



# HARLOW AGRICULTURAL MERCHANTS

LIMITED

A PRACTICAL GUIDE TO ENVIRONMENTAL, COVER CROP, GAME COVER AND FORAGE SEEDS



# Welcome

## YOUR COUNTRYSIDE 2023

A warm welcome to all who regularly receive our brochure and to those who are reading it for the first time, we hope you find it informative.

With an increasing focus on UK Farming to ensure land farmed contributes in an environmentally sustainable way; biodiversity, pollinators, regenerative agricultural, improving soil health and water quality, stewardship and cover crops grown to a high quality will all have a key role to play in this. As well as the benefits they bring direct to the field, stewardship and cover crops contribute to form a core element of agri-environment schemes, providing growers with additional revenue streams as a result. Whatever your requirement for Stewardship, Cover Crops, Game Cover or Forage, we trust that 'Your Countryside 2023' will guide you to easy solutions to your cropping needs.

### RESEARCH AND DEVELOPMENT

All the species marketed by DLF Seeds Ltd are trialled at our Gloucestershire site. In consultation with many of our customers, we trial and evaluate many different types of products and mixture prescriptions. We believe this is the most important part of the process as we procure seed from more than a dozen countries, so testing and evaluating performance under UK conditions is vital. Our customers may rest assured that they are dealing with a forward thinking company which invests heavily in R&D, majoring in forage crops but also focusing on many other crop species. Our Product, Species and Mixture of the year have been carefully selected using customer feedback.

Our main goal is to ensure that our customers receive the best possible product portfolio we can supply for the stewardship schemes and the Your Countryside catalogue continues to offer valuable technical information and advice on a diverse range of game cover, environmental stewardship mixtures, root crops and cover crops products.

However, if you are unable to find exactly what you are looking for within this catalogue, please contact your local technical expert who will be able to assist and advise you on your specialist mixture.

We gratefully acknowledge all photographic contributions.

### WE WORK CLOSELY WITH:

Natural England, RSPB, Campaign for the Farmed Environment, Game and Wildlife Conservation Trust, Bumblebee Conservation Trust and Floral Locale.



Promoting the restoration of wild plants and habitats for biodiversity, landscapes and people

[www.floralocale.org](http://www.floralocale.org)



Supporting farmers to help their local wildlife

Farm Wildlife provides farmers and advisers with best practice guidance on helping wildlife on their farms and inspiring them to take action. Farm Wildlife guidance has been produced by a partnership of some of the UK's leading conservation organisations and the farmers they work with.

The 6 point plan to manage arable farms for wildlife provides advice on how to enhance:

1. Existing habitats
2. Field boundaries
3. Flower-rich habitats
4. Wet features
5. Seed-rich habitats
6. Farmed areas



For more information go to [www.farmwildlife.info](http://www.farmwildlife.info)



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## ICON GUIDE



COVER



FEED



NECTAR



LIFTING



CATTLE GRAZING



SHEEP GRAZING



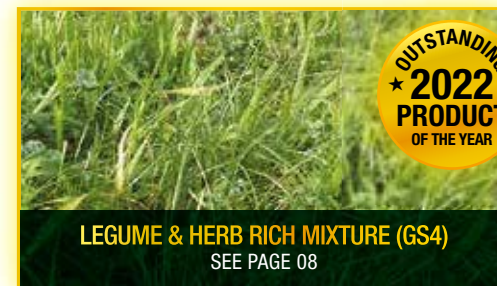
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## FORAGE CROPS

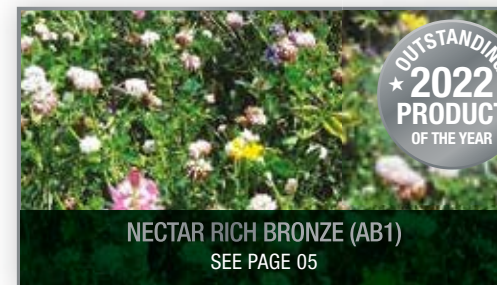
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NECTAR RICH BRONZE (AB1)  
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DELICANTE FODDER BEET  
SEE PAGE 40

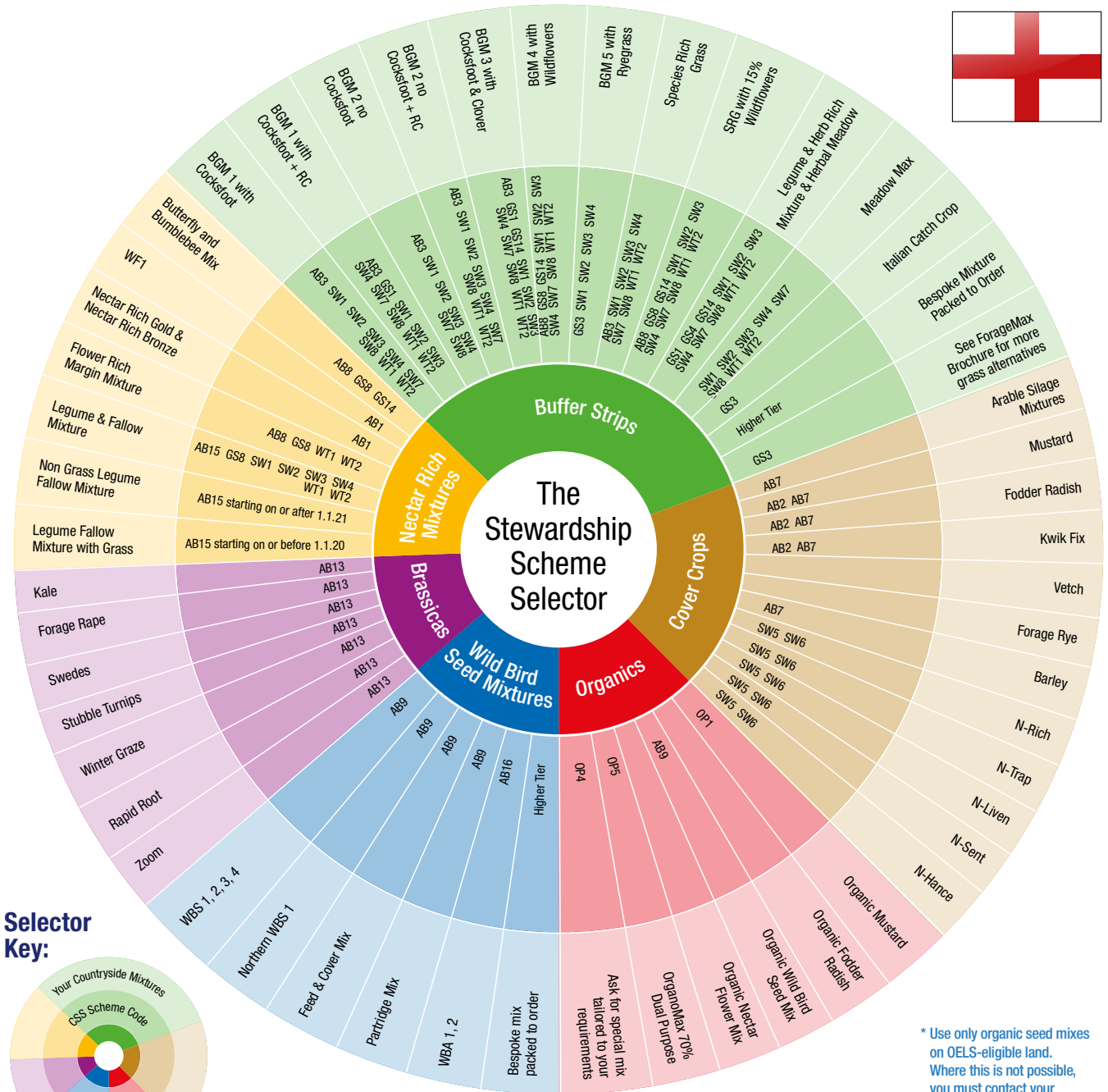
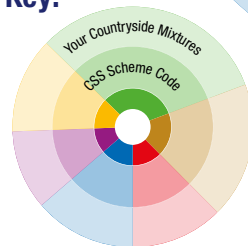
**DISCLAIMER** Any information provided in this catalogue is given in good faith and to the best of our existing knowledge. Any advice should therefore be taken as a general guide only and not relied upon for all conditions and circumstances. We cannot accept any legal liability for information given in this guide. In any instance where there are shortages of specified species we reserve the right to substitute equivalent species.

# Countryside Stewardship Selector



Countryside Stewardship Scheme Description			
CSS Higher Tier	CSS Mid Tier	CSS Code	CSS Option Title
<b>Arable</b>			
✓	✓	AB1	Nectar flower mixture
✓	✓	AB2	Basic overwinter stubble
✓	✓	AB3	Beetle banks
✓	✓	AB7	Wholecrop cereals
✓	✓	AB8	Flower-rich margins & plots
✓	✓	AB9	Winter bird food
✓	✓	AB13	Brassica fodder crop
✓	✓	AB15	Two year sown legume fallow
✓	✓	AB16	Autumn sown bumblebird mix
<b>Grassland</b>			
✓	✓	GS1	Take field corners out of field management
✓	✓	GS3	Ryegrass seed-set as winter food for birds
✓	✓	GS4	Legume and herb-rich swards
✓	✓	GS8	Creation of species-rich grassland
✓	✓	GS14	Creation of grassland for target features
<b>Organic</b>			
✓	✓	OP1	Overwintered stubble
✓	✓	OP2	Wild bird seed mixture
✓	✓	OP4	Multi-species ley
✓	✓	OP5	Undersown cereal
<b>Soil and Water</b>			
✓	✓	SW1	4-6m buffer strip on cultivated land
✓	✓	SW2	4-6m buffer strip on intensive grassland
✓	✓	SW3	In-field grass strips
✓	✓	SW4	12-24m watercourse buffer strip on cultivated land
✓	✓	SW5	Enhanced management of maize crops
✓	✓	SW6	Winter cover crops
✓	✓	SW7	Arable reversion to grassland with low fertiliser input
✓	✓	SW8	Management of intensive grassland adjacent to a watercourse
<b>Wetlands</b>			
✓	✓	WT1	Buffering in-field ponds and ditches in improved grassland
✓	✓	WT2	Buffering in-field ponds and ditches in arable land

### Selector Key:



**DISCLAIMER:** Any information provided in this table is given in good faith and to the best of our knowledge. If you would like further advice please contact your local Natural England Advisor.

\* Use only organic seed mixes on OELS-eligible land. Where this is not possible, you must contact your Organic Inspection body for a derogation.



# Nectar Rich Mixtures

## NECTAR RICH MIXTURES

### WF1 (AB1)

- 40% Sainfoin
- 10% Vetch
- 5% Birdsfoot Trefoil
- 5% Alsike Clover
- 5% Yarrow
- 5% Red Clover
- 5% Lucerne (inoculated)
- 5% Black Medick
- 4% Crimson Clover
- 2.25% Corn Cockle (N)
- 2% Oxeye Daisy (N)
- 2% Black Knapweed (N)
- 2% Selfheal (N)
- 1.5% Cornflower (N)
- 1.5% Sheeps Burnet
- 1% Red Campion (N)
- 1% Corn Marigold (N)
- 1% Field Poppy (N)
- 1% Wild Carrot (N)
- 0.5% White Campion (N)
- 0.25% Musk Mallow (N)

100%

Sowing rate 5 - 10kg/ha  
Pack size 1kg & 5kg

(N) = UK Native Seed

DLF Seeds Ltd. is a leading supplier of native provenance wild flowers. We liaise with selected producers and growers to ensure our seed is sourced to the highest possible standard.

