

Brendan Paul - Cover Crops



Cover Crops

15 January 2014

Brendan Paul

07767 310454

brendan.paul@agrii.co.uk

Agrii

Connecting agri-science with farming



The use of Cover Crops

1. Purpose is to benefit subsequent crops
2. Incorporated into soils to add organic matter and raise fertility levels (**green manures**)
3. Prevent leaching of soluble nutrients from the soil (**Nitrogen sink**)
4. Physical soil improve with roots
5. Suppresses weeds (**companion cropping**)
6. Reduction of soil borne pests (**biofumigation**)
7. Environmentally friendly approach to modern farming
8. High artificial fertiliser prices (**legumes**)

Agrii

Connecting agri-science with farming



www.soilandwater.org.uk

Green Manures

1. The growing crop
 1. Takes up free Nitrogen
 2. Reduces soil erosion
 3. Weed control

2. Dead crop is incorporated into the soil
 1. adding organic matter
 2. raising soil fertility, including Nitrogen from above
 3. Improves soil structure and composition



Green Manure Categories

	N Fixers	Not N Fixers
Spring drilled catch crop	Red clover Crimson clover Alsike clover Yellow blossom clover	White mustard Phacelia Buckwheat Westerwolds Fodder radish Adios
Late summer drilled catch crop		White mustard Fodder radish Adios Rape/mustard hybrids
Late summer drilled crop fed or silage	Lupins Vetches	Italian ryegrass Forage rye Forage rape Chicory Plantain
More than 1 season	Red clover White clover Lucerne	Italian ryegrass Grass



Brendan Paul - Cover Crops

Incorporation of green manure

1. Incorporate green manure by rotavating or shallow ploughing. Before doing this, cut the crop with a mower.
2. Leave a few weeks after incorporation before sowing the next crop to allow the allelopathic effects of some green manures to subside
3. Incorporate when plant is at its most succulent state, this way the nutrients are released quicker. More mature green manure crops take longer to decompose and release nutrients, Useful for subsequent crops that require nitrogen later i.e. Wheat

Agrii

Connecting agri-science with farming



Crib Sheet

Crop	Seed rate (kg/ha)	Sowing time	Can be mown or grazed?	Duration
White clover	10-15	Mar-Aug	Yes	2-5 years
Red clover	15-20	Mar-Aug	Yes	1-2 years
Crimson clover	15-18	Mar-Jun, Aug	No	2-3 months
Sub clover	10-15	Mar-Jun, Aug	Yes	5-7 months
Lucerne	20-25	Mar-Jun, Aug	Yes	1-3 years
Trefoil	10-15	Mar-Aug	Yes	Up to 1 year
Lupins	200-250	Mar-May	No	3-5 months
Field beans	200-250	Mar or Oct	No	5-7 months
Winter vetch	75-125	Mar-Sep	Not generally	3-6 months
Grazing rye	150-180	Aug-Oct	Yes	7 months
Mustard	8-12	Mar-Sep	No	2-3 months *
Stubble turnips	8-10	Apr-Aug	Yes	8 months
Phacelia	10-15	Apr-Jul, Sep	No	2-3 months*
Buckwheat	60-80	Apr-Aug	Yes (if done early)	2-3 months
Westerwolds ryegrass	32-38	Mar-Jun, Aug	Yes	9-12 months
Chicory	12-18	Apr-Aug	Yes	12-18 months

HDC Project FV 299

Agrii

Connecting agri-science with farming



www.soilandwater.org.uk

Brendan Paul - Cover Crops

Sources of information

1. www.agrii.co.uk
2. Ohiostate university extension service
www.ohioline.osu.edu
3. SARE Sustainable Agriculture Research & Education
University of Maryland
4. Green Manures - HDRA as part of HDC Project FV 299

Agrii

Connecting agri-science with farming



Cover Crops

15 January 2014

Brendan Paul

07767 310454

brendan.paul@agrii.co.uk

Agrii

Connecting agri-science with farming



www.soilandwater.org.uk