FARM REPORT

ABOUT CORSKIE MONITOR FARM

Farm Name **Corskie Farm, Garmouth, Fochabers, Moray, IV32 7NN**

Meeting Number	**15**
Meeting Date	**Tuesday 15th October 2019**
Next Meeting	**Tuesday 3rd December 2019**
Report Date	**Wednesday 16th October 2019 (LH)**

Corskie Farm is run by Iain Green in partnership with his mother and father. The family have been farming in the area for over 60 years. Over 1,440 hectares (3,560 acres) in total is currently farmed by the business.
Arable: The main arable enterprise consists of growing Spring Barley (535ha) for malting. Winter Wheat (86ha), Winter barley (70ha) and Spring Oats (11ha) are also grown, with the majority being used on-farm as livestock feed.
Cattle: The family run 380 cross cow suckler herd, alongside a 200 cow pedigree Simmental herd. Simmental and shorthorn bulls as well AI is used to spread out calving across the year.
Sheep: There are 600 Mules and Mule cross Texel sheep which are lambed in April.
Pigs: At Corskie there is an indoor breeding herd of 380 sows, producing breeding gilts for Rattlerow.

"The different farm enterprises are fairly well integrated," Iain says, *"as well as growing our own feed through the cereals side, we also use the manure from the livestock on the arable fields and pasture. We apply it differently in different areas, using our soil and yield maps to make sure we are controlling our inputs and maintaining good soil fertility and nutrient balance."*

Management Group
Charlie Gray (Chair), Hugh Thomson, Robbie Newlands, Martin Birse, Robert Manson, Andrew Anderson, Cameron MacIver, Ian McHattie, Stewart Grant, Stewart Stronach and Stewart Rothnie.

KEY MESSAGES

Plant diversity and soil health

- Joel Williams talked about the need to consider plants as the fourth piece of the puzzle for soil health, in addition to the traditional balance and interactions between chemistry, biology and physics.
- Soil health, chemistry, biology and physics are a reflection of plant health and management.
- Productivity is driven by how well the plants are photosynthesising, which is catalysed by minerals.
- All minerals (macro and micro), not just N, P and K, can impact photosynthesis and therefore are critical.
- Plants excrete compounds called root exudates.
- These root exudates are used by organisms in the soil in exchange for release of minerals to the plants.
- 20 – 30% of the carbon breathed in by annual plants is excreted straight out.
- This figure for perennial plants is much higher at 30 – 50% which may appear counterintuitive but the plant is investing in microbes to ensure a supply of the minerals required.
- The role of root exudates and their link between the plant and soil is a very active research area.
- Different plant species produce different types of root exudates.
- The different root exudates excreted depends on:
  - Species
  - Plant age and stage – for this reason grazing is good as it stimulates root growth
  - Soil
  - Environmental factors
  - Interacting organisms
  - Plant nutrition/photosynthesis
- Different stages of plant growth require different nutrients, which results in the plants excreting different root exudates to recruit different microbes and obtain different minerals.
- Root exudates are more valuable in clay soils.
- Joel highlighted that in a standard monoculture system all the plants were at the same growth stage and the root systems were all the same as plants were scavenging the same nutrients which led to increased competition.
- By contrast increasing species diversity could lead to beneficial collaboration.
- Joel highlighted some published research which demonstrates the benefits of increasing plant species diversity including: increased soil microbes and fungi, increased root exudates, increased nitrogen availability, increased plant growth and productivity, and improved carbon storage.
- He also directed attendees to a series of studies including: the Jena Experiment in Germany (http://www.the-jena-experiment.de/), the SmartGrass project in Ireland

(https://www.pressreader.com/ireland/irish-examiner-farming/20180816/281921658886184) and the Soil Biology Primer book (https://www.envirothonpa.org/wp-content/uploads/2014/04/7-Soil-Biology-Primer.pdf).

- Increasing plant species diversity also leads to animal health and production benefits including increased weaning and slaughter weights, improved daily live weight gain, reduced faecal egg counts and reductions in the number of worming treatments required.
- While, increasing species diversity in pasture is easy; there are opportunities for companion or intercropping in arable cropping systems.