### Nectar Rich Gold (AB1)

- 33% Sainfoin
- 25% Vetch
- 10% Red Clover
- 8% Alsike Clover
- 8% Lucerne (inoculated)
- 6.5% Crimson Clover
- 4% Birdsfoot Trefoil
- 4% Black Medick
- 1% Black Knapweed (N)
- 0.5% Yarrow

100%

Sowing rate 15kg/ha  
Pack size 15kg

### Annual Nectar Mixture

- 22% Buckwheat
- 20% Sainfoin
- 17% Vetch
- 10% Crimson Clover
- 10% Lucerne (inoculated)
- 8% Phacelia
- 7% Red Clover
- 6% Alsike Clover

100%

Sowing rate 10kg/ha  
Pack size 10kg

### Nectar Rich Bronze (AB1)

- 40% Vetch
- 30% Sainfoin
- 10% Crimson Clover
- 6% Red Clover
- 5.5% Lucerne (inoculated)
- 4% Alsike Clover
- 2% Birdsfoot Trefoil
- 2% Black Medick
- 0.25% Yarrow
- 0.25% Black Knapweed (N)

100%

Sowing rate 15kg/ha  
Pack size 15kg

OUTSTANDING PRODUCT OF THE YEAR

*Everyone's talking about it!*



## ORGANIC MIXTURE

### Organic Nectar Flower Mixture

- 45% Organic Vetch
- 14% Sainfoin
- 12.5% Organic Crimson Clover
- 12.5% Organic Red Clover
- 7% Lucerne (inoculated)
- 5% Alsike Clover
- 4% Birdsfoot Trefoil

100%

Sowing rate 10 - 15kg/ha  
Pack size 10kg

## NATIVE WILDFLOWER MIXTURES



View the Colour Boost  
online digital brochure  
[www.bit.ly/ColourBOOST](http://www.bit.ly/ColourBOOST)



View the Pro Flora  
online digital brochure  
[www.bit.ly/PROflora](http://www.bit.ly/PROflora)

Pro Flora

- 1 Cornfield Annuals (N)
- 2 Acid Soils (N)
- 3 Damp Loamy Soils (N)
- 4 Calcareous Soils (N)
- 5 Wet Loamy Soils (N)
- 6 Dry Loamy Soils (N)
- 7 Hedgerow & Light Shade (N)
- 8 Legacy Country Meadow (N)
- 9 Heritage General Purpose (N)
- 10 General Purpose (N)
- 11 Woodland & Heavy Shade (N)
- 12 Water Margin & Pond Edges (N)
- 13 Species Rich Lawn & Landscape (N)
- 14 Tall Herb & Tussock (N)
- 15 Pollinator (N)
- 16 Coastal (N)
- 110 General Purpose Economy (N)

Pack size 1kg

**MASTERLINE<sup>®</sup>**

To view the Masterline brochure scan the QR code or visit  
[www.bit.ly/masterline-dlf](http://www.bit.ly/masterline-dlf)

**CONTACT US FOR MORE INFORMATION**      **SCAN HERE**



# Flower Rich Margins

Flower Rich Grass Margins provide important habitat for invertebrates and birds

## FLOWER RICH MARGINS

### Butterfly & Bumblebee Mixture (AB8)

15% Creeping Red Fescue  
15% SSMG  
10% Browntop Bent  
10% Hard Fescue  
10% Sheeps Fescue  
6% Lucerne (inoculated)  
5% Yorkshire Fog  
4% Hairy Vetch  
4% Birdsfoot Trefoil  
4% Kidney Vetch (N)  
4% Alsike Clover  
2% Black Knapweed (N)  
1% Plantain  
1% Tufted Hairgrass  
1% Common Agrimony (N)  
1% Phacelia  
1% Red Campion (N)  
1% Musk Mallow (N)  
1% White Campion (N)  
1% Oxeye Daisy (N)  
1% Selfheal (N)  
1% Cornflower (N)  
1% Wild Carrot (N)

100%

Sowing rate 16 - 20kg/ha

Pack size 1kg & 5kg

**DISCLAIMER:** In any instances where there are shortages of specified species we reserve the right to substitute equivalent species.

### BGM 4 with Wildflowers & Fine Grasses (AB8)

90% GRASSES, 10% WILD FLOWERS

45% Creeping Red Fescue  
15% Chewings Fescue  
15% Hard Fescue  
15% SSMG  
2.5% Sainfoin  
2.5% Vetch  
1.5% Red Clover  
1.25% Alsike Clover  
0.75% Plantain  
0.5% Birdsfoot Trefoil  
0.25% Black Knapweed (N)  
0.25% Oxeye Daisy (N)  
0.25% Sheeps Burnet  
0.25% Yarrow

100%

Sowing rate 16 - 20kg/ha

Pack size 20kg



### Flower Rich Margin Mixture (AB8)

80% GRASSES, 20% WILD FLOWERS

25% Slender Red Fescue  
25% SSMG  
12% Chewings Fescue  
10% Crested Dogstail  
5% Hard Fescue  
3.25% Sainfoin  
3% Vetch  
3% Browntop Bent  
2.5% Birdsfoot Trefoil  
2% Black Medick  
2% Red Clover  
2% Black Knapweed (N)  
1.3% Oxeye Daisy (N)  
1.2% Yarrow  
1% Wild Carrot (N)  
1% Plantain  
0.5% Selfheal (N)  
0.25% Musk Mallow (N)

100%

Sowing rate 16 - 20kg/ha

Pack size 10kg & 20kg

## Bumblebee Conservation Trust supporting wild pollinators on your land



**Bumblebee Conservation Trust**

Bumblebees and solitary bees are very important pollinators of both commercial agricultural crops and wild flowers. Many UK species have declined in recent years due to habitat loss. Bumblebees rely on flower rich habitats from March to September to provide essential nectar resources for colony growth. They also require undisturbed tussocky grassland for nesting.

There are a number of ways these habitats can be provided on arable and livestock farms, including planting pollen and nectar margins or wildflower buffer strips and implementing a more sensitive management regime; no/very light application of farm-yard manure, no chemical fertilizers, taking a late hay cut (Mid-July to August) allowing wildflowers to set seed and adopting a sensitive grazing regime.

Details on how you may improve your land for bumblebees and other pollinators can be found in our series of land management fact sheets: [www.bumblebeeconservation.org/get-involved](http://www.bumblebeeconservation.org/get-involved). We can also offer tailored advice in our target areas.

Please contact [advice@bumblebeeconservation.org](mailto:advice@bumblebeeconservation.org)

## SPECIES RICH WILD FLOWERS MIXTURES

### Species-Rich Wild Flowers (SRWF)\* Native

16% Black Knapweed (N)  
15% Selfheal (N)  
10% Birdsfoot Trefoil (N)  
10% Ribwort Plantain (N)  
10% Yellow Rattle (N)  
9% Oxeye Daisy (N)  
8% Red Campion (N)  
8% White Campion (N)  
4.5% Salad Burnet (N)  
4% Wild Carrot (N)  
4% Sorrel (N)  
1% Black Medick (N)  
0.5% Lady's Bedstraw (N)

100%

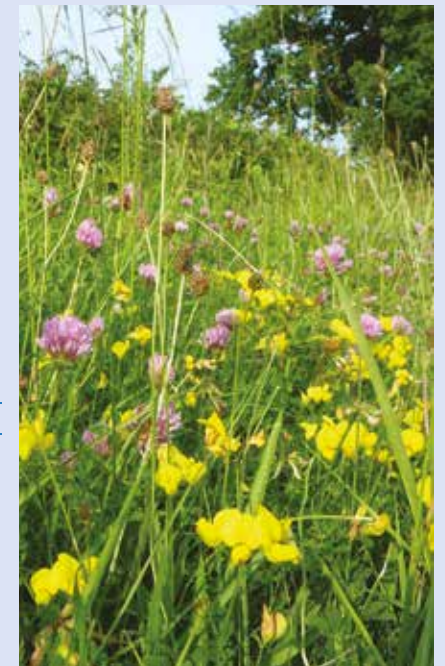
Pack size 1kg

### Species-Rich Grass (SRG)\*

20% Red Fescue  
20% SSMG  
20% Browntop Bent  
10% Meadow Fescue  
10% Sheeps Fescue  
10% Hard Fescue  
10% Crested Dogstail

100%

Pack size 20kg



\* Species-Rich Grass & Species-Rich Wild Flowers are available separately or as a mixture of grasses (SRG) & flowers (SRWF) together in the following ratios:

95% SRG with 5% SRWF

85% SRG with 15% SRWF

Sowing rate 16kg/ha

Pack size 20kg



# Buffer Strip Mixtures

## BUFFER STRIPS MIXTURES

### BGM 1 with Cocksfoot

- 35% Creeping Red Fescue
- 25% Cocksfoot
- 20% Tall Fescue
- 15% SSMG
- 5% Timothy

100%

Sowing rate 20kg/ha  
Pack size 20kg

### BGM 2 no Cocksfoot

- 27% Creeping Red Fescue
- 22% Chewings Fescue
- 22% SSMG
- 22% Tall Fescue
- 7% Timothy

100%

Sowing rate 20kg/ha  
Pack size 20kg

### BGM 3 with Cocksfoot and Clover

- 27% Creeping Red Fescue
- 22% Tall Fescue
- 17% Cocksfoot
- 17% SSMG
- 7% White Clover
- 7% Timothy
- 3% Birdsfoot Trefoil

100%

Sowing rate 20kg/ha  
Pack size 20kg

### BGM 1 RC Red Clover and Cocksfoot

- 30% Creeping Red Fescue
- 25% Cocksfoot
- 20% Tall Fescue
- 15% SSMG
- 5% Timothy
- 5% Red Clover

100%

Sowing rate 20kg/ha  
Pack size 20kg

### BGM 2 RC Red Clover no Cocksfoot

- 27% Creeping Red Fescue
- 22% Chewings Fescue
- 22% SSMG
- 17% Tall Fescue
- 7% Timothy
- 5% Red Clover

100%

Sowing rate 20kg/ha  
Pack size 20kg

### BGM 5 with Ryegrass (GS3)

- Ryegrass seed set as winter food for birds
- 40% Italian Ryegrass
- 30% Inter. Perennial Ryegrass
- 30% Late Perennial Ryegrass

100%

Sowing rate 35kg/ha  
Pack size 20kg

## LEGUME FALLOW MIXTURES FOR AB15

### Legume Fallow Mixture with Grass (AB15) 2 Year

Agreements starting on or before 1st Jan 2020

- 66% Perennial Ryegrass
- 15% Red Clover
- 10% Vetch
- 4% Birdsfoot Trefoil
- 3% Black Medick
- 1% Alsike Clover
- 1% Lucerne (inoculated)

100%

Sowing rate 30 - 40kg/ha  
Pack size 20kg



### Non Grass Legume Fallow Mixture (AB15) 2 Year

Agreements starting on or after 1st Jan 2021

- 52% Vetch
- 16% Alsike Clover
- 16% Lucerne (inoculated)
- 10% Red Clover
- 3% Birdsfoot Trefoil
- 3% Black Medick

100%

Sowing rate 15 - 20kg/ha  
Pack size 20kg

(N) = UK Native Seed

DLF Seeds Ltd. is a leading supplier of native provenance wild flowers.

We liaise with selected producers and growers to ensure our seed is sourced to the highest possible standard.



