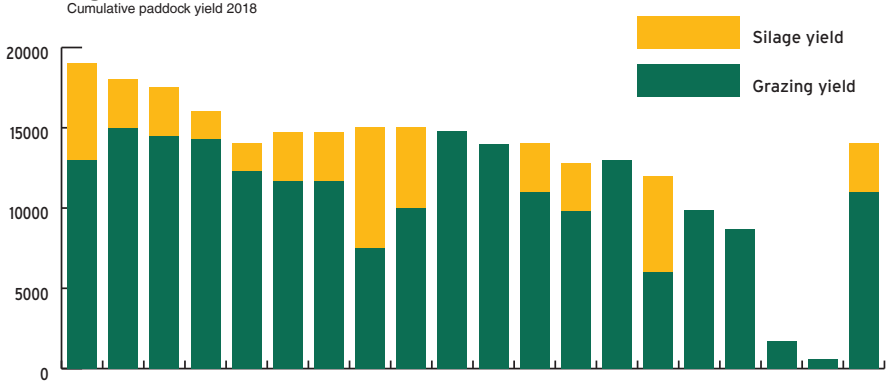


Table 1: Paddock costings for 20ac

Item	Number and price	Total
Water trough	5 troughs @ €140/unit	€700
Water fittings	14 fittings @ €5/unit	€70
¾ heavy-gauge piping	4 rolls @ €50/unit	€200
Strainers	22 strainers @ €25/unit	€550
Spring gate handles	19 @ €10/unit	€190
Posts	65 @ €8/unit	€520
Wire	2 rolls @ €60/unit	€120
Other	Insulators/staples	€60
Total (20 acres)		€2,480
Cost/acre		**€124**

Table 2: Grass seed mix

Seed variety	Amount	Heading date
Abergain (T)	3kg	5 June
Aberchoice (D)	3kg	9 June
Dunluce (T)	2kg	30 May
Drumbo (D)	3kg	7 June
White clover	0.5kg	

ing temporary fencing if required.

Extra water troughs were strategically placed around the farm which could provide a water supply to a number of paddocks at any one time. The ideal residency in a paddock for Tommy is two days because he feels he gets adequate clean-outs and is not negatively affecting regrowths.

3.GRASS BUDGETING

"You can't monitor what you don't measure" and this is particularly true in relation to grassland. Tommy religiously walks the farm weekly to measure grass growth and assess farm covers. This information from PastureBase equips Tommy with the knowledge of where surpluses or deficits of grass are on the farm, but also ensures that grass is at the correct stage for grazing. Pre-grazing yields at 1,300kg to 1,600kg DM/ha (8cm to 10cm) is the target for all stock to maximise intake and weight gain.

Any paddock that gets too strong is taken out as high-quality surplus bales. To date in 2019, over 80 surplus bales have been taken from paddocks. Figure 1 (page 15) shows that just under 15t DM/ha of grass was grown in 2018.

4. SOIL FERTILITY

Approximately 90% of the soils sampled in Ireland are at sub-optimal level in one of the three major nutrients – lime (pH), phosphorus (P) and potassium (K). Results from soil samples taken in early 2017 proved this to be a similar case on Tommy's farm.

One soil sample was taken on every 4ha to determine the P, K and pH status of the farm. As can be seen from Figure 2 **(page 17)**, soil fertility required serious attention with pH being the priority.

A soil pH of between 6.3 and 6.5 is ideal to allow for maximum nutrient uptake by roots of the grass. Correcting the pH is the first requirement in optimising grass growth. Recent studies have shown that grassland soils maintained at pH 6.3 to 6.5 has the potential to release approximately 60kg to 80kg/ha more nitrogen (N) than soils with pH 5.0, thus representing a significant cost-saving opportunity on Irish farms. With that in mind, no time was wasted in trying to rectify the situation. Sixty tonnes of lime were spread in 2017 and a further 40t last year.