- Only 40 – 50% of applied nitrogen, 10 – 20% applied phosphate and 40% applied potassium is actually taken up by plants
- A number of methods are available to improve nutrient use efficiency including:
  - Seed treatment
  - Foliar spray e.g. urea
  - Carbon based inputs e.g. manure, compost
  - Integrated nutrient management – using as many tools as possible
  - Plant species diversity
- Soil aggregates, that is the soil particles sticking together, are important for soil structure and the gaseous exchange of oxygen and carbon dioxide.

- To maximise soil carbon sequestration it is essential to preserve soil aggregates by minimising soil disturbance as much as possible.
- Plant species diversity also facilitates soil aggregation.
- There is a body of evidence that demonstrates that the retention of stubbles does not build soil carbon as it is the roots and their decay that builds this.
- Joel emphasised that was that it is roots not shoots that builds soil carbon, so we should not be too fixated on what is going on above ground.
- When looking at plant diversity in the field you need to consider the following:
  - Ground coverage
  - Precence of particular weeds e.g. chickweed can suggest too much nitrogen in the system; docks or other weeds with tap roots indicate compaction or tight soils
  - Soil aggregations and soil colour
  - Roots – are they white, tan or no roots? White roots can indicate that plants have become lazy due to too much fertiliser in the system.
  - Smell – very subjective but does it smell bad, neutral or good?
  - Soil texture

Clipex Sheep Handling System

- Iain Green and Ian from John Thorburn & Sons demonstrated the Clipex sheep handling system for weighing, tipping and shedding lambs.
- The system has so far been used to: draw fat lambs and cull ewes, wean lambs, crutch the pedigrees, check tags, assess feet, sponge ewes, vaccination, and dosing at Corskie.
- The system allows you to automatically draft by weight gain after reading the ear tag to inform you of the weight gain from the previous weighing.
- A memory stick can be used to transfer information from the reader to a laptop or desktop computer.
- The pressure and sensors can be adjusted depending on how fast the sheep travel through the handling system and task being undertaking.
- Being mounted on a set of wheels means the handling system is easily transported and Iain has used it in 3 different sites
- The handling system only requires 80 psi to run and Iain Green has successfully ran it off a tractor compressor in the field.
- The system costs £17.5k + VAT but Iain Green suggested that a group of farmers could share the cost of purchase.
- Considerable savings in labour for sheep work have been made at Corskie since using this handling system. Iain Green provided an example of one stockperson doing 15 tups feet in an hour and 980 sheep passing through in just over two hours where the ewes and lambs were shed three was with lambs separated into light and heavy.
- However, Iain still had to go back through the heavy lambs to ensure they had sufficient fat cover.
- A cattle version of the handling system is also available.
- Iain Green intends to use the system to monitor the effect of different feeding regimes on weight gain.

Stirling Bulls

- Iain Green showed the group the 5 bulls destined for Stirling next week.
- Initially 9 were planned to go to Stirling but current beef prices suggest that buyers may not be present in the same number and be so willing to purchase, so the other 4 bulls have been kept back for the February sales.
- Iain has only selected the very best bulls to put forward for sale, with any bulls showing faults being culled.
- All bulls have been semen tested and vet checked prior to sale as Iain Green emphasised this was a big selling point.

- Iain Green also highlighted that beef production was a long term project with the bull calves Laura Green recently bought not being used until next year and it will be another 18 months after this before any progeny will be sold.

AREAS OF DISCUSSION

- Around 40 farmers enjoyed an interactive day discussing: soil management and fertility, sheep handling systems and bull sales.
- Charlie Gray, member of the Management Group, welcomed everyone to Corskie and gave a rundown of the day planned ahead before handing over to Iain Green for his farm update (see below).
- The main speaker of the day was Joel Williams from Integrated Soils, Canada who gave a thought-provoking presentation on plant diversity and soil systems before heading out to the fields to assess some of the Corskie soils.
- A demonstration of the Clipex handling system was provided by Ian from John Thorburn & Sons and Iain Green.
- The group were shown the 5 bulls forward for the Stirling bull sales next week.
- Overall the meeting was very positive with good interaction from the community group.