Legume & Herb Rich Mixtures provide reliable forage & beneficial pollinators & improve soil structure

# Legume & Herb Rich Mixtures

Legume and herb-rich mixtures provide an abundance of productive grazing for livestock whilst providing habitat and food source for invertebrates and pollinators, supporting biodiversity.

Herbal leys develop a beneficial soil structure through the increase of organic matter due to the variety of species used and the length of time they are in the soil. Grasses offer the reliable bulk forage in these mixtures. These leys replace organic matter lost through rotation and also supply a valuable forage crop for livestock grazing or cut for silage.

The Nitrogen fixing ability of legumes, reduces the need for artificial fertilisers, as well as increasing the protein content which directly enhances DLWG or milk production. Deep rooting herbs break through damaged soil structure providing livestock with access to vital nutrients and minerals. Herbs act as a natural anthelmintic, reducing reliance on wormers.

**DISCLAIMER:** Stock should be introduced gradually over a two week period and an area of grassland should be available for animals to return to; water and hay or straw should also be made available. Please contact your supplier for further guidance.

## HERBAL MIXTURES

### Legume & Herb Rich Mixture (GS4)

25% Perennial Ryegrass  
25% Festulolium  
15% Creeping Red Fescue  
10% SSMG  
7% Red Clover  
5.6% Sainfoin  
5% Timothy  
3% Alsike Clover  
1.93% Lucerne (inoculated)  
1% Sheeps Burnet  
0.5% Birdsfoot Trefoil  
0.5% Plantain  
0.25% Yarrow  
0.2% Sheeps Parsley  
0.02% Black Knapweed (N)

100%

Sowing rate 30kg/ha  
Pack size 20kg



### Herbal Meadow (GS4)

27% Perennial Ryegrass  
20% Festulolium  
13% Cocksfoot  
10% SSMG  
7% Red Clover  
6% Sainfoin  
5% Timothy  
5% Lucerne (inoculated)  
3% Alsike Clover  
1% Fenugreek  
1% Chicory  
0.7% Plantain  
0.5% Birdsfoot Trefoil  
0.5% Sheeps Burnet  
0.25% Yarrow  
0.05% Sheeps Parsley

100%

Sowing rate 30kg/ha  
Pack size 20kg

Organic multi species mixture OP4 available on request



### Mixed Herbs

26% Sainfoin  
23% Sheeps Burnet  
20% Plantain  
15% Sheeps Parsley  
13% Chicory  
3% Yarrow

100%

Sowing rate Variable  
Pack size 2kg, 5kg & 20kg



### SFI Herbal Legume Mixture

25% Red Clover  
25% Plantain  
25% White Clover  
5% Alsike Clover  
5% Chicory  
5% Sheeps Burnet  
5% Sheeps Parsley  
4% Birdsfoot Trefoil  
1% Yarrow

100%

Sowing rate Variable  
Pack size 5kg & 20kg

## SOLAR MIXTURES

Our range of Solar Mixtures will cater for most situations. We are always pleased to advise. Please call for more information. Specialised mixtures to suit individual requirements can be arranged.





# Herbs and Legumes

09

ENVIRONMENTAL

## PLANTAIN

A perennial herb providing a high mineral forage with a crude protein content of around 20%. Plantain provides all-year round grazing, even in drought conditions. Often mixed with other herbs, this species provides well tillered plants in high density mixtures that will complement the grazing system.

Pack size 5kg & 25kg



## CHICORY

A mineral-rich herb with a long taproot which infiltrates the soil to a great depth and can break through soil compaction. Chicory is a high protein, anthelmintic species that lifts trace elements from within the soil profile that are then made available for intake by livestock. This highly productive species is especially good for fattening lambs. If not well managed, chicory can become tall and woody therefore good management is essential to maintain feed quality.

Pack size 5kg & 25kg

## SHEEPS BURNET

A perennial herb which helps to provide a long grazing season attributable to its early spring growth. A well-established taproot improves drought tolerance within a sward whilst aiding the supply of vital trace elements to livestock.

Pack size 5kg & 25kg

## SHEEPS PARSLEY

Often mixed with other forage herbs, this species has a deep taproot that is able to lift trace elements from great soil depths whilst also aiding drought tolerance. Recognised for its high iron content along with vitamins A and C, Sheeps Parsley can prove a valuable addition to grazing swards.

Pack size 5kg & 25kg

## YARROW

A forage herb with a very deep rooting structure that has been noted to improve circulation and blood flow in livestock. Yarrow is commonly mixed with Sheeps Parsley, Burnet and Plantain although due to its minute seed size, should only be included at a low rate to ensure that it does not dominate the sward.

Pack size 5kg



## SAINFOIN

Sainfoin acts as a natural anthelmintic and the condensed tannins this legume contains aids protein absorption thus improving feed conversion efficiency by livestock. Unlike other species, Sainfoin will not cause bloat in livestock and as little as 10% in a sward will offset the risk of bloat created from other legumes. Best suited to light soils, the deep rooting system of Sainfoin provides a drought-resistant forage that requires no nitrogen fertiliser and little phosphate. This legume prefers alkaline soils and although slow to establish, it is a persistent species. Sainfoin also increases biodiversity by attracting an abundance of insects and invertebrates, especially pollinators.

Pack size 5kg & 25kg



## LUCERNE

A persistent, perennial legume that performs particularly well on light, drought prone soils due to its deep, penetrating root system. The roots improve soil structure and aid fertility by fixing atmospheric nitrogen. Above the soil surface, Lucerne produces a high protein, palatable forage crop that is an excellent accompaniment to energy feeds in a ration.

Pack size 20kg

Organic seed available in 25kg packs (Limited)

## BIRDSFOOT TREFOIL

A nitrogen-fixing, anthelmintic species which helps boost soil fertility. Like Sainfoin, this species contains tannins to support the absorption of protein by both sheep and cattle. Birdsfoot Trefoil is continually included in diverse mixtures owing to its contribution of beneficial properties both above and below the soil surface.

Pack size 1kg & 25kg



## RED CLOVER

A high protein, nitrogen-fixing forage legume that can be grown on almost all soil types. When grown as part of a mixture, clover greatly increases the forage yield for both grazing and cutting.

Pack size 2kg & 25kg

Organic seed available in 25kg packs



# Wild Bird Seed Mixtures

## SPRING SOWN MIXTURES

### WBS 1 (AB9) 1 Year Spring Sown

*Attracts Tree Sparrows*

- 40% Spring Triticale
- 28% Spring Barley
- 15% Spring Wheat
- 10% Fodder Radish
- 5% White Millet
- 2% Red Millet

---

**100%**

**Sowing rate 40kg/ha**

**Pack size 20kg**



For Higher Tier & HLS these mixtures must be agreed with the local Natural England Advisor before ordering seed.

Bespoke mixtures can be packed to order.

**Treatment** Some species may be treated

### WBS 2 (AB9) 1 - 2 Year Spring Sown

*Attracts Grey Partridge*

- 45% Spring Triticale
- 20% Spring Barley
- 15% Spring Wheat
- 7% Kale
- 4% Fodder Radish
- 4% White Millet
- 3% Quinoa
- 2% Red Millet

---

**100%**

**Sowing rate 40kg/ha**

**Pack size 20kg**



### WBS 3 (AB9) 1 Year Spring Sown

*Attracts Finches & Buntings*

- 50% Spring Triticale
- 15% Spring Barley
- 15% Spring Wheat
- 8% White Mustard
- 7% Linseed
- 5% Forage Rape

---

**100%**

**Sowing rate 40kg/ha**

**Pack size 20kg**

## ORGANIC WILD BIRD SEED MIXTURE 1

### 1 Year Spring Sown (OP2)

- 40% Organic Spring Wheat
- 30% Organic Spring Barley
- 13% Spring Triticale
- 10% Fodder Radish
- 5% White Millet
- 2% Red Millet

---

**100%**

**Sowing rate 40kg/ha Pack size 20kg**

### WBS 4 (AB9) 1 Year Spring Sown

*Attracts Finches & Buntings*

- 45% Spring Triticale
- 25% Spring Barley
- 8.5% Dwarf Sorghum
- 7% White Millet
- 5% Linseed
- 4% Japanese Reed Millet
- 3% Red Millet
- 2.5% Gold of Pleasure

---

**100%**

**Sowing rate 40kg/ha**

**Pack size 20kg**

WBS 4 - Herbicide tolerant, but please discuss with your agronomist for current specific products and recommendations.

## ORGANIC WILD BIRD SEED MIXTURE 2

### 1 - 2 Year Spring Sown (OP2)

- 35% Organic Spring Wheat
- 35% Organic Spring Barley
- 10% Spring Triticale
- 7% Kale
- 4% Fodder Radish
- 4% White Millet
- 3% Quinoa
- 2% Red Millet

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**100%**

**Sowing rate 40kg/ha Pack size 20kg**

### Feed & Cover Mixture (AB9)

- 25% Spring Triticale
- 24% Spring Barley
- 24% Spring Wheat
- 7% Dwarf Sorghum
- 6% White Millet
- 5% Sunflower
- 3% Japanese Reed Millet
- 2.5% Red Millet
- 2.5% Gold of Pleasure
- 1% Quinoa

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**100%**

**Sowing rate 40kg/ha**

**Pack size 20kg**





# Wild Bird Seed Mixtures

Wild Bird Seed mixtures provide important food resources for farmland birds & insects

## NORTHERN SPRING SOWN MIXTURES

### Partridge Mixture (AB9)

- 40% Spring Barley
- 30% Spring Triticale
- 15% Linseed
- 10% Spring Oats
- 4% Gold of Pleasure
- 1% Kale

100%

Sowing rate 62kg/ha

Pack size 25kg

### Northern Shot Mixture

- 35% Spring Triticale
- 25% Spring Barley
- 20% Spring Wheat
- 10% Kale
- 5% Hybrid Brassica
- 2% Chicory
- 2% Yellow Blossom Clover
- 1% Green Fennel

100%

Sowing rate 50 - 60kg/ha

Pack size 20kg

### Northern WBS 1 (AB9)

#### 1 Year Spring Sown

- 60% Spring Triticale
- 20% Spring Barley
- 8% Linseed
- 4% Forage Rape
- 4% White Mustard
- 2% Phacelia
- 2% Fodder Radish

100%

Sowing rate 40kg/ha

Pack size 20kg

### Northern WBS 2

#### 2 Year Spring Sown

- 50% Spring Triticale
- 10% Spring Barley
- 10% Spring Wheat
- 7% Kale
- 7% Quinoa
- 7% Fodder Radish
- 4% Yellow Blossom Clover
- 3% Green Fennel
- 2% Red Clover

100%

Sowing rate 40kg/ha

Pack size 20kg

## AUTUMN SOWN MIXTURES

### WBA 1 (AB16) 2 Year Autumn Sown

- 25% Winter Triticale
- 25% Winter Wheat
- 20% Winter Barley
- 6% Vetch
- 5% Fodder Radish
- 5% Forage Rape
- 3% Gold of Pleasure
- 3% Lucerne (inoculated)
- 2% Alsike Clover
- 2% Birdsfoot Trefoil
- 2% Crimson Clover
- 2% Red Clover

100%

Sowing rate 40 - 50kg/ha Pack size 20kg

### WBA 2 Autumn Sown Bumblebird Mixture (AB16) 2 Year Autumn Sown

- 25% Winter Triticale
- 21% Winter Wheat
- 20% Winter Barley
- 8% Fodder Radish
- 6% Vetch
- 5% Crimson Clover
- 5% Kale
- 3.4% Gold of Pleasure
- 3% Lucerne (inoculated)
- 1% Birdsfoot Trefoil
- 1% Phacelia
- 1% Red Clover
- 0.2% Black Knapweed (N)
- 0.2% Oxeye Daisy
- 0.2% Yarrow

100%

Sowing rate 40 - 50kg/ha Pack size 20kg

## NON CEREAL MIXTURES

### Northern WBS 2

#### Non Cereal

- 23% Kale
- 23% Quinoa
- 23% Fodder Radish
- 14% Yellow Blossom Clover
- 10% Green Fennel
- 7% Red Clover

100%

Sowing rate 12kg/ha

Pack size 10kg

### Farmland (Wild) Bird Seed Mixture

#### Non Cereal

- 45% Linseed
- 25% Buckwheat
- 17% Fodder Radish
- 10% White Millet
- 3% Phacelia

100%

Sowing rate 20kg/ha

Pack size 10kg

The small seed element of Northern WBS2 and Farmland (Wild) Bird Seed Mixture without cereals have been formulated for those who have access to home grown cereals.



