

Soil and Nutrient Network



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Helping farmers improve soil and nutrient management

Case study - Rhoine Farm, Kintyre

The Rhoine Farm is a farming partnership comprising of Matthew, Catherine and David Ralston. It is an 89 Hectare farm situated in the Laggan area of Kintyre with a height above sea level between 17 and 40 metres.

It is a mixed farm with Beef, Sheep, growing spring cereals and a livery. SGRPID deem it as 74 Hectares of Region 1, with 13 Hectares in an area named the Moss of Region 2.

Livestock – At present the farm carries 40+ suckler cows with followers and a flock of 150 ewes and gimmers. There is an array of buildings, slatted courts, straw bedded yards as well as cubicles.

Soil Types – These vary drastically over the farm, from peaty, non calcereous gleys, with some podzolic rankers, with Derivatives of Dalradian Schists and red sandstones.

Improving farm soils and making best use of nutrients

The majority of the farm was soil sampled to determine the pH, P and K status of the fields initially. The results indicated that there are areas requiring attention, however remediation cost is an issue. Soils expert Seamus Donnelly's advise was to address the lime in stages, pay attention to P and K, also make the best use of slurry and farmyard manure, using this to build up the soil structure.

Part of this workshop was also to look at drainage, and two fields were picked for reasons of:

- The range of soil type
- Their drainage problems

Seamus gave a very captivating presentation with practical sessions to explain how to assess soil structure, examine drains and work out outfalls. He also discussed the mechanical methods available to aid soil structure and improve drainage.

Referring to the handouts produced by Seamus, and Technical Notes, each demonstration soil pit was discussed in detail. Key messages related to soil structure, smell, root depth – all important for productivity.

Looking to the future, PLANET will be utilised to record all the activity for crop years 2016 and 2017 to then assess where savings can be made, utilising slurry and farmyard manure to reduce non organic applications. Grass seed mixes will be discussed at the next meeting, to promote the inclusion of clovers to reduce nitrogen and improve grazing.

Download your free copy of PLANET software at www.planet4farmers.co.uk



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For more information on the Soil and Nutrient Network see www.farmingandwaterscotland.org. For dates of SNN events, find us on Facebook or follow us on Twitter @FarmWaterScot.



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Soil nutrients: the building blocks of productivity

Agricultural Consultant & GPS soil sampling expert **David Ross** came along to the second meeting of the Kintyre Network. David delivered a thorough and detailed approach to show why it is so important to get the basics correct.

A second round of soil sampling highlighted what the various crops had taken from the soil in P & K, especially the field of oats. Leaching, with the inclement summer also had a bearing on the nutrient status of the ground. David reiterated how important it is to check soils and the need for using a spade to check your soil structure! Download a copy of the “Valuing Your Soils” booklet to find out more. It contains a copy of the VESS (Visual Examination of Soil Structure) scoring sheet which can be used to help you assess the structural condition of your soil. Nutrient status of soils can vary with soil type and whether or not the soil structure is open or compacted. Sandy soils are more prone to leaching soil nutrients; compaction doesn't allow for effective water movement or aeration through the soil. Improving soil structure can help improve crop yields through better nutrient uptake & will be a benefit to your farm business.

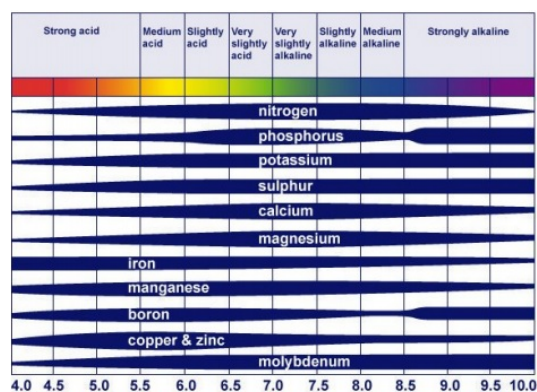
Soil pH

Soil pH impacts the plant availability of the P and K fertilisers you apply and has a role in determining N use efficiency. David explained the importance of soil pH and getting indices correct between 5.8 and 6.2. P&K are the key nutrients which, when corrected in conjunction with pH, maximise the utilisation of inorganic fertilisers.

Sulphur as a soil nutrient was discussed, and an experiment currently being conducted by David highlighted the benefits to yield from inputted sulphur. You can read more about soil sulphur in Technical Note: (TN685) Sulphur Recommendations for Crops.

The value of knowing the nutrient value of your farm slurry & FYM was discussed. Testing should be representative and samples should be taken at multiple locations on a dung midden and slurry tested should be well mixed before a sample is taken and ideally tested as close as is possible to when spreading is anticipated.

These actions will provide the most accurate results to allow you to calculate correctly the nutrients being applied and allow for a more accurate nutrient budget. This can also help save costs through reduced artificial fertiliser purchases above what is actually required.



Rogues, S; Smith, K A; Newell Price, P & Berry, P.M. (2003) Review of the non-NPKS nutrient requirements of UK cereals and oilseed rape, HGCA is the cereals and oilseeds division of the Agriculture and Horticulture Development Board. (<https://goo.gl/Unfjm3>)

Top tips for all farms

- Keep it simple
- Take time to assess cutting, grazing and cropping of fields
- Analyse well mixed slurry
- pH - slow rectification to ensure maximum benefit
- New drainage – take advice and identify old systems
- Download your copy of the Valuing Your Soils booklet for lots of information and tips on how to