Figure 4 - reseeding protocol

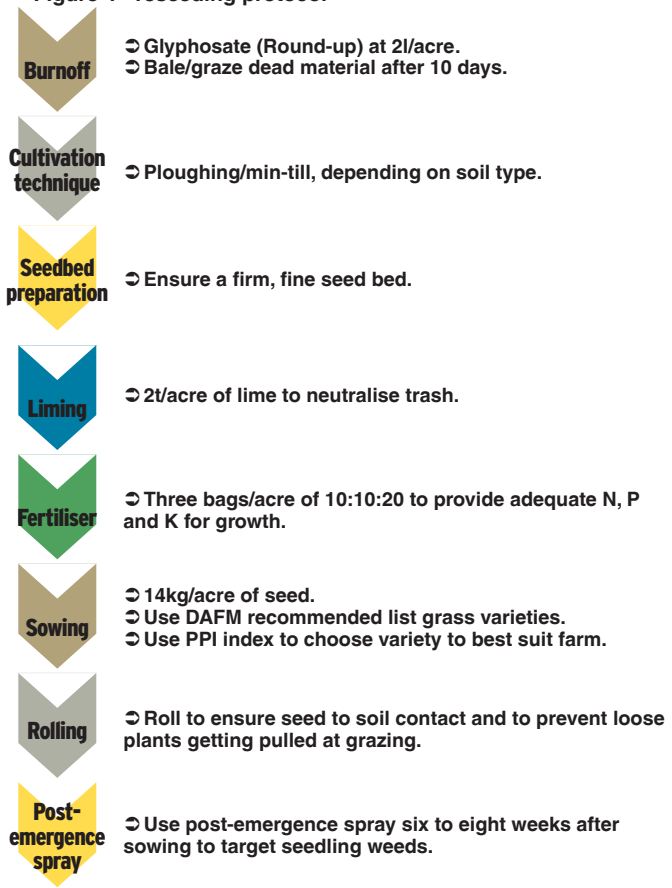
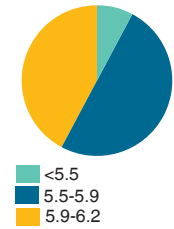
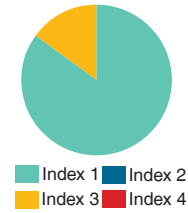


Figure 2

pH of farm



P index of farm



K index of farm

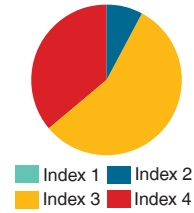


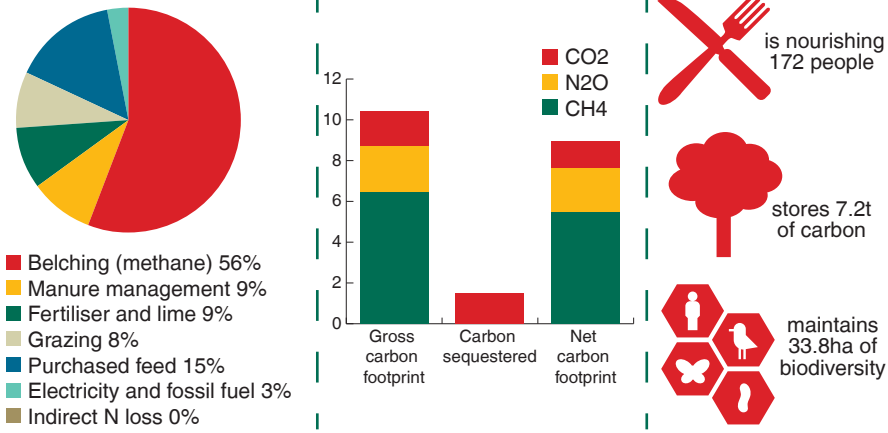
Figure 2 also shows us P and K required attention. Since the programme started, Tommy has targeted lower index paddocks with cattle slurry, farmyard manure and compound fertiliser containing high levels of P and K, as opposed to straight nitrogen which was often applied in the past.

5. RESEEDING

To maximise grass growth once all of the above steps are adhered to, reseeding is the final piece of the jigsaw. Reseeding pastures with newer ryegrass varieties and white clover will have a higher nutrient value and better yields than older permanent pastures. Research shows that old permanent pasture produces, on average, 3t DM/ha/year less than perennial ryegrass-dominated swards. In the last decade, Tommy has reseeded the entire farm and he already has plans to continue to refresh any swards that are not producing to their maximum potential once again. Table 2 **(page 16)** shows an example of a grass seed mix that was used, while Figure 4 **(page 17)** shows the reseeding protocol.

BEEF CARBON FOOTPRINT

Tommy Holmes



Tommy has selected the soil fertility challenge, where the target is to have 70% of the farmed area at index 3 for P and K and 6.1 for pH. Combining fertile soils with the excellent grazing infrastructure on his farm will allow Tommy to grow grass efficiently and maximise utilisation. In turn, not only has this improved animal performance and farm productivity during grazing and produce high-quality silage for the housing season, it also improved the nutrient use efficiency of the farm. Moreover, Tommy has selected the green farming challenge with a target of incorporating white clover into 20% of swards. The inclusion of white clover can reduce the carbon footprint of beef when stocking rate is sustained through the substitution of carbon intensive chemical N fertiliser with carbon neutral fixation of nitrogen.