Northern Star Game Mixture

### Northern Star Game Mixture

- 34% Spring Beans
- 30% Spring Triticale
- 20% Spring Wheat
- 5% Forage Rape
- 5% Kale
- 2% Gold of Pleasure
- 2% Quinoa
- 2% Yellow Blossom Clover

100%

Sowing rate 50kg/ha

Pack size 20kg

Treatment Some species may be treated

Another mixture that also may be suitable for AB9: Decoy Mixture – pg 35



# Scottish Rural Development Agri-Environment Climate Scheme (AECS)



## AECS Options that require Seed

### Wild Bird seed for Farmland Birds

Pages 10 - 12. Page 11 - Non Cereal Mixtures specifically for those who wish to use their own cereal. Page 12 - Northern WBS 1

### Forage brassicas for Farmland Birds

Pages 37 - 43

### Stubbles followed by green manure in an arable rotation

Pages 12, 16 - 19

### Creation of Beetle Banks, Water Margins and Grass Strips

Page 12 - BGM 6 Grass Margin Mix

### Creation of Species Rich Grassland

Pages 6 & 12

Pages 5, 6, 7 & 8 of this brochure contain many other mixtures designed for herbal meadows, fallow ground, pollen and nectar, nitrogen fixing and wild flowers, many of which suit AECS options.

[www.ruralpayments.org/topics/all-schemes/schemes-overview](http://www.ruralpayments.org/topics/all-schemes/schemes-overview)

\*Disclaimer – The information provided in this catalogue is given in good faith and to the best of our knowledge at the time of printing. Any advice should therefore be taken as a general guide and not relied upon for all conditions and circumstances. We cannot accept any legal liability for information given in this guide.

## Wild Bird Seed Mixtures

Specifically for Scottish conditions

### NORTHERN WBS 1

1 Year Spring Sown

60% Spring Triticale  
20% Spring Barley  
8% Linseed  
4% Forage Rape  
4% White Mustard  
2% Phacelia  
2% Fodder Radish

100%

Sowing rate 40kg/ha  
Pack size 20kg

### FORAGE BRASSICAS FOR FARMLAND BIRDS

Cannot Graze until 1st March

Best to consider

Swedes • Kale • Hardy Turnips • Hardy Hybrids

## AECS Green Cover Crops

Stubbles followed by Green Manure in an arable rotation

Where spring crops are sown after green cover

### SPRING GREEN COVER MIXTURE

60% Buckwheat  
30% Crimson Clover  
10% Vetch

100%

Sowing rate 12 - 15kg/ha Pack size 20kg

Alternative mixtures Annual Nectar Mixture and Kwik Fix

Where winter cereals are sown after green cover

### OVER WINTER GREEN COVER RYE MIXTURE

85% Forage Rye  
15% Red Clover

100%

Sowing rate 25kg/ha Pack size 25kg

Alternative mixtures N-Rich Cover Mixture

### OVER WINTER GREEN COVER GRASS MIXTURE

85% Italian Ryegrass  
15% Red Clover

100%

Sowing rate 25kg/ha Pack size 25kg

Alternative mixtures N-Rich Cover Mixture

## BGM 6 GRASS MARGINS, WATER MARGINS & BEETLE BANKS

45% Strong Creeping Red Fescue  
15% Chewings Fescue  
9% SSMG  
9% Cocksfoot  
6% Hard Fescue  
5% Sainfoin  
5% Vetch  
1.5% Alsike Clover  
1% Bentgrass  
1% Red Clover  
1% Plantain  
0.5% Sheeps Parsley  
0.5% Sheeps Burnett  
0.25% Birdsfoot Trefoil  
0.25% Yarrow

100%

Sowing rate 20kg/ha  
Pack size 20kg

## NORTHERN SPECIES RICH GRASS

85% Non Aggressive Grass Species  
15% Native Wildflowers (UK provenance)

100%

Sowing rate 16 - 20kg/ha  
Pack size 20kg



# BPS Scotland - Greening

## A guide to Ecological Focus Area (EFA) Mixtures



**EFA Fallow Land (EFAFAL) Scottish Government Basic Payment Scheme – Greening**  
 Fallow Period 15th January to 15th July. No agricultural production between these dates. Wild Bird Mixtures & Wild Flower mixtures are encouraged and may be sown during the fallow period. After the fallow period is over grass may be cut or grazed. Plan ahead for 2024 and sow a late heading mixture after 16th July 2023.

**EFA Margins (EFAM) Scottish Government Basic Payment Scheme – Greening**  
 Period is 1st January to 31st December. They should be around the margin of a field or split 2 crops within a field. Must be between 1m and 20 m wide. You are allowed to cut for hay or silage after 15th July. If not beside a watercourse it may be grazed. Wild flower, wild bird seed and normal grass mixtures may be established.

**EFA Catch Crops (EFACC) Scottish Government Basic Payment Scheme – Greening**  
 Establish the crop in spring. The only catch crop you can grow will be a cereal nurse crop with undersown grass. **It should be a recognised grass seed mixture.** The catch crop must be retained until at least the 31st December. You may graze the catch crop after harvest of the main crop.

**EFA Green Cover (EFAGC) Scottish Government Basic Payment Scheme – Greening**  
 Establish the green cover crop by 1st November. Maintain the green cover up to 31st December inclusive. Do not graze during the maintenance period 1st November and 31st December. It must be a mixture of 2 or more of the following: Alfalfa, barley, red clover, white clover, mustard, oats, phacelia, radish, rye, triticale and vetch.

**EFA Nitrogen Fixing Crops (EFA-NFIX) Scottish Government Basic Payment Scheme – Greening**  
 You must ensure that all EFA nitrogen-fixing crops are surrounded by a claimed EFA margin. You cannot harvest before 1st August to protect ground nesting birds. You must grow 2 of the following; Alfalfa, beans, birdsfoot trefoil, chickpea, red and white clover, lentils, lupins, peas and vetch. Mixtures are allowed, but the nitrogen-fixing species must be dominant by weight.

**EFA Hedges (EFAH)**

**EFA Agro-Forestry (EFAAF)**

These are EFA options for Scotland that do not require any seed.

EFA Weighting 1.0	Fallow Mixture PAGE 7	BGM 1,2 or 3 PAGE 7	Northern WBS 1 PAGES 11 & 12	Farmland Wild Bird Mixture PAGE 11
EFA Weighting 1.5	BGM 1,2 or 3 PAGE 7	BGM 6 PAGE 12	Northern WBS 1 PAGES 11 & 12	Any Grass Mixture
EFA Weighting 0.3	Any Recognised Grass Mixture	Italian Catch Crop Mixture		
EFA Weighting 0.3	Over Winter Green Cover Grass Mix PAGE 12	Over Winter Green Cover Rye Mix PAGE 12	Spring Green Cover Mix PAGE 12	N-Rich Cover Mix PAGE 19
EFA Weighting 1.0	Alfalfa PAGES 9 & 17	Peas & Beans	Red & White Clover PAGES 9 & 17	Vetch PAGES 17
Various				



# Glastir Welsh Environmental Scheme



Glastir is the All-Wales Agri-Environment Scheme introduced by the Welsh Assembly Government. It is a 5 year whole farm sustainable land management scheme available to farmers and land managers across Wales. Since 2012 it has replaced the four existing agri-environment schemes, Tir Gofal, Tir Cynnal, Tir Mynydd and the Organic Farming Schemes.

## GROWING FOR THE ENVIRONMENT

Growing for the Environment is a grant scheme available to all eligible farmers in Wales. The scheme supports the growing and utilisation of crops, which can result in improvements in the environmental performance of a farm business.

The scheme objectives are to support farmers to:

- Reduce carbon and greenhouse gas emissions
- Adapt to climate change and build greater resilience into farm businesses
- Improve water quality and reduce flood risks
- Contribute towards a reversal in the decline of Wales' native biodiversity

Crops and activity supported through the Growing for the Environment scheme have been pre-identified as offering clear and quantifiable benefits to the environment and farm business.

Growing for the Environment Scheme supports the establishment of a range of spring and summer sown crops which can result in improvements in the environmental performance of a farm business. These include mixed leys, protein crops and unsprayed cereals. The full list of eligible crops and requirements have been specified.

## Options

1. Mixed leys. (Also referred to as multi species or herbal leys)
2. Red clover or Lucerne.
3. Protein crops. (No weed control)
4. Unsprayed root or forage crop.
5. Unsprayed spring sown cereals
6. Unsprayed spring cereals under sown with mixed ley.
7. Unsprayed cereal and protein crop mix.
8. Unsprayed cereal and protein crop under sown with mixed ley.
9. Under sowing maize (Spring / summer sown)

The application window opened on 10th October 2022 and closed on 18 November 2022.

The scheme is now closed – until further notice



For further info please see the link below – or scan the QR code above

[gov.wales/growing-environment-rules-booklet-window-2-html](https://gov.wales/growing-environment-rules-booklet-window-2-html)

Please contact us for details of special mixtures available for the scheme.

Glastir will ensure that future environmental challenges can be met by:

- COMBATING CLIMATE CHANGE
- IMPROVING WATER MANAGEMENT
- MAINTAINING AND ENHANCING BIODIVERSITY

It is designed to deliver measurable outcomes at both a farm and landscape level in a cost effective way.

Glastir consists of three elements:

### 1. ALL-WALES ELEMENT (AWE)

A whole farm land management scheme which is open to application from all farmers and land managers throughout Wales. It is designed to provide support for the delivery of environmental benefits that meet today's challenges and priorities. Successful applicants will make a commitment to deliver environmental goods for five years under a legally binding contract.

### 2. TARGETED ELEMENT (TE)

A part farm scheme intended to deliver significant improvements to the environmental status of a range of habitats, species, soils and water that might also require changes to current agricultural practices. In order to achieve these specific improvements and outcomes, financial support from the Welsh Government will be targeted at locations where action will lead to the required result.

### 3. COMMON LAND ELEMENT (CLE)

Designed to provide support for the delivery of environmental benefits on common land.

**Option 32** Plant unsprayed root crops on improved grass and arable land

- White Turnips - see stubble turnip varieties and green globe turnips on page 38
- Swedes - see page 41
- Fodder Beet - see page 40
- Soft Yellow Turnips
- Hardy Yellow Turnips

**Option 33** Establish a wildlife cover crop on improved grass and arable land

For mixture option see WBS3 page 6.

These mixtures must include at least 80% cereal with at least one of the following - mustard, linseed, rape.

These mixtures are designed to provide both nesting sites and a food source for overwintering species such as tree sparrow, finches, buntings, skylark, grey partridge, yellowhammer and barn owl.

