Early establishment of green covers most beneficial

Maintaining a green cover over the winter period has many environmental, agronomic and economic benefits including:

1, To take up any remaining nutrients after harvest especially nitrogen and reduce potential nitrate leaching over the winter period.

2. To improve soil structure, soil drainage,

3. To protect soils from winter rainfall and

4. To add valuable soil organic matter over time.

Nitrogen Recovery

Sowing date has a major impact on the N uptake by a sown cover crop. A study carried out on the tillage Signpost farms in 2021, where a range of cover crops were sown across a number of farms, showed nitrogen uptakes of 10 to 64 kg N/ha with higher recovery being for crops sown by mid August. And the lowest being for crops sown in mid September.

Different cover crop species will have different abilities to recovery N over the winter period. For example from the 2021 Signpost farm study, a late August sown cover crop of rye and phacelia recovered 64 kg N/ha. On the same site where wheaten straw was chopped N recovery was reduced to 27 kg N/ha.

Crop Yield

Earlier sown crops will produce larger tonnes of fresh material. Delaying the sowing date by 1 month on the Signpost tillage farms reduced the fresh yield from 18.8 to 2 t/ha for the GLAS mix. It also showed that natural regeneration was better than a late sown cover crop.

Natural Regeneration or Cover crops?

Natural regeneration

This is the least cost option and will meet requirements for a green cover over the winter period. Things to be considered:

1. Depending on the weed seed bank, shallow cultivation may be beneficial to help reduce the seed bank depending on weed types.
2. Over wintered weeds could be adding to the weed seed bank depending on weeds present for example annual meadow grass or chick weed.
3. Natural regeneration containing volunteer cereals will provide a green bridge for pests and foliar disease for the following crop. These covers should be removed a minimum of 6 weeks to break the green bridge before establishing the following spring crop.

Cover cropping

There has been a growing interest in cover cropping due to the GLAS scheme. In addition, farmers improving soil health, exploring alternative crop establishment systems such as min-till / direct drill to reduce labour and production costs have integrated cover crops into the farming systems. Things to consider:

1. When selecting a cover crop mix it is important to consider seed costs and your crop rotation. For example, where you have oilseeds in the rotation avoid brassica species such as mustard, radish, rape etc. as they are the same family and can be a host for such diseases as club root. There is many reports in 2022 of club root in winter oilseed rape crops and it is associated with short-term brassica type cover crops in the rotation.
2. Grasses or cereals are also an option but in a cereal rotation, they can be a host for both pests and diseases plus potential volunteers in the following crop. Phacelia is a good option as it is unrelated to most common crops and it is relatively easy to remove in springtime.
3. Legumes such as peas, beans, vetches and clovers have the potential to fix N and reduce the fertiliser N for the following crop. Legumes will need to be sown earlier to aid establishment and the seed tends to be expensive.