Low emission slurry spreading (LESS) techniques mitigate ammonia (NH_3) emissions by reducing the surface area of slurry to exposed air. Trailing shoe is the most effective technique because it places the slurry very near the soil surface and beneath the sward. LESS techniques are most effective during the summer when nitrogen is at its greatest risk of being lost to the atmosphere. Therefore, combining the increase in the proportion of slurry spread in spring and use of LESS techniques, NH_3 emissions can be significantly reduced. Additionally, slurry spread using LESS techniques has a greater nitrogen fertiliser replacement value than splash plate (~3 units N per 1,000 gallons) and thus displaces chemical N fertiliser inputs and associated GHG emissions. LESS techniques are being used on the farm. However, it is advised to use contractors for this work to minimise costs.

Maximising grass

Maximising the grass utilised in the shoulders of the year has a huge impact on the annual grass production for a farm. It also has a big benefit financially. Every extra day at grass is worth €1.80 per head to a farmer in the autumn.

Often, when the opportunity presents itself to turn out light stock early in the year, there is no grass present. This is where an autumn rotation planner comes in.

Two-thirds of the grass on a farm in the spring will have been produced the previous October. The autumn grazing planner is a useful tool to get autumn grazing right. We begin closing up farms in late September for wet farms and in early October on dry farms.

The important target around autumn closing is the 60% closed figure – this is where grass will be available in the spring.

Here on Tommy's farm, he likes to get autumn-born calves and lighter bulls out as early as possible to get cheap weight gain on them, but also to get grazing up and running and the grass plant stimulated. Strategically, Tommy aims to turn out on drier ground adjacent to sheds and close to roadways. Should the weather turn bad, they can be easily turned back in. That means planning the correct time in autumn to close those paddocks.

Prior to closing, all paddocks are grazed out well to ensure the high-quality leafy grass is present in the spring. Tables 1 and 2 provide a guide to completing an autumn grazing planner.

Table 1: Area available for grazing each week this autumn

	60%	40%
Date	Date 60% is grazed	Date all cattle are housed
Number of days	From start to 60% date (a)	From 60% date to housing (b)
Hectares to be grazed	(c) (0.6 X total area)	(d) (0.4 X total area)
Hectares per week	(c÷a) X 7	(d÷b) X 7

Table 2: Autumn grazing planner showing weekly targets (from Table 1)

Week ending	Grazing area		Actual area grazed week end
	per week	grazed (total)	

Fresh, clean air is a natural disinfectant

Housed animals need to be able to breathe in fresh, clean air to thrive and remain healthy. The availability of this fresh, clean air is dependent on the effectiveness of the ventilation in the shed.

Good ventilation supplies enough clean air to remove gasses, odours, dust, bacteria and removes heat and moisture generated by the animals housed. Fresh air is actually a disinfectant.

If a virus is coughed up in a building, it will last for 20 hours. However, if the same virus is coughed up outside in fresh air, it will last for about 20 minutes. Air actually deactivates the virus and we need to make maximum use of fresh air in sheds.

To know if you have an issue, you need to observe the conditions in the shed before housing and at housing.

When you enter a shed and look up, you should not see cobwebs, condensation and rust damage on the walls/roof or blackened timber.

The shed should not be warm and stuffy or smell of ammonia. If you see these present, it means there is not enough air circulating through that shed.

In Ireland, natural ventilation is the preferred method of ventilation of livestock housing and this is dependent on the inlets and outlets in the shed being big enough for the number and size of the stock being housed.

The ways in which natural ventilation occur are through:

- The stack effect in calm conditions; or
- The combined stack effect and wind; or
- Wind, but only when the outside air speed is more than 3m/sec.

The stack effect is driven by the heat produced by the animals. The animals produce heat and warm the air.

The warm air rises, escapes through the outlet area (highest point of the house) and is replaced by clean fresh air through the inlet area.

If there is no outlet available or the outlet is too small, the air will cool down and come back down on the animals. This air will be moist and will almost certainly carry harmful bugs, which have been proven to cause ill health and respiratory problems.

If the inlets are too small, this air is slow to come in and help push out the warm air, reducing the airflow. So the rate of ventilation is influenced by the size of the inlet and outlets.

However, it is also influenced by the roof pitch and the height difference between inlets and outlets, the height of the eaves and the proximity or interference from other buildings.

