CATCH & COVER CROP

Adding value to your soil
Weed Control
Cover crop species control weeds through light and nutrient deprivation. Faster growing brassica species and phacelia are most effective.

Organic Matter
Up to 5% of the soil's organic matter is used by crops each year, which has led to some soils on arable farms becoming severely deficient. Incorporating fresh organic matter improves soil structure, mineral composition and beneficial microbial activity. It also aids soil aeration and locks in nitrogen making it available to following crops.

Weed Control
Cover crop species control weeds through light and nutrient deprivation. Faster growing brassica species and phacelia are most effective.

Nitrogen
Additional nitrogen can be made available for cash crops by fixing nitrogen from the atmosphere or preventing nitrogen leaching from the soil.

FORMATION
Legumes fix nitrogen from the atmosphere making it available to the following crops. Quick growing species such as crimson clover and berseem clover are best for short breaks between cash crops, whereas vetches are more effective for a longer growing period. It is important to note that legumes become most effective at fixing nitrogen when the soil temperature is over 8°C.

LEACHING PREVENTION
Nitrogen and other nutrients are lost through leaching when soil is left bare for any period of time, particularly over the winter when rainfall is high. Scavenging this nitrogen from the soil and holding it for the following crop is often easier and more effective than attempting to fix additional nitrogen from the atmosphere. It can be done effectively with cereals and mustard.
BLACK OAT  AVENA STRIGOSA
VARIETY: LUXURIAL
LUXURIAL is the leading variety of black oats from European breeder Panam Semences. Developed specifically for the cover crop market, LUXURIAL combines late maturity, rapid establishment and high biomass production.

- More frost sensitive than other cereals
- Allelopathic variety
- Controls root lesion nematode (Pratylenchus penetrans)
- Resistant to root-knot nematode (Meloidogyne hapla)
- Develops fibrous roots to relieve soil compaction
- Resistant to rust, barley yellow dwarf virus and aphids

<table>
<thead>
<tr>
<th>Sowing Period: Aug-Oct</th>
<th>Sowing Rate: 30-50kg/ha</th>
<th>Winter Hardy: NO</th>
</tr>
</thead>
</table>

RED VETCH  VICIA ATROPURPUREA
VARIETY: BINGO
Available exclusively through the EnviroSeeds range, the use of BINGO red vetch is an exciting development in short term cover crops. BINGO establishes more quickly, produces more biomass and is more susceptible to frost than common vetch.

- Fast growing, nitrogen-fixing legume
- Suits early Autumn sowing where winter kill is important
- Breaks down quickly once incorporated
- Ideal for use in mixtures with berseem clover
- Bred by leading breeder Jouffray-Drillaud

<table>
<thead>
<tr>
<th>Sowing Period: Mar-Oct</th>
<th>Sowing Rate: 25-50kg/ha</th>
<th>Winter Hardy: NO</th>
</tr>
</thead>
</table>

FORAGE RYE  SECALE CEREALE
VARIETY: TURBOGREEN
TURBOGREEN is the perfect rye variety for cover crops - suitable for very late sowings, quick to establish and late maturing. Forage Rye scavenges nitrogen from the soil making it accessible to the following crop.

- Late maturity and good lodging resistance
- High dry matter yield
- Rapid tillering and root development
- Strong weed suppression even at low sowing rates
- Reduces nutrient leaching and soil erosion
- Resistant to rust and aphids

<table>
<thead>
<tr>
<th>Sowing Period: Aug-Oct</th>
<th>Sowing Rate: 30-50kg/ha</th>
<th>Winter Hardy: YES</th>
</tr>
</thead>
</table>

WHITE MUSTARD  SINAPSIS ALBA
VARIETY: SARAH/LITEMBER
SARAH is produced in Holland by Vandinter Semo, one of Europe's leading cover crops specialists. High vigour, late maturity and high biomass production make SARAH every grower's first choice variety.