**Option 153** Red clover must make up at least 80% of the sward

Mixtures of red clover cultivars are permitted as is using a percentage of birdsfoot trefoil seed.



# Biogas Crops

Over recent years interest has increased in the production of crops for Anaerobic digestion plants.

## The advantages are:

- Replacement of fossil fuels
- Reduction of emissions of greenhouse gases
- Reduced impact of slurry
- Less leaching of nitrogen
- Less odour
- Conversion of waste and reducing the need for landfill

Production of Biogas is increased when an energy dense substrate is used to supplement slurry.

To this end, crops can be used as an alternative to waste with the added advantage of not requiring a waste disposal licence.

For a farmer developing a biogas plant, high output crops are a necessity. Also, for the grower with a plant in the neighbourhood, biogas cropping represents a useful source of income.

## The criteria for suitable crops are:

- High yield of DM per hectare
- High gas potential
- Low costs for growing and handling
- Ease of management and storage

## MAIZE SILAGE

Maize is a well-known source of biogas, having the advantages of a high methane yield per hectare and being relatively easy to store.

When choosing varieties, high dry matter and high yields are the major considerations; however yields of ME and starch should also be taken into account.

Dry matter at harvest is vitally important. For efficient ensiling the maize needs to achieve a dry matter content of between 30% and 32%. Some of the ultra high yielding varieties grown on the continent for Biogas may not reach this maturity in the UK climate.

## RYE

Rye has become very popular in the UK in recent years. We have varieties being tested against hybrid, conventional and forage rye types.

## BEET

Beet is the preferred option for 'feeding' anaerobic digesters, adapting well to many soil and climate types. It has the highest yield potential amongst all other arable crops and also has the highest dry matter. Due to its higher levels of sugar it has a shorter retention time in the digester than other crops which have a higher lignin and cellulose content. However storage is more difficult for beet, than other crops.

When selecting a variety, yield is of primary importance but cleanliness of the roots should also be considered. Varieties with a smooth root and low dirt tare should be chosen and for this reason Enermax is the perfect choice.

Close cropping of energy beet should be avoided as a build up of rhizomania or beet cyst nematode can occur - the crop should not be grown more often than one in three years on the same ground.

DLF have a dedicated breeding programme for Energy Beets.

## GRASS SILAGE

Grass is an extremely versatile crop; it is a good source of material for feeding anaerobic digesters, good for crop rotation, good for the environment and also adapts well to many different soil and climate types. In the autumn following beet or maize harvest ready for a silage cut in the spring.

High yielding species such as tall fescue and festuloliums, have a very high yield potential and they can in many situations compete with maize. Grass and grass with clover work very well in an anaerobic digester mixed with slurry, thus improving the yield of gas.

Grass is a perennial crop with a good environmental profile, improving crop rotation and bringing long term benefits to soil fertility.

## Comparison of gas yield from different crops

	Maize silage	Beet	Grass silage
Yield, tonnes dry matter/ha	11	13	11,5
% dry matter	33	20	33
% ash in dry matter	3	8	10
Nm3 methane/tonnes organic matter	352	435	307

Comparison of gas yield from different crops. Based on budget estimates from VFL DK. Søren Ugilt Larsen, Agrotech DK 2010 and 2011





Growing a cover crop is a very effective way of controlling nematode populations

# Cover Crops and Soil Health

## FOR SPRING SOWING & SUMMER INCORPORATION

Spring sown, summer crops are usually annual crops that as a rule do not tolerate frost. They are quick growing and will suppress weeds by light deprivation as well as providing organic material to improve soil structure and organic status. As they are usually fleshy crops and do not contain high proportions of carbon when incorporated into the soil, they do not substantially reduce stocks of soil nitrogen in the breaking down of the plant structure.

## AUTUMN SOWING & SPRING INCORPORATION

Autumn sown crops which go through the winter will scavenge nitrogen from soils thus preventing leaching which is taken much more seriously these days. They can be incorporated in the following spring or can provide a source of forage, prior to incorporation and also help to control erosion especially on late harvested maize stubbles. Certain species can be utilised to provide a nitrogen fixer which is then readily available to a spring sown crop.

## LONGER TERM CROPS

Grass and clover leys for long term fertility building must by their nature form part of the rotation. The increased duration of the sward ensures that the grass element provides a very strong root system valuable for soil aeration. The legumes with their deeper root system will improve water filtration through the soil structure encouraging increased soil nitrogen.

**Cover Crops can bring many advantages to the farmer by adding organic matter to the soil, increasing biological activity, improving soil structure, reducing erosion, increasing the supply of nutrients available to plants (particularly by adding nitrogen to the system by fixation), reducing leaching and encouraging weed suppression.**

There are some disadvantages and whilst these are few they should also be noted - lost opportunities for cash cropping, exacerbated pest and disease problems (green bridge effect), and the potential for cover crops to become weeds in their own right. These problems can be overcome with thought and measured usage, and the benefits to future crops can be significant.

**Cover Crops not only improve soil status, composition and nutrient balance but provide a basis for a more environmentally friendly approach to modern farming. We need to focus our minds on the twin problems of high artificial fertiliser prices and the soil's need for basic nutrients with these being available in a more sustainable form.**

A wide range of plant species can be used as soil conditioners. Different crops bring different benefits and the final choice is influenced by many considerations. If the most is to be made of soil conditioning crops, it is important that they are carefully integrated into the crop rotation and proper attention paid to their husbandry.

Cover Crops can be categorised as spring sown for summer usage and autumn sown for over-winter usage, intercropping and longer term fertility improvement.

Nitrogen (N) in legumes comes from uptake of soil N and the fixation of N from the atmosphere. The amount of N fixed by different legumes is determined by the inherent capacity of the crop/rhizobium symbiosis to fix N, modified by the crop's growing conditions (e.g. soil, climate, disease), crop management and length of time for which the crop is grown. Consequently, the influence of all these factors means that a wide range of values has been reported by different researchers. The presence of soil mineral N is generally thought to reduce fixation capacity. Factors that will increase the soil mineral N pool include manure application, cutting and mulching, and grazing. Fixation tends to decrease with legume age, mainly because the amount of soil N tends to increase.

Where growth of legumes is affected by nutrient deficiency (or acidity) the potential for soil N build up is reduced. Phosphorus, Sulphur and some trace elements (e.g. Molybdenum) are particularly important. Where there are large off-takes of soil nutrients as in silage crops both Phosphorus and Potash supplies need to be adequate for satisfactory legume growth. These should be replaced as they are essential to the legume to enable it to maximise the fixing of nitrogen.

## NEMATODES IN UK FARMING

### ROOT KNOT NEMATODES

- Produce galls and can severely damage plant health
- Crops most at risk are:- peas, onions, carrots, parsnips, and spring wheat

### CYST NEMATODES

- Beard like objects which grow and live on root surfaces
- Widespread in Europe and many parts of the world
- Crops most at risk are:- potatoes, sugar beet, rape and beetroot

### LESION NEMATODES

- Produce necrotic lesions throughout the cortex of infected roots
- Crops most at risk are carrots, parsnips, maize and legumes

### STUBBY ROOT NEMATODES

- Plant roots have a stunted stubby appearance
- Infected roots become less capable of supplying nutrients
- Crops most at risk:- potatoes, sugar beet, onions, carrots and parsnips

### STEM NEMATODES

- Can cause distortion in the stems in winter beans and necrotic area on the plant leaves
- Crops most at risk :- potatoes, onions and winter beans

## THEIR EFFECT ON AGRICULTURAL CROPPING

### Nematodes behave in different ways:

Ectoparasitic forms – feed externally on plant roots and Endoparasitic forms – invade the roots internally. Both forms cause damage, resulting in an overall reduction in yield or affect the marketability of the crop.

**Nematodes, also known as eelworms and roundworms. There are over 28,000 distinguishable species, of which 16,000 are parasitic.**

Approximately 50% are detrimental to plant health. Damage caused by nematodes can emerge differently from crop to crop. But there are a few symptoms which can appear, that are common to all.

- Stunted plants
- Plants wilt and appear to have no vigour
- Stem malformation
- Yellowing
- Root Galls
- Deformed roots and abnormal growth
- Plant death