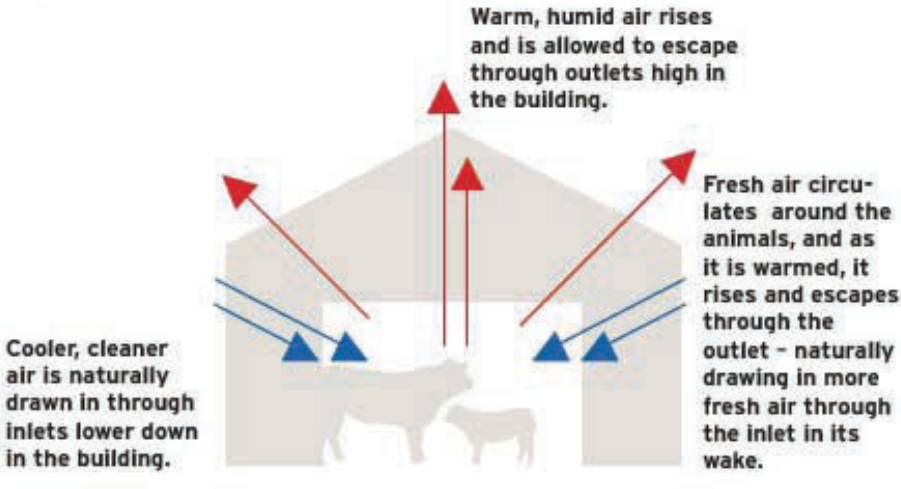
Ideally, cattle sheds should be sited with the side at right angles to the prevailing wind. However, open-sided buildings should be orientated with the open side sheltered from the prevailing wind.

If you suspect you have an issue, what can you do?

INLET

- Angle out the side cladding, at the bottom. Moving out the side cladding to leave a clear opening between the side wall of the shed and the side cladding, just below the top of the side wall, will provide a good inlet. Air is deflected upwards from the side wall as it enters. This can be done easily enough with box section steel. The box section will make

Figure 1.



it secure and will allow the gap width to be maximised.

➲ Where sheds have a wall built right up, the easiest solution is to knock off a few lines of blocks to provide a continuous opening. Monitor how it works to see if any more needs to be done

➲ Replace side sheeting with vented sheeting, space boarding, Yorkshire boarding or a windbreaker.

➲ Remove any trees, hedges or other obstacles blocking wind from the side of the shed.

OUTLET

➲ Raise the ridge cap if possible.

➲ Spaced sheeting in the roof is excellent, but really not practical unless all the sheeting is being replaced.

➲ Raising sheets is a practical method to turn the roof into a 'breathing' roof. One or two lines of sheeting per bay can be raised above the plane of the roof by about 100mm to 150mm with an overlap of about 100mm to 150mm at each side to prevent in-blown rain. The raised sheets run up along the slope of the roof (which is usually across the width of the shed) and possibly up and over a round roofed shed, as well, if one is present. The size of the outlet can be calculated by multiplying the total length of all the openings by the raised height and comparing them to the guidelines.

OTHER CONSIDERATIONS

Draughts are just as bad, if not worse, than poor air movement and stuffy conditions.

Doors left open continuously are just as bad as a shed with no doors. Doors should not be used to provide extra inlet or outlet area.

Doors may be opened in mild or warm weather to supplement ventilation, as long as they don't cause draughts. Doors used to supplement inadequate ventilation will lead to draughts.

Light is also very important in animal housing, mainly for the animals, but also for the person looking after and observing them.

Any improvements to natural light that can be made in conjunction with making improvements in ventilation should be availed of.

Winter dosing

There are several factors which will affect the performance of an animal during housing. Diet is obviously main one. But after diet, the health status of an animal is most important. Parasites such as stomach worms, lungworm and fluke can have a serious effect on animal performance. As cattle only pick up parasites at grass, housing offers farmers the ideal opportunity to clean out stock.

LUNGWORM

Dosing should be considered at least four weeks before housing to allow any damage to the lungs to heal before animals come into sheds where they will face a dustier, more enclosed environment. There is no reported anthelmintic resistance in lungworm. If you use a product with persistency (eg avermectin) you can do your housing dose for lung and stomach worms at this stage, just check the product as to what the length of persistency is.

STOMACH WORMS

Can be treated like lungworm or at housing. There is anthelmintic resistance in stomach worms. This is where the parasite we are looking to control has the ability to tolerate the normally effective dose of the anthelmintic being used. Table 1 shows the three classes of anthelmintic in Ireland. In work carried out by Orla Keane of Teagasc, resistance to Ivermectin was found on 100% of farms tested. Seventy-five percent of farms tested had resistance to white drenches and 25% had resistance to yellow drenches. It is thought that levamisole is used less, thus reducing exposure of the stomach worm population to this product. This may account for the higher efficacy of this drug. Anthelmintics from different classes (eg 1-BZ, 2-LV or 3-ML) have different modes of action, but, within a class, products have the same mode of action – when resistance develops to one product within a class, then all the products in the same class will become useless on your farm. Incorporating a rotation regime of active ingredients into your health plan will help to minimise the risk of anthelmintic resistance and should be discussed with your vet.