- Economical cover crop solution
- High vigour and late maturing
- Produces high dry matter
- Rapid establishment
- Excellent weed suppressor and soil conditioner
- Suitable as stand alone crop or in a mixture

<table>
<thead>
<tr>
<th>Sowing Period: Apr-Sept</th>
<th>Sowing Rate: 10-15kg/ha</th>
<th>Winter Hardy: NO</th>
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COMMON VETCH  VICIA SATIVA
VARIETIES: SLOVENA, NACRE
SLOVENA and NACRE are frost tolerant, which distinguishes them from other common Vetch varieties. Most effective at fixing nitrogen when allowed a prolonged growing season in either Spring or Autumn.

- Large seed size ensures strong early vigour
- Fixes nitrogen available for the following crop
- Breaks down quickly once incorporated
- Produced in the UK and trusted on farm
- Excellent companion to both black Oats and Rye
- Frost susceptible varieties also available

<table>
<thead>
<tr>
<th>Sowing Period: Mar-Oct</th>
<th>Sowing Rate: 25-50kg/ha</th>
<th>Winter Hardy: VARIETY DEPENDENT</th>
</tr>
</thead>
</table>

BROWN MUSTARD  BRASSIC JUNCEA
VARIETIES: SCALA, VITTASSO
Brown Mustard provides a winter hardy cover crop to suppress weeds, pump water and improve soil structure. Both SCALA and VITTASSO are developed by leading breeders to be used as cover crops in their own right or for biofumigation.

- Improves soil health and catches nitrogen
- Increases organic matter and suppresses volunteers
- Rapid Autumn growth and winter hardy
- Exceptional root development in a short period of time
- Active against Pythium, Rhizoctonia and Verticillium
- See page 4 for more information on biofumigation

<table>
<thead>
<tr>
<th>Sowing Period: Apr-Sept</th>
<th>Sowing Rate: 5kg/ha</th>
<th>Winter Hardy: YES*</th>
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</thead>
</table>

*Brown mustard usually withstands temperature down to -5°C.
**OIL RADISH** *Raphanus sativus*

**VARIETIES: ROMESA, BRUTUS**

Oil Radish produces large amounts of biomass and extended tap roots, making it ideal for soil conditioning. Nematode resistant varieties also have the ability to reduce beet cyst nematode (*Heterodera schachtii*) populations by over 90% (class 1) and 85% (class 2).

- Fodder Radish is a very quick growing green manure
- Very rapid to germinate, establish and suppressing weeds
- Will penetrate compacted soils with its strong deep rooting tap root
- Ability to draw up nutrients from the subsoil and scavenge nitrogen
- Fodder Radish also produces large amounts of organic matter

**BERSEEM CLOVER** *Trifolium alexandrinum*

**VARIETY: TABOR**

Berseem Clover grows rapidly and fixes nitrogen quickly. TABOR is very susceptible to frost and unique in being a ‘single-cut’ variety. This means once killed by frost or cut, it does not regrow and therefore makes it ideal for short term cover crops and companion cropping.

- Fast growing, nitrogen-fixing annual
- Very quick growing, tender to frosts
- Suppresses weeds and easy to incorporate
- Ideal for use in mixtures with vetch
- Available Pre Inoculated to aid root nodulation (special order)

**TILLAGE RADISH** *Raphanus sativus*

**VARIETIES: STRUCTURATOR, DAIKON**

Tillage Radish is a term coined to the Radish varieties that produce significantly larger root mass than standard varieties. We offer DAIKON, which produces a thick, bulbous root, and STRUCTURATOR which has a deeper root penetration into the soil.

