

ABOUT NORTH AYRSHIRE MONITOR FARM

Farm name **Girtridge Farm, Drybridge Road, Dundonald, Kilmarnock, KA2 9BX**

Meeting Number **09 Dr Bill Crooks (SRUC) and Lewis Butlin and Richard Gray (Agrovista)**

Meeting Date **Friday 8th June 2018, at Girtridge**

Next Meeting **Wednesday 15th August**

Girtridge Farm is run by the business of Messrs John Howie, a partnership consisting of John Howie, his mother Margaret and his sister Mary. The business farms a total of 140 hectares of non-LFA land and 35 hectares of LFA grassland.

Livestock

Finished Cattle: Approximately 230 finishing cattle purchased through the local market and direct off farm all year round. The aim is to sell cattle at R4L deadweight through either Stoddarts or Highland Meats.

Sheep Flock: 250 cross ewes put to Suffolk, Texel and Abermax rams. All lambs are sold finished either through the live market or direct to slaughter through Farmstock. All replacement females are purchased privately or through the market.

Breeding Cattle: 10 mixed breed spring-calving suckler cows running with a Limousin bull. Calves transition to the finishing cattle system.

Cropping

Spring Barley: 28 hectares of Spring and Winter Barley. All barley and straw is used on farm.

Forage: Two cuts of silage are taken with 7.13 hectares of hay also being produced.

The management group are John Howie , Craig Bryson, William MacTier, Andrew Welsh, Beth Errington, Gordon Walker , Louise Walker, Hazel Muir, Iain Reid, James Morrison, John Cowan, John Hunter, John Paterson, James Smith, Matt Mitchell, Philip Close, Robert Munro, Willie Campbell, David Young

KEY MESSAGES**Soil Health**

- Compaction has the potential to reduce yields by 30-40%, therefore reducing compaction is key.
- Wait for suitable weather/ soil conditions before conducting field work to limit compaction.
- When seeking to correct a compaction issue, dig a hole to identify the area of compaction and then correct it by using the appropriate machinery.

Crop management

- Too much slurry will damage the soil leading to poorer crop growth and increased run off into ditches and watercourses causing environmental damage.
- Grass and cereal crops are stressed by the dry weather, and are heading early which leads to low yield and low quality silage, while cereals which have not fully tillered will produce less grain and straw.
- Poor harvest will affect grain and straw availability over the next year.

Agrovista

- Drone technology can provide a cost-effective method of measuring variance across a field.
- Crop leaf area and weeds can be identified and mapped enabling targeted fertiliser and pesticide application, reducing wastage of resources and the environmental impact of over application.

AREAS OF DISCUSSION

- The attributes of good and poor soil structure.
- The issue of compaction – its cause and effect on soil health and crop yield.
- Measuring soil health using the #soilmyundies method.
- The methods to prevent compaction occurring and ways to identify where the compaction is and the appropriate measures and machinery that can be used to reduce the compaction.
- The effect recent weather on crops – stressed crops from dry weather heading early leading to low yield and poor quality silage, while cereals will produce less straw, affecting availability over winter.
- Timing pesticide application to achieve best weed kill.
- The application of drone technology in Agriculture
- Current/future drone related services provided by Agrovista and their benefits.
- Sheep update – lambing data.

FARMERS UPDATE

Crop Nutrition

- Slurry mixed, sampled and spread on the 20th & 26th of March 2018, at 2200gallon/acre.
- Liquid fertiliser spread on 17/3/18 at 40 units of N on the Winter Barley, 50 units of N on the grazing land at Girtridge and 30 units of N on Ashfield grazing.
- Silage fertiliser on by the 24/04/18 at 70 units N, with additional 20 units N in the slurry. Silage cut on 27/5/18 and finished by 30/05/18, which is three weeks earlier than last year.

Sheep

- Singles and twins were brought inside to lamb on the 21/03/18 with the float, which resulted in stressed ewes and Twin Lamb Disease (TLD) associated problems at lambing. John had help at lambing with individual pen work. The lambing finished on the 6th of May.
- Ewes dosed with 'Supaverm' for fluke and worms on the 24th of April.
- Lambs dung sampled and dosed on the 21st of May for Nematodirus and Coccidiosis.

Cattle

- Cattle turned out on the 28th of April, some foot issues with bought in cattle.