**Globally, parasitic species can reduce agricultural production by approximately 12%.**



Crop	Pack size	Av sowing rate kg/ha	Treatment type	Sowing dates	Incorporation period	Root type/depth	Soil type	Nitrogen Fixing or Storing Plant	Useful information and growing tips
<b>Short Term Crops Spring/Summer Sowing &amp; Summer/Autumn Incorporation</b>									
White Mustard	10kg & 25kg	12 - 17	Untreated & <b>Organic</b>	Spring - Early Autumn	8 weeks after sowing	Fibrous root system	All types, best on light, sandy soils	Storing	Fast growing and good weed suppressor. Has biofumigation properties but not to same extent as brown mustard. Produces large quantities of biomass. Excellent scavenger of nitrogen. Requires fine seedbed. Susceptible to club root. Plough in before flowering to prevent self-seeding.
Brown Mustard	5kg & 25kg	5 - 7.5	Untreated	Spring - Autumn	Autumn - Spring	Taproot	All types, prefers moist ground	Storing	As white mustard, but contains high levels of glucosinolate which create biofumigation properties to reduce wireworm infestation. To maximise this benefit, crop must be finely chopped at flowering and thoroughly incorporated into moist soil. Brown mustard is winter hardy so is excellent for reducing soil erosion, water run-off and fertiliser leaching when grown after maize, potatoes & sugar beet.
Phacelia	2kg, 10kg & 25kg	7.5 - 10	Untreated & <b>Organic</b>	Spring - Summer	10 - 12 weeks after sowing	Shallow, fibrous	Most soil types, will tolerate dry conditions	Storing	Quick to establish and a good weed suppressor. Flowers loved by bees and butterflies. The crop must be incorporated into the soil before setting seed or it may reappear in subsequent crops as a weed. Said to release many minerals into soil as it decomposes, especially P, Ca and Mg.
Buckwheat	10kg & 20kg	50 - 70	Untreated & <b>Organic</b>	Spring - Summer	Summer - Autumn	Shallow, but with good penetration	Tolerates poor, but not wet soils	Storing	Fast growing and quick to mature, not winter hardy. Dislikes wet, heavy or compacted soil. Do not allow to set seed before incorporating into soil. Attractive to beneficial insects especially hoverflies. Good scavenger of phosphate.
Crimson Clover	5kg & 25kg	12.5 - 15	Untreated & <b>Organic</b>	Spring	Summer - Autumn	Taproot with fibrous branch roots	Prefers loam, will tolerate poor soils as long as alkaline and free draining	Fixing	Very attractive to insects. Excellent weed suppressor. Biomass degrades quickly into soil. Will over-winter in Southern England for autumn sowing/spring incorporation. Shade tolerant.
Linseed	25kg	60	Untreated	Spring - Summer	Autumn - Winter	Taproot with fibrous branch roots	Most types	Storing	Easy to establish with thin stems, attractive blue flowers and a thin tap root with fine branches off it. Not frost hardy, but does stand through the Winter.
Camelina / Gold of Pleasure	5kg & 25kg	12	Untreated	Spring - Autumn	Autumn - Spring	Tap and branch roots	Most types	Storing	Fast to establish and mature, can cope with poorer soils. Good resistance to pest & disease incidence and an excellent nectar source for bees. Medium biomass that allows other species room to grow.
Fodder Radish	10kg & 25kg	10 - 20	Untreated & <b>Organic</b>	Summer - Autumn	Autumn - Spring	Deep rooting taproot	Most types	Storing	Good early vigour that gives quick soil coverage, with a large biomass and a large taproot. Excellent Nitrogen scavenger.
Daikon Radish	5kg & 25kg	8 - 10	Untreated	Summer - Autumn	Autumn - Spring	Deep penetrating taproot	Most types	Storing	Fast establishing, big biomass, long large white tubers. Excellent for breaking up compacted soil with its aggressive taproot. An excellent nitrogen scavenger.
Egyptian / Berseem Clover	25kg	10 - 22	Untreated	Spring - Early Summer	Later Summer - Autumn	Taproot with fibrous root network	Needs deep fertile soils (uncompetitive)	Fixing	Annual clover. Grows aggressively throughout the summer and autumn. Likes deep fertile soils with plenty of moisture. Produces large amounts of biomass along with fixing large quantities of nitrogen. A good cover crop to put between two cereal crops.
Black Oats	25kg & 500kg	50 - 75	Untreated	Later Summer - Autumn	Winter - Early Spring	Fibrous root system	Grow in most soil types and conditions	Storing	Grows well under most conditions. Early vigour, quickly producing lots of biomass due to the plant rapidly tillering. Can flower early. The fast establishment helps to suppress weeds. Good at disrupting disease cycles. Not frost hardy.
<b>Over Winter Crops Autumn Sowing &amp; Spring Incorporation</b>									
Forage Winter Rye	25kg & 500kg	90 - 150	Untreated	Autumn	Spring	Extensive, fibrous root system	Grows well on light, sandy, free-draining soils	Storing	Produces large amounts of green material. Excellent nitrogen scavenger and for the prevention of nitrate leaching during winter months. Do not allow to run to seed as this will 'lock-up' available nitrogen. Very hardy.
Forage Rape	10kg & 25kg	6.5 - 10	Untreated & <b>Organic</b>	Spring - Autumn	Autumn - Spring	Deeply penetrating taproot	Most types, able to tolerate poor soil & exposed sites	Storing	Fast growing. Good alternative to mustard if using high glucosinolate varieties, as decomposition can release chemicals which produce a biofumigation effect if incorporated within 24 hours of cutting. Where club root is a problem, make sure a resistant variety is used.
Vetches	25kg	60 - 90	Untreated & <b>Organic</b>	Spring - Autumn	Autumn - Spring	Taproot	Prefers loams and clay. Will not thrive in wet or waterlogged conditions	Fixing	Good weed suppressor. Ensure a winter hardy variety is used. Due to its large seed size, will establish later than most other legumes. Requires fine, firm seedbed.
<b>Longer Term Crops</b>									
Lucerne Pre-inoculated	20kg	20 - 25	Untreated & <b>Organic</b>	Spring - Early Autumn	Autumn - Spring	Very deep taproot	Light/chalky/free-draining	Fixing	Seed must be inoculated with rhizobium bacteria. Prefers dry growing conditions. Uncompetitive particularly in early stage of development so grow as pure stand or with non-aggressive companion grasses.
White Clover	5kg & 25kg	5 - 7.5	Untreated & <b>Organic</b>	Spring - Early Autumn	Autumn - Spring	Creeping stolons, Shallow rooting	Wide range. Tolerates dry conditions	Fixing	Continued defoliation stimulates root growth and nitrogen fixation. Smaller leaved varieties are more persistent than larger leaved. Good weed suppressor. Shallow sow into fine, firm seedbed.
Red Clover	2kg & 25kg	12.5 - 15	Untreated & <b>Organic</b>	Spring - Early Autumn	Autumn - Spring	Large, strong taproot	Wide range, avoid poorly drained, acid soils	Fixing	Aggressive plant, does not release N until crop is ploughed in. Shorter term than white clover. Good for improving and aerating soil structure & useful weed suppressor. Ensure fine, firm seedbed.
Yellow Blossom Clover	2kg & 25kg	6	Untreated	Spring	Summer - Autumn	Long taproot	Prefers poor soil and dry conditions. Dislikes wet, heavy ground	Fixing	Biennial. Quick to establish and grows vigorously. Improves soil structure. Plough in before flowering and before stems become woody. Attractive to bees and other insects if allowed to flower.



Cover Crops  
have many  
soil structure  
benefits

# Cover Crop Species

## INCORPORATION OF COVER CROPS

Incorporation is most effective when plants are young and succulent and the crop is cut and chopped to produce a mulch before turning it into the soil. This allows it to decompose quickly and release nutrients to be used by the following crop.

Some crops, however, require nitrogen to be available at a later stage, in which case they will benefit from the cover crop being left to become more mature. Decomposition and the release of nutrients will take longer and will be more likely to be available at the right time in the crop's development.

It is very important not to sow too early because of the allelopathic effect of the decomposing plants on germinating seeds.

## DAIKON (TILLAGE) RADISH

A rapid growing crop that produces a large amount of biomass. Daikon has the ability to reduce nematodes and is also an excellent weed suppressor. Daikon produces a long aggressive taproot that penetrates through many different soil types, improving drainage and air movement through the soil. A major benefit is that Daikon captures and stores nutrients from deep in the soil over the winter period, which are released in the spring for the next crop. Daikon can provide much needed cover throughout the winter months for game birds or can be used as an excellent fast growing, nutrient storing green manure crop.



Daikon Radish

Club  
Root  
Tolerant

Sowing rate 8 - 10kg/ha  
Pack size 5kg & 25kg  
Treatment Untreated

**DISCLAIMER** The table on page 17 is given in good faith and intended for general guidance only. Weather, local conditions and crop rotations must always be taken into account.

## WHITE MUSTARD

Popular as a green manure crop. A relatively inexpensive and highly versatile cover crop either sown alone or as a companion to other species. White Mustard is a fast growing and good weed suppressor. Has bio fumigation properties but not to the same extent as brown mustard. White Mustard is ideal for early cover and produces large quantities of biomass although killed off by frost later. White Mustard is an excellent scavenger of nitrogen. Destroy before flowering to prevent self-seeding. Some varieties are nematode resistant.

Sowing rate 12 - 17kg/ha  
Pack size 10kg & 25kg  
Organic seed available in 25kg packs

## BROWN MUSTARD

A fast growing green manure crop with bio fumigation properties, i.e. Brown Mustard suppresses soil-borne pests and diseases. Brown Mustard can be sown between April and September. Unlike white mustard, it is winter hardy. It will improve the health of the soil by increasing organic matter and acts as an excellent weed suppressant. Brown Mustard is also especially useful as over-wintering green cover after maize, potatoes and sugar beet crops, reducing soil erosion, fertiliser leaching and water run-off.

Sowing rate 5 - 7.5kg/ha  
Pack size 5kg

## CRIMSON CLOVER

This is an annual clover that establishes quickly to aid weed suppression and has a wonderful network of tap and branch roots. It has a crimson flower that attracts many insects and the ability to trap and add Nitrogen to the soil for following crops. The species does have over wintering capabilities and the biomass produced degrades rapidly back into the soil profile. Sowing rate and pack size as per table.

## FODDER RADISH (OIL RADISH)

A fast growing cover crop, its speed of establishment aids weed suppression. Fodder Radish has a long tap root which will improve the soil structure and also has plenty of leaf that produces a large quantity of organic matter. An excellent nitrogen scavenger. Some varieties are nematode resistant.

Sowing rate 10 - 20kg/ha  
Pack size 10kg & 25kg  
Organic seed available in 25kg packs

## BERSEEM CLOVER

Also referred to as Egyptian clover, this is an annual species capable of explosive growth to produce a large biomass very quickly. The larger mass offers greater nitrogen production and return to the soil. The species has no frost tolerance and the large, fleshy plants produced degrade rapidly for ease of incorporation. Sowing rate and pack size as per table.

## BLACK OATS

A rapid growing leafy cereal crop which has early vigour with good weed suppression. It will produce large amounts of organic matter. Destroy before flowering to prevent self-seeding. Not winter hardy.

Sowing rate 50 - 75kg/ha  
Pack size 25kg & 500kg

## FORAGE RYE

A cereal crop that produces large amounts of organic matter and suppresses weeds. An excellent nitrogen scavenger that helps the prevention of nitrate leaching during the winter months. Winter hardy. Do not allow Forage Rye to run to seed as this will lock up available nitrogen.

Sowing rate 125 - 185kg/ha  
Pack size 25kg & 500kg

## WHITE CLOVER

Really useful fertility aid or "living mulch" that make it an excellent companion crop for many species especially cereals. Best to surface sow into a firm seed bed where the clover's creeping stolons can infill gaps and the small leaved cultivars have the ability to maintain ground cover, offer weed suppression and aid growth by nitrogen fixation and release. Sowing rate and pack size as per table (page 17). Note that sowing rates can be halved when used as a companion crop.

## JUPITER LEAFY TURNIP

Jupiter is a very leafy turnip that is late flowering, covers the soil very fast and is winter hardy. This variety can be sown in spring or autumn and for forage production these leafy turnips can be grazed after just 6-8 weeks. Jupiter also has a very high dry matter yield and excellent resistance to Alternaria.

Sowing rate 5 - 7.5kg/ha  
Pack size 10kg & 25kg



# Cover Crop Mixtures

Growing a Cover Crop is an effective way of erosion control

Our range of cover crop mixtures have been specially formulated to help you achieve the best from your soil by protecting and improving soil fertility and health between cash crops. Fast growing species have been chosen to help suppress weed growth and provide excellent cover producing huge quantities of organic matter and a variation of different rooting depths to ensure good soil penetration and utilisation of surplus nutrients. Bespoke mixtures to suit individual, specific requirements can also be arranged.

Seed untreated unless specified otherwise

## BUSTER COVER MIX

A mixture containing species with aggressive deep roots that will help with difficult compacted soils and producing huge amounts of biomass. During the winter months this mixture can benefit the soil by providing vast quantities of organic matter, prevent nutrients being lost and penetrate through compacted soils.

- 35% Buckwheat
- 15% Linseed
- 15% Daikon Radish
- 12% Crimson Clover
- 12% Fodder Radish
- 6% Gold of Pleasure
- 5% Phacelia

100%

Sowing rate 15 - 25kg/ha  
Pack size 25kg & 500kg

## N-SCENT COVER MIX

Two fast growing species that both have the ability to fix nitrogen and act as a distraction to plant pests and predators. Fenugreek gives off a distinctive aroma that deters flea beetle.

- 50% Egyptian Clover
- 50% Fenugreek

100%

Sowing rate 10kg/ha  
Pack size 25kg

## N-LIVEN COVER MIX

The primary role of this seed mix is nitrogen fixation to boost soil fertility between main crops especially two cereal crops. The mix maintains cover well into late winter and provides a range of rooting depth for enhanced soil aeration and drainage. The mix could also be grazed as a means of removal rather than chemical or cultivation methods.

- 60% Vetch
- 20% Crimson Clover
- 10% Linseed
- 10% Phacelia

100%

Sowing rate 15kg/ha  
Pack size 25kg

## N-HANCE COVER MIX

This mixture will benefit the soil by the use of species that absorb the leaching nutrients and has the added advantage of the useful nitrogen fixing winter vetch. It produces a huge quantity of organic matter and has the benefit of radish's large roots that can utilise nutrients from the deeper layers of soil.

- 60% Forage Rye
- 30% Vetch
- 7% Fodder Radish
- 3% White Mustard

100%

Sowing rate 35 - 50kg/ha  
Pack size 25kg & 500kg

## N-RICH COVER MIX

The vetch and rye complement each other to provide an excellent cover crop mixture for the winter. Vetches are fast growing and they have a very prolonged growing season, combined with excellent winter hardiness and have the advantage of being able to fix nitrogen at lower temperatures than other legumes. Forage rye is deep rooting which provides a good underground network for the plant to utilize most of the nitrogen left by the previous crop.