FARMERS UPDATE

Arable

- The Corskie rain gauge has seen 338.3mm from 5th August 2019 – today.
    - In 2017 only 87mm rain fell in August but this year it was 221mm.
    - Rainfall in September 2019 matched that of September 2017.
- Harvest was 3 weeks later this year than in 2018 due to rain and lack of sunshine.
- Harvest finished on 21st September but over 200 acres of straw is yet to be baled.
- Iain noted that harvest 2019 had been one of the hardest he had experienced due to the poor ground conditions of fields following the high rainfall. Tractors and trailers were required to keep to the headlands and 4wd dual wheels were put on all machinery.
- The plan is to sow more (250 ac) winter barley than last year. The first 100 ac sown emerged through the ground quickly and is now ready for spraying.
- Of the 4 varieties of spring barley trialed at Corskie this year Asteroid came out on top. This variety yielded well, despite being flat due to over-application of fertiliser. It has now been dried and stored, with a sample being sent to Norfolk for micro malting. Depending of the results of the micro-malting trial, Asteroid may go for malting or seed.
- Laureate also yielded well and a surplus to the contract occurred. An offer of £135/t was made but it has been decided to keep this excess for feed.
- 160 t over contract was yielded of Faring (a high nitrogen variety) but the last load was rejected due to low nitrogen so will be retained for feed.

- Diablo did not yield as well as Laureate despite being bolder and was flat in the field. This is currently being dried and stored.
- The bushel weights of the spring barley are not yet available but all varieties weighed well with the light land being better.
- Winter wheat was cut on 20th August at 16.7-16.9% moisture. So far 100 t has been dried with the rest being stored. Unfortunately, the germination levels meant this was no use for seed.
- The aim is to finish the sowing of 250 ac of winter wheat by this weekend, with 100 ac already in the ground.
- Iain found the recent business group benchmarking meeting very interesting and useful. Considerable similarities was noted between the 3 farms compared but one farm had high fuel usage which the group concluded to be due to using smaller machinery.

Cattle

- The Corskie show team had great success at the summer shows across the north of Scotland, being placed overall interbreed with their pedigree Simmentals at the Black Isle and Turriff. The Shorthorns were also winners at Turriff.
- 5 bulls are being put forward to the Stirling bull sales next week
- Laura Green recently visited the Republic of Ireland to purchase 3 bull calves to introduce some new genetics to the pedigree Simmental herd. These are currently in quarantine.
- 12 frozen embryos were implanted into the Simmental cows, of which 8 have been recorded as in calf but one of these embryos does not look healthy.
- Autumn calving is ongoing but there has been lots of big calves in both the SimX and ShX cows
- So far 4/86 calvings have resulted in a caesarian section despite keeping calves on the cows for longer and keeping the cows and calves out at grass. No pedigree cows have required a c-section.
- The young bulls were kept out longer but it has been found that they are taking longer than expected to reach target weights. As a result it will be another 3 weeks before any bulls are off the farm. Ideally the amount of creep feed used should have been measured and compared with 2018 usage levels.

Sheep

- The cross ewes are now ready for tupping next month
- Jemma green has retained 6 shearlings from her pedigree Texel flock after being successful in the sales
- A new Texel tup was purchased at Lanark for 13k but a ½ share has since been sold.
- Some ewes and gimmers were AI'd to either a shearling and tup lamb.
- Despite the shearling semen looking excellent prior to insemination of the 3 ewes flushed to him all 45 eggs harvested were unfertilised.
- Of the 5 ewes flushed to the tup lamb, 54 grade 1 eggs were harvested.

- No fat lambs have been selected for the last 3-4 weeks

OPPORTUNITIES/CHALLENGES

- Opportunities exist to increase plant diversity, particularly in grass fields, which in turn would reduce fertiliser requirements.
- Cover crops, even if only a small area is sown initially, are a great opportunity to improve soils and grazing them can also provide an economic return.
- Composting farm yard manure for a period of at least 6 months before application would also help soil and plant health.
- Current beef prices may negatively influence farmers' decisions to purchase bulls.

ACTIONS FROM LAST MEETING

- Gather financial and performance data for 2019 livestock for FarmBench
- Gather and analyse data from lamb feeding trial with Clipex sheep handling system
- Review nutrient management on farm

FACILITATOR CONTACT DETAILS

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