Visits and other business

- Attended QMS conference at Dunkeld, Received a second visit from SRUC students, SERLP closing ceremony, Dealing with Scottish water
- Draining, ploughing and drilling (+ lime applied) in April. Then under sown trial plots 26/27th May 2018 (6 grass seed varieties).

FACTS & FIGURES DISCUSSED

Sheep

The Girtridge lambing figures were discussed and compared to the QMS 2017 benchmarks;

	Aberfield Gimmers	Mule & Tex X Gimmers	Ewes	QMS 2017: Lowland Ewe Flock Benchmark	QMS 2017: LFA Upland Ewe Flock Benchmark
Lamb Losses % (Scanning-Lambing)	20	21	35	18	17
Lamb Losses % (Lambing-01/06/18)	7	7	12		
Lambs Reared % to 01/06/18	146	163	139	167	152
Ewe Losses % (Scanning – 01/06/18)	3	7	7	4	5

All lambs were weighed 12-24hrs after birth, a few lambs were re-weighed in the week before the meeting, allowing an estimated DLWG to be discussed. See average lamb weights below:

Litter size scanned	Aberfield Gimmers	Mule & Tex X Gimmers	Ewes (Suffolk lambs)	Ewes (Texel lambs)	Average weight (kg)
1	6.74	6.59	6.97	6.09	6.60
2	5.36	5.24	5.62	5.07	5.32
3	4.52	4.91	5.62	4.93	5.00
4	4.81				4.81
Average weight (kg)	5.36	5.58	6.07	5.36	

Average Growth Rate of Lambs

Earlier lambs weighed 29kg last week; DLWG = 450g/day

Later lambs weighed 27kg last week; DLWG = 412g/day

(Using 5.59kg average birthweight across the breeds over 52 day growth period)

Compaction and soil health with Dr. Bill Crooks

John identified a decline in drainage in a field next to the steading that is heavily stocked all year round. To correct this issue the following steps should be followed;

- 1) **Understand the state of the drains**, have there been any changes, are drains mapped and are the outfalls clear?
- 2) **Review the soil analysis**. In John's case the pH was low, and a liming programme has now been established. The P & K levels were high, so any application of P & K would be an unnecessary cost.
- 3) **Digging a hole** is a must before conducting any cultivation or de-compaction. This ensures that the problem is identified and the correct equipment used to fix it. In John's field there was a distinct cow pan from the surface down to about 10 cm. The rest of the topsoil layer was firm as was the subsoil, which is typical in old swards that receive a lot of traffic. The maximum rooting depth was poor at about 15 cm which is largely due to the cow pan and firm topsoil.
- 4) **Devise a plan** to correct the issue and consider the cost of purchasing/using a contractor. The recommendations to John were to make sure the drainage system is working, consider subsoiling to reconnect with the drainage system, bring the field into a crop rotation or do a full re-seed.

We also got to view three different types of equipment, which are all suited to different jobs.

- **Sub-soiler** – a drainage tool, used to reconnect with drains, and runs at a depth of 35cm.
- **Sward lifter** – targets compaction in the topsoil (most appropriate for removing John's cow pan).
- **Aerator** – a sward management tool that 'opens up' the sward, allowing air into the root system, helping the grass to deal with compaction and maintain a healthy sward.

Field conditions must be right for any operations;- too wet and you will make the problem worse and too dry may cause excessive soil surface heave and root damage leading to sward death.



The application of drone technology with Agrovista

- Drones & crops sensors cost £18, 000 - £20,000, but drone flights from Agrovista cost £3/ha.
- Predominantly used for measuring variance across a crop/field but can be used to map green area to enable variable N application or map weeds and target spraying to save input costs.
- Can be used to count plants at the 'flag leaf stage' giving an early indicator of potential yield.
- Drones also have an application in livestock with technology developing to count stock

OPPORTUNITIES/CHALLENGES

- Alleviating soil compaction using the correct machinery
- Comparing performance of sheep breeds (i.e. lambing percentages, monitoring lamb growth rates etc).
- Dry weather affecting crops – spring barley is heading lead to a winter straw and grain shortage.
- Slurry analysed and balance fertiliser to meet crop and grassland needs.

ACTIONS FROM LAST MEETING

- Monitoring lamb growth rates
- Monitoring grass seed trial
- Soil and grass pasture samples analysed
- #Soilmyundies – bury cotton pants.
- Monitor grass trial plots of the undersown grass seed mixtures

FACILITATOR CONTACT DETAILS

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