



Cover Cropping

Why change?

Soil is arguably our most precious asset and resource.

Many fields can be left without a growing crop for significant periods of time between crops, leaving soils vulnerable to erosion, runoff and degradation. Planting a cover crop during these fallow periods can:

- Soak up excess nutrients left from the previous crop.
- Increase organic matter (OM) and sequester carbon.
- Increase/encourage soil biology.
- Bind soil together to reduce runoff and erosion.
- Improve soil structure and reduce compaction.



Cover crop being drilled

Steps to Success

1. **Review** the current situation by examining your soils and rotation.
2. **Identify** potential opportunities by locating fields that will be left bare overwinter or even between an early harvested and late sown crop. Identify fields likely to be at risk of erosion or runoff, or that have lower organic matter content. These will include those with long unbroken slopes
3. **Identify** soil or nutrient constraints that need addressing so you can select the appropriate species or species mix to address those constraints. Different cover crop species have different effects on the soil and can be used to remediate different problems. Most cover crops can be grazed by livestock to add an extra level of income to the field, improve the cycling of nutrients and improve soil biology.
4. **Calculate** potential cost benefit of these opportunities by examining the amount of nutrients that could be retained by planting a cover crop, how much soil could be lost from erosion, the benefit of increased OM for better nutrient and water retention and the benefits of including livestock into the rotation.
5. **Prioritise** those fields with the greatest risk of erosion/runoff, closest to a water course or with the lowest OM and/or nutrient indices.
6. **Develop** an action plan by identifying a cover crop or cover crop mixes that will best suit your situation. Different species will have different effects on the soil. Plan to plant the cover crops as soon after the field has been cleared as possible. Keep it simple and cost effective. Don't be afraid to try something new.
7. **Consider** whether under-sowing a crop such as maize would be beneficial or sing nurse crops that can be sprayed off before a commercial crop is sown.
8. **Monitor** OM matter levels in the soil as well as assess the fields to see if runoff and erosion have been reduced. Regularly dig soil pits to examine soil structure and compaction.

Cover Cropping - practical examples

The farm below is growing winter barley followed by maize and has the opportunity to plant a cover crop. By identifying the constraints before planting the farm can select the right species mix to plant. In this example, the farmer has chosen to plant a mixture of oats, radish, vetch and phacelia.

The farmer knew there was light compaction from the Barley harvest and that there was likely an excess of nitrogen in the soil needing to be intercepted before it leached out of the soil profile during winter rains. He also wanted to minimise the amount of artificial Nitrogen applied to the following crop.

He therefore chose a diverse cover crop with tillage radish to help break compaction and soak up nitrogen, oats to mobilise phosphate, vetch to fix atmospheric nitrogen and phacelia to store and release phosphate and nitrogen and improve soil structure.

Each species within a cover crop can provide a different benefit to your farming system. Deep rooting species like radish can help relieve compaction by pushing through compacted layers. Brassicas are very good at intercepting and storing Nitrogen for use by the following crop. Legumes like vetch, peas or clovers can fix nitrogen for the following crop.

Oats or Buck Wheat have quite acidic rhizospheres (the area immediately around the plants roots and root hairs) which can help mobilise phosphate for the following crop and species like Phacelia have large root zones which allow the plant to intercept and store large amounts of nutrients, which can be released to the next crop as the plants break down after termination of the cover crop.

The crop should be terminated before the following crop is planted. This can be achieved in several ways. Grazing with livestock, mulching using a flail topper or crimper roller or using Glyphosate where appropriate.



Mixed cover crop seed



Mixed cover crop vegetation

Remember

- Plant as soon after harvest as possible.
- Select the right seed mix to tackle the issues on your land.
- Keep it simple and cost effective.
- Graze covers where practical and possible.
- Do not be afraid to try something new.