- Very effective soil compaction reduction
- Extremely strong tap root
- High biomass production
- Suppresses weeds
- Scavenges nitrogen

For orders and advice call 01531 822833
<table>
<thead>
<tr>
<th>Species</th>
<th>Description</th>
<th>Sowing Period</th>
<th>Sowing Depth</th>
<th>Sowing Rate</th>
<th>Winter Hardy</th>
</tr>
</thead>
</table>
| **PHACELIA** PHACELIA TANACETIFOLIA | - Very quick to establish  
- Good weed suppressant  
- Matures in 10-12 weeks  
- Produces large, shallow root mass  
- Excellent pollinator | Apr-Oct          | 1-2cm         | 5-10kg/ha   | NO           |
| **LUCERNE** MEDICAGO SATIVA | - Long term perennial  
- Excellent nitrogen fixer  
- Long tap root  
- Suits light, chalky soils  
- High dry matter, high protein | Apr-Oct          | 1-2cm         | 20kg/ha     | YES          |
| **ETHIOPIAN MUSTARD** BRASSICA CARINATA | - Frost hardy brassica  
- Easy to establish  
- Excellent weed suppressant  
- Produces very leafy canopy  
- Tolerates poorer soils | May-Aug          | 1-2cm         | 5-15kg/ha   | YES          |
| **CRIMSON CLOVER** TRIFOLIUM INCARNATUM | - Nitrogen fixing annual  
- Sow summer/post harvest  
- Rapid growth in spring  
- Suppresses weeds  
- Tolerant of poor soils | Aug-Sep          | 1cm           | 5-15kg/ha   | YES          |
| **BUCKWHEAT** FAGOPYRUM ESCULENTUM | - Very quick growing annual  
- Extremely tender to frost  
- Excellent weed suppressant  
- Nectar rich pollinator  
- Scavenges phosphates | May-Jul          | 2-3cm         | 50kg/ha     | NO           |
| **LINSEED** LINUM USITATISSIMUM | - Easy and quick to establish  
- Suits thinner soils  
- Good companion to legumes  
- Fibrous root structure  
- Scavenges nitrogen | Apr-Aug          | 2-3cm         | 50kg/ha     | NO           |
| **SUNFLOWER** HELIANTHUS ANNUS | - Extensive and prolific root system  
- Very effective at soaking up nutrients  
- Beneficial to pollinators and all insects  
- Rapid and early season establishment  
- Significant biomass production for a short season | Apr-Aug          | 2-3cm         | 12kg/ha     | NO           |

Visit [www.greenfarmseeds.com](http://www.greenfarmseeds.com)
**GFS GRABBER**

Our most popular cover crop mixture comprising Rye and Winter Vetch. SLOVENA Vetch has a prolonged growing season and fixes nitrogen at lower temperatures than other legumes. Rye develops a strong root structure to scavenge nitrogen and suppresses weeds.

- Fixes and catches nitrogen
- Overwinters
- Low cost
- Good weed suppression
- Mid & High Tier SW5 & SW6

**Contents:**
- 80% TURBOGREEN Rye
- 20% SLOVENA Vetch

**Sowing Rate:**
- 35-50kg/ha

**GFS CATCHMORE**

Great mixture for scavenging nitrogen from the soil. White Mustard and Phacelia establish and grow very quickly, making this mixture particularly good for growing over the short catch crop period for EFAs. Suitable for use as an over winter cover crop as Rye and Brown Mustard are frost resistant.

- Very quick growing
- Catches nitrogen very quickly
- Suitable for catch crop
- Covers ground through winter

**Contents:**
- 60% TURBOGREEN Rye
- 25% SARAH White Mustard
- 10% SCALA Brown Mustard
- 5% BEEHAPPY Phacelia

**Sowing Rate:**
- 25kg/ha

---

**GFS AUTUMN DM**

Suitable for early Autumn sowing with high dry matter production. Phacelia puts on a large amount of growth in a short period of time. The three different rooting structures improve soil structure and scavenge nitrogen. The inclusion of Rye ensures cover through the winter.