- 80% Forage Rye
- 20% Vetch

100%

Sowing rate 50 - 75kg/ha  
Pack size 25kg & 500kg

## N-TRAP COVER MIX

A combination of fast growing species that act as an alternative food source and distraction to pests that prey on brassica crops. The canopy cover has the potential to slow the progress of flea beetle whilst fixing and releasing nitrogen to companion oilseed rape crops. The cover crop will die back over winter for ease of management.

- 65% Buckwheat
- 35% Egyptian Clover

100%

Sowing rate 10kg/ha  
Pack size 25kg

## N-RETAIN COVER MIX

A balanced mixture that contains fast growing species which produce large amounts of biomass. The species used in the mixture offer a wide range of rooting depths some having a fibrous root system and others producing long tap roots. Both types of roots help to soak up and retain any residual nutrients which may have been left behind by the previous crop.

- 30% Vetch
- 15% Buckwheat
- 15% Crimson Clover
- 12% Fodder Radish
- 10% Daikon Radish
- 10% Egyptian Clover
- 5% White Mustard
- 3% Phacelia

100%

Sowing rate 15 - 25kg/ha  
Pack size 25kg & 500kg

## LIVING MULCH

This is based on a small leaved white clover that is sown to act as a living mulch into which main crops such as cereals can be sown.

Sowing rate 4kg/ha  
Pack size 25kg

## RESCUE MIX

- 50% Buckwheat
- 15% Fodder Radish
- 15% White Mustard
- 10% Gold of Pleasure
- 10% Brassica Carinata

100%

Sowing rate 12kg/ha  
Pack size 10kg

## BOOST MIX

- 70% Brassica Carinata
- 10% Hybrid Brassica
- 10% Fodder Radish
- 10% Brown Mustard

100%

Sowing rate 6kg/ha  
Pack size 10kg

## KWIK FIX

- 80% Fodder Radish
- 20% White Mustard

100%

Sowing rate 12 - 15kg/ha  
Pack size 10kg

## LATE COVER MIX

- 75% Forage Rape
- 14% White Mustard
- 11% Fodder Radish

100%

Sowing rate 12 - 15kg/ha  
Pack size 10kg



**DISCLAIMER** These tables are given in good faith and intended for general guidance only. Weather, local conditions and crop rotations must always be taken into account.

# Game Cover Selector

Crop	Organic Option	Page No.	Pack Size	Cover / Feed Crop		Nectar	Average Sowing Rate per Hectare		Sowing Date Guide	Utilisation Period	Duration of the Crop	Average Drill Depth cm	Average Row Width cm	Suggested Guide to Seedbed Fertiliser (kg) ha		
							Broadcast	Drill						N	P	K
<b>Game Cover Crops</b>																
Maize		27	40,000/ 50,000 seeds	✓	✓			Precision drill 111,150 - 123,500 seeds/ha	April - June	September - February	1 Season	6	75	80	85	205
<b>Brassicas</b>																
Kale		28	1kg & 5kg	✓				5 - 7.5kg 3 - 5kg	April - June	September - March	1 - 2yr	1 - 2	50	100	50	120
Surefire Kale Blend		28	2kg	✓				5 - 7.5kg 3 - 5kg	April - June	September - March	1 - 2yr	1 - 2	50	100	50	120
Jupiter Leafy Turnip		29	10kg & 25kg	✓				5 - 7.5kg 3 - 6kg	Spring / Early Autumn	Autumn / Early Winter	1 Season	1 - 2	Various	110	55	55
Brassica Carinata		29	5kg	✓				5 - 7.5kg 6kg	April - August	September - January	1 Season	1 - 2	Various	110	55	55
Forage Rape		29	10kg & 25kg	✓				10kg 6kg	May - end of September	July - December	1 Season	1 - 2.5	15 - 20	20	40	40
Spitfire Hybrid Brassica		29	5kg & 25kg	✓				10kg 6kg	May - end of September	July - December	1 Season	1 - 2.5	15 - 20	20	40	40
Zoom Brassica Mixture		29 & 36	5kg	✓				6 - 10kg 6kg	Spring / Autumn	September - March	1 Season	1 - 2	Various	110	55	55
<b>Milletts / Grasses</b>																
Sorghum - Intermediate & Dwarf		30	10kg	✓				20kg	May - June	September - February	1 Season	2.5 - 4	45 - 50	100	50	120
Over n' Under Sorghum Mixture		30	10kg	✓				20 - 25kg	May - June	September - February	1 Season	2.5 - 4	45 - 50	100	50	120
Milletts		31	10kg	✓	✓			12kg 12kg	April - June	September - December	1 Season	1 - 1.5	35-45	60	30	30
Canary Grass (Phalaris aquatica)		34	2.5kg	✓				6kg	April - June	All Year	5 Years+	1.5	70 - 90	55	28	28
Reed Canary Grass (Phalaris arundinacea)		34	2.5kg	✓				6kg	April - June	All Year	5 Years+	1.5	70 - 90	55	28	28



Crop	Organic Option	Page No.	Pack Size	Cover / Feed Crop		Nectar	Average Sowing Rate per Hectare		Sowing Date Guide	Utilisation Period	Duration of the Crop	Average Drill Depth cm	Average Row Width cm	Suggested Guide to Seedbed Fertiliser (kg) ha		
							Broadcast	Drill						N	P	K
<b>Game Cover Crops</b>																
Sunflowers		32	10kg & 25kg	✓	✓	✓		12kg	April - June	July - November	1 Season	4	75	Ensure adequate P but very little N		
Quinoa		32	2kg	✓	✓		5kg+	5kg	April - June	September - December	1 Season	1.5	45	100	50	120
Triticale	✓	32	25kg	✓	✓			125kg	Spring / Autumn	August - February	1 Season	2.5	12 - 16	125	0	0
Borage		32	5kg & 25kg	✓		✓	12kg+	12kg	April - June	Autumn	1 Season	1 - 2	15 - 20			
Gold of Pleasure (Camelina)	✓	33	5kg & 25kg	✓	✓		12kg+	12kg	April - May	September - December	1 Season	1	8 - 18	40	75	65
Phacelia	✓	33	2kg, 10kg & 25kg	✓		✓	7.5 - 10kg		April - August	July - October	1 Season	1 - 2	Various			
Buckwheat	✓	33	10kg & 25kg	✓	✓	✓	50kg+	50kg	April - May	August - December	1 Season	1 - 2.5	20 - 35	35	105	210
White Mustard	✓	33	10kg & 25kg	✓			12 - 17kg	6 - 12kg	Spring - Autumn	August - December	1 Season	1 - 2.5	20 - 35			
Brown Mustard		33	5kg & 25kg	✓			5 - 7.5kg	2.5 - 7.5kg	Spring - Autumn	Autumn / Spring	1 Season	1 - 2.5	20 - 35			
Fodder Radish	✓	33	10kg & 25kg	✓	✓	✓	8kg	6kg	Spring - Autumn	July - December	1 Season	1 - 2.5	25 - 30	40	15	20
Linseed		33	25kg	✓	✓	✓		60kg	April - May	September - February	1 Season	1 - 2	8 - 18	40	75	65
Perennial Chicory		34	5kg & 25kg	✓		✓	5kg+	5kg	Spring or Early Autumn	All Year	5yr+	1	15 - 20	100	50	120
Yellow Blossom Clover		34	2kg & 25kg	✓		✓	6kg+	6kg	April - June	All Year	1 - 2yr	0.5	75	30	0	0
<b>Game Cover Mixtures</b>																
Feed and Cover Mixture		10	20kg	✓	✓	✓		40kg	Spring	September - February	1 Season	1 - 2.5	12 - 16	30	75	75
Partridge Mixture		11	25kg	✓	✓			62kg	Spring	September - February	1 Season	1 - 2.5	12 - 16	30	75	75
Northern Shot		11	20kg	✓	✓	✓		50 - 60kg	Spring	September - February	2 Season	1 - 2.5	12 - 16	75	40	40
Northern Star Game Mixture		11	20kg	✓	✓	✓	50kg	50kg	Spring	September - February	1 Season	2.5 - 3	15	75	37	37
Overdrive		28	2.5kg	✓	✓		6kg+	6kg	April - June	September - February	1 - 2yr	2.5	45 - 50	100	50	120
General Purpose Rearing Pen Mixture		34	15kg	✓			32 - 37kg	32kg+	Spring / Autumn	All Year	5yr+	1	15 - 20			
Broadshot		35	10kg	✓	✓	✓	15kg	15kg	Spring	September - February	1 Season	1 - 2	15 - 25	80	40	96
Four Ten Mixture		35	14kg	✓	✓			35kg	Spring	September - February	1 Season	6	75	185	90	220
Sundown Mixture		35	13kg	✓	✓	✓		32kg	April - June	September - February	1 Season	5 - 6	75 - 100	60	60	
Traditional Game Cover Mixture		35	10kg	✓	✓	✓	25kg	25kg	April - June	September - February	1 Season	B/C	B/C	80	40	96
Decoy Game Mixture		35	10kg	✓	✓	✓	20kg	20kg	Spring	September - February	1 Season	1 - 2	15 - 25	80	40	96
Boost Mixture		19 & 36	10kg	✓			6kg+	6kg	June - September	September - February	1 Season	1 - 2	45 - 50	100	50	50
Late Cover Mixture		19 & 36	10kg	✓			15kg+	12kg	Spring / Autumn	September - February	1 Season	1 - 2	20 - 35	55	28	28
Kwik Fix		19 & 36	10kg	✓			15kg+	12kg	July - End of September	September - December	1 Season	1 - 2	40	Lodging can occur with excess fertiliser		
Rescue Mixture		19 & 36	10kg	✓	✓		12kg+	12kg	June - September	September - December	1 Season	1 - 2	45 - 50	100	50	50



# Establishing Game Cover Crops

Game cover crops will only reach their full potential if they are well managed right from the start. A successfully managed shoot is both profitable and rewarding to landowners and the local community, as it contributes positively to the countryside and the overall environment. It is hoped the following notes will help and guide you to the successful establishment of game cover crops. Any regional or particular soil conditions have not been taken into consideration as it is preferable to take advantage of local knowledge. If you would like more detailed information please contact your local seed specialist, who will be able to give advice for your own particular farm/situation.



DLF Research Trials

## CROP ROTATION

Rotations are essential to help reduce soil-borne diseases such as club root in brassicas. A rotational system will also help to improve soil fertility and structure as each crop can benefit the soil in different ways, each requiring different trace elements. Crop rotation is essential where weeds and/or disease have become a persistent problem.

## CULTIVATIONS

A well prepared seed bed is essential for crop health and development, as a rapidly growing game cover crop has more chance of resisting pest attack. Generally, ploughing and rapid consolidation to conserve moisture is the ideal start for these crops. Ensure the seed bed is fine and firm to help reduce the risk of slug activity.

## SOWING

Where possible we recommend drilling game cover crops. This ensures accurate seed depth and row width and will provide maximum seed to soil contact that will encourage a speedy establishment. Sowing at the correct row width will also improve bird holding and driving capability. Each growing season is completely different, but try not to sow too early to ensure the soil temperature is warm enough to encourage a quick successful germination.

