

## Option No 1- Establishing & Managing Winter Cover Crops



Example of a winter cover crop- Oil Radish

**Aim of this initiative-** To help reduce nitrate leaching into the Fell Sandstone drinking water aquifer in North Northumberland. **(NB: This is a one year option and limited to 50ha across the farm).**

### **Benefits of establishing winter cover crops-**

Cover crops are normally planted in the autumn (after the main crop has been harvested) to help provide a vegetated cover for the soil over winter. Cover crops provide many soil and water related benefits including:

- Helping prevent nitrate leaching, especially over autumn and winter, when rainfall is high.
- Improving water quality and the soils physical and biological quality. Increasing soil organic matter (and carbon capture).
- Reducing soil erosion and diffuse pollution such as sediment run-off.
- Improving soil structure, through deep root penetration, (including breaking up compacted areas in the field), making it easier for the following crop's roots to develop.
- Reducing the weed seed bank in the soil and breaking pest cycles. (Specialist advice from an agronomist may be advisable.)
- Providing habitat, food and cover for farmland birds (and other wildlife) over winter.

**Where best to establish winter cover crops-** Try to identify suitable fields where this option would be most beneficial to reducing nitrate leaching (i.e. those immediately above or adjacent to the Fell Sandstone drinking water aquifer) and including those fields that drain directly to watercourses. This includes:

- On lighter and sandier soils (where soil organic levels may be lower).
- Where stubbles are not retained over winter.
- Fields earmarked for Spring cropping next year (i.e. Spring 2021).
- Following crops such as potatoes or brassicas.
- Fields with high risk of erosion i.e. bare soil and sloping land.

**Management: When to establish (and destroy) quick growing winter cover crops-** To ensure the best chance of taking up the residual nutrients in the soil after harvest, it is suggested that the cover crop should be:

- Established as soon as possible after harvest of the main crop and not later than 15th September 2020, by drilling or broadcasting.
- Retained in the ground as long as possible (ideally up to the time of Spring sowing) but at least until the 15<sup>th</sup> February 2021. (NB- an earlier 'sprayed off' date of January 31<sup>st</sup> may be possible in exceptional circumstances for agronomic reasons. Speak with Tweed Forum if this is deemed necessary.)
- Have no inorganic fertiliser or organic manure applied.

- Sow at a suitable sowing rate to provide dense cover and protect soil from erosion.
- Be destroyed at the end of the cover crop period by cultivation/ploughing in or via herbicide application.
- Or be destroyed by light grazing after 15<sup>th</sup> February 2021.

**Appropriate winter cover crop mixes-** Seed mix choice may be influenced by existing crops in your rotation. It is best to avoid legume species (such as clover & vetch) as these plants fix nitrogen. Species such as Oil Radish produce deep penetrative roots, while Mustards have lateral roots. Black oats and Linseed have fibrous root systems. It is suggested that a seed mix **must contain at least 2 species (one cereal and one non cereal)** (for example- Black oats & Mustard or Forage Rye & Oil Radish) from a list including:

- White mustard.
- Kale/Mustard hybrid.
- Oil (Fodder) Radish.
- Linseed.
- Phacelia.
- Winter ryegrass.
- Italian ryegrass.
- Winter barley.
- Black Oats.
- (NB- Farmers may choose an existing approved seed house mixture -Advice from an agronomist is recommended). Legumes are not acceptable.

NB- Seed must be bought in and not farm grown (to reduce risk of disease build up).

**Eligible field areas & double funding-** Cover crops established as part of this project, cannot be used to comply with any Greening or Agri-environment Scheme requirements. This will be viewed as double funding. Part or entire fields overlying the Fell Sandstone are eligible (even if they only overlie the Fell Sandstone area in part.)

**Record keeping & verification-** A diary or record should be kept (for checking purposes if requested) including:

- Receipts for seed purchase, contracted ground preparation, etc.
- Seed mixes sown and area sown.
- Cover crop sowing dates and destruction dates.
- Photos (preferably geotagged).

**Further information-** More information on establishing and managing cover crops can be obtained from the project partner & facilitator:

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#### Project Partners