- Suitable for early sowing
- High dry matter
- Fixes and catches nitrogen
- Good for soil structure

**Contents:**
- 80% TURBOGREEN Rye
- 15% MIKAELA Vetch
- 5% BEEHAPPY Phacelia

**Sowing Rate:**
- 25kg/ha

**GFS SPRINTER**

Specifically for early Autumn sowing where high biomass is required but the cover is not required to overwinter. LUXURIAL is exceptionally quick to establish but late to mature, reducing risk of unwanted seed shed. MIKAELA Vetch establishes and grows quickly in the autumn.

- Best sown in early Autumn
- Short term, very quick growing
- Fixes and catches nitrogen
- Winter kill is likely

**Contents:**
- 70% LUXURIAL Black Oats
- 30% MIKAELA Vetch

**Sowing Rate:**
- 25kg/ha

---

**GFS ECOCOVER**

Can be sown down to 25kg/ha for the most economical cover or catch crop solution. White Mustard is quick to establish and fast growing. As it is tender to frost, it is also easy to incorporate in to the soil. Together with the prostrate growth of Rye, this mixture is effective at suppressing weeds.

- Low cost
- Covers ground through winter
- Fast establishment
- Good weed suppression

**Contents:**
- 80% TURBOGREEN Rye
- 15% MIKAELA Vetch
- 5% BEEHAPPY Phacelia

**Sowing Rate:**
- 35-50kg/ha

**GFS SOIL REVIVOR**

Diverse mixture to improve soil structure and provide plenty of top growth. Fibrous roots of Black Oats combine with the deep, penetrative radish root and lateral root growth from Brown Mustard for maximum soil conditioning. Also produces high dry matter.

- Diverse mixture
- Good for soil structure
- High dry matter
- Catches nitrogen

**Contents:**
- 80% LUXURIAL Black Oats
- 15% ROMESA Oil Radish
- 5% SCALA Brown Mustard

**Sowing Rate:**
- 25kg/ha

---

We reserve the right to substitute similar varieties dependent on availability.

For orders and advice call 01531 822833
**GFS PAN BUSTER**
A blend of three leading oil radish varieties; great for improving soil structure and suppressing weeds. Sowing at 10kg/ha encourages greater root growth to break up soil compaction. Higher sowing rates encourage greater top growth.

- Deep rooting
- Breaks up soil compaction
- Rapid water uptake from waterlogged soils
- Very quick growing

<table>
<thead>
<tr>
<th>Contents:</th>
<th>Sowing Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>40% Dakon Tillage Radish</td>
<td>10kg/ha</td>
</tr>
<tr>
<td>30% PINA Oil Radish</td>
<td></td>
</tr>
<tr>
<td>30% ANNA Oil Radish</td>
<td></td>
</tr>
</tbody>
</table>

**GFS HYDROMAX**
Cost effective solution for fast establishment and good ground cover to suppress weeds. Can be used effectively to improve soil structure and take moisture out of the soil over a short period of time. When incorporated in to the soil, Brown Mustard has a biofumigation effect.

- Deep, fibrous roots
- Good weed suppression
- Catches nitrogen
- Low cost

<table>
<thead>
<tr>
<th>Contents:</th>
<th>Sowing Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>70% SARAH White Mustard</td>
<td>12.5kg/ha</td>
</tr>
<tr>
<td>30% SCALA Brown Mustard</td>
<td></td>
</tr>
</tbody>
</table>

**GFS NEMASHIELD**
Created specifically to target soil borne pathogens. NemaShield contains type 2 resistant varieties of both white mustard and oil radish to maximise control of beet cyst nematode (Heterodera schachtii). See page 5 for more information on nematode control.

- Powerful anti-nematode effect
- Breaks up soil compaction
- High biomass production
- Scavenges nitrogen

<table>
<thead>
<tr>
<th>Contents:</th>
<th>Sowing Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% IRIS White Mustard</td>
<td>25kg/ha</td>
</tr>
<tr>
<td>50% PINA Oil Radish</td>
<td></td>
</tr>
</tbody>
</table>

**GFS COMPANION**
New mixture designed to be sown as a companion crop with winter oilseed rape. This mixture contains only the most frost tender varieties of red vetch and berseem clover, making this unique to any other available in the market. In a normal Winter, both will be killed without need for additional herbicide treatments.