FLUKE

Fluke is present on most farms and needs to be considered always at housing. If killing cattle, check with the factory what the livers were like or use farm beef health check data available from the ICBF. Dosing for fluke is complicated by the fact that there are many products and they kill different stages of the parasite. It depends on how long the cattle are housed as to what product you should use (see Table 2). Be careful with withdrawal dates if you are killing cattle too.

VIRUSES

These can happen at any time, but the stress of weaning, castration and especially housing can bring on the symptoms. These viruses can reduce the performance of your animal even slightly, so many farmers are unaware they are present and performance is affected, or they can cause major outbreaks of pneumonia, causing death and associated costs. The most common viruses are IBR, RSV and Pi3. A proper vaccination programme can play an important role here in reducing their effect. Animals should be vaccinated at least one month before housing to allow the immunity to build up. There are many products on the market so it is best to consult your vet to implement a proper vaccination plan.

Table 1:

Class	Common Name	Chemical	Sample products
Benzimidazole	White (1-BZ)	Albendazole	Albex, Endospec, Tramazole
		Fenbendazole	Panacur, Zerofen, Fenben
		Oxfenbendazole	Oxfencare, Parafend,Wormal
Levamisole	Yellow (2–LV)	Levamisole	Levacide, Vermisole
Macrocyclic Lactone	Clear (3-ML)	Ivermectin	Animec, Bimectin, Qualimec
		Doramectin	Dectomax
		Eprinomectin	Eprinex
		Moxidectin	Cydectin

Table 2:

Active ingredient	Sample product	Dose after cattle housed		Admin route	Withdrawal
Triclabendazole	Endofluke 10%	2 weeks	Early immature, immature, adult fluke	Oral drench	56 days
	Fasinex 240	2 weeks		Oral drench	56 days
	Tribex 10%			Oral drench	56 days
Closantel	Closamectin inj Closamectin Pour-on	7 weeks	Immature, adult fluke	Injection	49 days
	Flukiver bovis	7 weeks		Pour-on	28 days
		8 weeks		Injection	77 days
Nitroxynil	Trodax	8 weeks	Immature, adult fluke	Injection	
Albendazole	Albex 10%	10 -12 weeks	Adult fluke	Oral drench	14 days
	Endospec 10%	10 -12weeks		Oral drench	14 days
Clorsulon	Bi mectin plus	10 -12weeks	Adult fluke	Injection	66 days
	Ivomec super	10 -12 weeks		Injection	66 days
Oxyclozanide	Levafas Diamond	10- 12 weeks	Adult fluke	Oral drench	28 days
	Zanil	10 -12 weeks		Oral drench	13 days

EXTERNAL PARASITES

Winter is also the most common time to see infestations of external parasites, such as lice and mange, and these should be considered when selecting treatments.

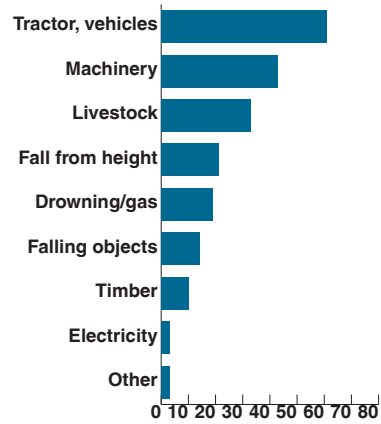
Injectable and pour-on products can be used for mange and sucking lice, but only pour-on products are effective against chewing lice.

Everybody's responsibility

The fatality rate in agriculture in Ireland is, unfortunately, far higher than any other economic sector. Worryingly, the level of farm accidents is not decreasing either. Similar accidents occur each year, with research showing that, in general, farmers' attitudes to safety will only change after serious injury occurs.

In the last 10 years (2009-2018), 207 people have died in agriculture and forestry-related accidents. The main causes of these deaths are seen in Figure 1. The most vulnerable to death and injury on Irish farms are both children and the older farmer (>65 years of age), accounting for almost half of the total number of fatalities.

Figure 1
The main causes of farm accidents in the last 10 years



FARM SAFETY CHALLENGE

The farm safety challenge is a mandatory challenge, with all farmers required to complete a farm safety risk assessment on an annual basis and update this on a yearly basis, and to introduce two positive changes to their farms annually.

As part of the farm safety challenge, participants will also attend safety training days every year during the programme in areas such as livestock handling and machinery safety.