- Rapid growth and nitrogen fixation in the autumn
- Frost tender varieties that will not regrow
- Suppresses weeds
- Effective short-term nitrogen fixing cover crop

<table>
<thead>
<tr>
<th>Contents:</th>
<th>Sowing Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>80% BINGO Red Vetch</td>
<td>20kg/ha</td>
</tr>
<tr>
<td>20% TABOR Berseem Clover</td>
<td></td>
</tr>
</tbody>
</table>

**NEW**
Visit [www.greenfarmseeds.com](http://www.greenfarmseeds.com)
Green Farm Seeds offers a comprehensive range of cover crop mixtures but extends to bespoke mixtures also. Composing a mixture that is both viable and economical can be challenging - the three steps below offer some methodology to enable you to do so.

1. **Identify the Priorities**
   - Organic Matter
   - Soil Structure
   - Biofumigation
   - Pest Control
   - Weed Control
   - Allelopathy
   - Nitrogen Fixing
   - Leaching Prevention
   - Erosion Control
   - Water Uptake

2. **Duration**
   - Sowing Date
   - Winter Hardiness
   - EFA Compliance
   - Risk of Seed Shed

3. **Practicalities**
   - Rotational Conflict
   - Seed Rate
   - Seed Size
   - Sowing Depth
   - Management
   - Cost

**AVOID...**
Inappropriate seed rates - mixture percentages are based on weight rather than seed number. For example, there are over ten times the number of seeds per gram of phacelia than rye. More than five species in a mixture - low quantities of lots of species will have little positive effect on the soil.
<table>
<thead>
<tr>
<th>Species</th>
<th>Type</th>
<th>Sowing Rate per ha kg</th>
<th>Sowing Depth cm</th>
<th>Sowing Period</th>
<th>EFA Compliant</th>
<th>Over Winter Use</th>
<th>Nitrogen Fix</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSTARD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown</td>
<td>Brassica</td>
<td>5</td>
<td>1-2</td>
<td>Apr-Oct</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>Brassica</td>
<td>10-15</td>
<td>0.5</td>
<td>Apr-Sept</td>
<td>YES</td>
<td>NO</td>
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<tr>
<td>Ethiopian Mustard</td>
<td>Brassica</td>
<td>5-15</td>
<td>1-2</td>
<td>May-Aug</td>
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<td>YES</td>
<td></td>
</tr>
<tr>
<td>VETCH</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>Legume</td>
<td>25-50</td>
<td>1-2</td>
<td>Mar-Oct</td>
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<td>Red</td>
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<td>1-2</td>
<td>Mar-Oct</td>
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<tr>
<td>OIL RADISH</td>
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<td>Tillage</td>
<td>Brassica</td>
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<td>1-2</td>
<td>Apr-Aug</td>
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<td>OTHER SPECIES</td>
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<td>Berseem Clover</td>
<td>Legume</td>
<td>5-15</td>
<td>1</td>
<td>Mar-Aug</td>
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<tr>
<td>Black Oats</td>
<td>Cereal</td>
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<td>Aug-Oct</td>
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<td>Linseed</td>
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<tr>
<td>Lucerne</td>
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<tr>
<td>Phacelia</td>
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<td>0.5</td>
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<td>Rye</td>
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<td>Sunflower</td>
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<td>GREEN FARM SEEDS MIXTURES</td>
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<tr>
<td>Grabber</td>
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<tr>
<td>EcoCover</td>
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<td>1-2</td>
<td>July-Aug</td>
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<td></td>
</tr>
</tbody>
</table>

Information provided in this catalogue is given in good faith, and should act as a guide only. Local conditions, weather and crop rotations to will affect performance.