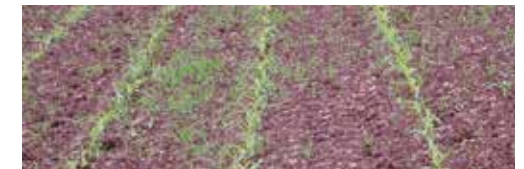


## SOIL TESTS & FERTILISER

Soil testing is essential to determine the soil pH and fertility of the soil, which can then be managed accordingly to maximize its potential. Farmyard manure is an excellent way of improving soil structure and adding fertility. Fertiliser will also be required at the early stages of establishment to maximize the output of your game cover crop. Lime may be required for some acid soils to balance the soil pH.

## WEED CONTROL

The stale seed bed technique is a well proven weed control system and allows early control of weeds. The technique involves spraying, ploughing and cultivating to encourage weed seeds to germinate in a first flush, then re-spraying; this can be repeated as often as necessary to help achieve a clean seed bed. This technique is very useful where mixtures are grown and no herbicide can be recommended. (For chemical weed control see tables on pages 24 and 25).





# Forage Grass Mixtures

Our range of forage grass seed mixtures is designed to provide the grower with high quality forage by utilising today's modern and extensively trialled varieties. The following mixtures offer short and long term options for both cutting and grazing systems and whilst we feel that these formulations cover most seeding requirements, we do offer a bespoke special mixture service and would be pleased to advise on your requirements.

## HAYMAX SHORT TERM



Quality hay or haylage from Italian Ryegrass Diploid varieties. This mixture will provide high quality forage required for the Equine fodder market.

Cutting (2 years)

45% Fox	Italian Ryegrass
35% Alamo	Italian Ryegrass
20% Sendero	Italian Ryegrass

100%

Pack size 20kg

Sowing rate 13 - 15kg/acre (32 - 37kg/ha)

- Superb for hay or haylage
- Excellent disease resistance
- Will provide at least two heavy crops per annum
- Very responsive to fertiliser inputs

## HAYMAX FULL TERM



Based only on diploid species and Timothy, providing high quality hay or haylage. A longer term mixture that will produce a finer hay than the HayMax short term mixture.

Cutting (3 - 5 years)

30% Boyne	Intermediate Perennial Ryegrass
24% Genesis	Early Perennial Ryegrass
20% Agaska	Intermediate Perennial Ryegrass
14% Cavendish	Late Perennial Ryegrass
12% Winnetou	Timothy

100%

Pack size 20kg

Sowing rate 13 - 15kg/acre (32 - 37kg/ha)

- 5 years duration for hay and haylage
- Timothy inclusion makes this very palatable
- Good disease resistance
- Diploids only for even conditioning

## HORSEMAX Paddock



Long term horse grazing with an option to produce a quality hay crop. HorseMax paddock is designed using diploid perennial ryegrasses, timothy and creeping red fescue. Sward density is a key consideration as both grazing and winter feed are often produced from the same area. Timothy is much favoured by horses and in particular gives hay a sweet smell and is very palatable. Creeping red fescue is key to keeping the sward together and because of its growth habit quickly repairs the turf when damaged by hooves.

Cutting & Grazing (5 years plus)

30% Calvano 1	Intermediate Perennial Ryegrass
30% Cavendish	Late Perennial Ryegrass
15% Boyne	Intermediate Perennial Ryegrass
15% Maxima	Creeping Red Fescue
10% Winnetou	Timothy

100%

Pack size 10kg

Sowing rate 15 - 20kg/acre (37 - 50kg/ha)

- Very good sward density
- Suitable for a hay crop if desired
- Hard wearing sward
- No tetraploids as high sugar grass can lead to laminitis
- An extremely versatile equine mixture



# Forage Grass Mixtures



## VERSAMAX ALL STOCK



A versatile mixture to cut or graze. This ley will withstand heavy grazing by all classes of stock, particularly beef cattle and sheep. For ensiling it will produce good yields and quality.

Cutting & Grazing (5 years plus)

22%	Nifty	Intermediate Perennial Ryegrass
24%	Nolwen	Intermediate Perennial Ryegrass (T)
22%	Cavendish	Late Perennial Ryegrass
22%	Hopi	Late Perennial Ryegrass (T)
4%	Winnetou	Timothy
4%	Dual Purpose Clover Blend	

100%

Pack size 20kg

Sowing rate 13 - 15kg/acre (32 - 37kg/ha)

- Good early bite for grazing animals
- Timothy tolerates cold wet soils
- Capable of producing a quality cut of silage
- 44% late perennial ensures a leafy, palatable sward
- 46% inclusion of DLF FIBER ENERGY™ varieties means top quality digestibility and production from forage

A NO CLOVER OPTION IS AVAILABLE

## CUTMAX EXTRA CUT



An intensive cutting mixture for high yields of palatable forage for up to 3 years.

Cutting (2 - 3 year)

22%	Hunter	Italian Ryegrass (T)
20%	Aston Crusader	Hybrid Ryegrass (T)
20%	Fox	Italian Ryegrass
20%	Perseus	Ryegrass PLUS™
18%	Tetragraze	Hybrid Ryegrass (T)

100%

Pack size 20kg

Sowing rate 13 - 15kg/acre (32 - 37kg/ha)

Approximate date of 67D 16th May

- Benefits from Ryegrass PLUS™ persistency and quality
- Excellent forage quality Good regrowth after cutting
- Responds well to fertiliser
- High in sugar – essential for rapid fermentation 1
- 2% Red Clover option available

## MEADOWMAX



A traditional ley of non-aggressive grass species. Suited to more extensive farming systems.

Cutting & Grazing (Long Term)

26%	Laura	Meadow Fescue
20%	Maxima	Creeping Red Fescue
19%	Winnetou	Timothy
17%	Donata	Cocksfoot
17%	Fojtan	Tall Fescue PLUS™
1%	Crested Dogstail	

100%

Pack size 20kg

Sowing rate 13 - 15kg/acre (32 - 37kg/ha)

- Can be grazed or cut for hay or haylage
- Suited to extensive livestock management systems
- Tolerant of wet and cold conditions
- A very dense, hard wearing sward
- Will tolerate low fertiliser inputs and lower pH soils

## OVERSEEDING MIXTURE GRASSMAX™ PRONITRO®



An overseeding mixture with Pronitro® for fields that would benefit extra nitrogen for seedling establishment.

30%	Diwan	Intermediate Perennial Ryegrass (T)
30%	Hopi	Late Perennial Ryegrass (T)
30%	Thegn	Late Perennial Ryegrass (T)
10%	Dublin	Large White Clover

100%

Pack size 20kg

Sowing rate 10 - 14kg/acre (25 - 34kg/ha)

- Sow from 10kg/acre
- Feeds the seed and not the surrounding grass giving upto 34% more viable plants and upto 30% increase in root growth
- Can increase forage yield and therefore benefit from more meat and milk production
- Targeted nutrient application which can reduce losses to the environment by up to 50%





# Amenity Grass Mixtures

The following pages offer our seed mixtures for amenity use, covering all aspects of the market, ranging from bowling greens and football pitches to lawns, reclamation areas and wild flower meadows. Varieties are chosen for their wear tolerance, shoot density and fineness of leaf, to produce outstanding swards. As with our forage seeds, special mixtures can be created should they be required.

## TEES, FAIRWAYS & HIGH QUALITY FINE LAWNS (WITHOUT RYEGRASS)



### PM20 FINETURF

A mixture of only the best species ensures the production of a truly first class fine turf sward. An important pre-requisite is a clean seed bed free from coarse species so that the full benefits of the short fine varieties can be seen.

60% Benji	Strong Creeping Red Fescue
20% Smirna	Slender Creeping Red Fescue
20% Wagner	Chewings Fescue

100%

Sowing rate 35 - 50g/m<sup>2</sup>

Overseeding 15 - 25g/m<sup>2</sup>

Mowing height Down to 10mm

**GroMax** treated

## HIGH QUALITY HARD WEARING LAWN PM50 QUALITY LAWN



An excellent mixture, fine in appearance and hard wearing with excellent colour. The improved new cultivars ensure, a shade tolerant, low maintenance turf, with good disease resistance, keeping future maintenance costs to the minimum. A very successful mixture for both private and local authority use, on housing and industrial developments where a high quality and durable turf is called for.

30% Sergei	Strong Creeping Red Fescue
20% Dickens	Perennial Ryegrass
15% Chardin	Perennial Ryegrass
10% Smirna	Slender Creeping Red Fescue
10% Tetragame	4turf® Perennial Ryegrass (T)
10% Wagner	Chewings Fescue
5% Tetradry	Perennial Ryegrass

100%

Sowing rate 35 - 50g/m<sup>2</sup>

Overseeding 15 - 25g/m<sup>2</sup>

Mowing height Down to 10mm

**GroMax** treated

**4turf**<sup>®</sup>  
by DLF

## HARD WEARING LAWNS (WITH RYEGRASS) PM51 GREENSCAPE

A hard wearing mixture that will establish rapidly. Ideal for general purpose landscaping & lawns. Our unique 4turf® Tetraploid ryegrass delivers fast establishment, improved colour, increased drought tolerance and incredible disease resistance. Improving performance and reducing management costs. Contains only STRI UK listed cultivars.

40% Double	4turf® Perennial Ryegrass (T)
40% Maxima	Strong Creeping Red Fescue
20% Esquire	Strong Creeping Red Fescue

100%

Sowing rate 35 - 50g/m<sup>2</sup>

Overseeding 25 - 50g/m<sup>2</sup>

Mowing height Down to 13mm

**GroMax** treated

**4turf**<sup>®</sup>  
by DLF



# Amenity Grass Mixtures

## SHADED CONDITIONS (WITHOUT RYEGRASS)

### PM60 GREENSHADE

A top quality mixture designed to produce an excellent wear tolerant turf under shaded conditions. Sabrena 1 rough stalked meadow grass germinates rapidly, providing an exceptionally fine, dense, green growth year round. To ensure successful results, do not mow too closely and feed regularly.

40%	Sergei	Strong Creeping Red Fescue
30%	Wagner	Chewings Fescue
20%	Samanta	Slender Creeping Red Fescue
10%	Sabrena 1	Rough Stalked Meadow Grass

100%

Sowing rate 35 - 50g/m<sup>2</sup>  
Overseeding 25 - 50g/m<sup>2</sup>  
Mowing height Down to 25mm

**GroMax** treated

## SPORTS FIELDS, TEES & FAIRWAYS & HARD WEARING LANDSCAPE TURF



### PM70 RECREATION

A versatile mixture that will produce a very hard wearing sward with a high shoot density suitable for winter and summer games. The introduction of unique new 4turf<sup>®</sup> tetraploid ryegrass delivers the fastest possible establishment, especially important for the rapid renovation of worn turf, plus improved disease resistance and improved drought tolerance thanks to the deeper root system. The perfect mixture to bring your venue back to life following that summer tournament or festival.

30%	Sergei	Strong Creeping Red Fescue
25%	Double	4turf <sup>®</sup> Perennial Ryegrass (T)
25%	Esquire	Perennial Ryegrass
10%	Dickens	Perennial Ryegrass
10%	Tetragame	4turf <sup>®</sup> Perennial Ryegrass (T)

100%

Sowing rate 35 - 50/m<sup>2</sup>  
Overseeding 25 - 50g/m<sup>2</sup>  
Mowing height Down to 12mm

**GroMax** treated

**4turf<sup>®</sup>**  
by DLF

## LOW MAINTENANCE / POOR SOILS / EMBANKMENTS / GOLF ROUGH



### PM25 GRO-SLOW

This is a reduced maintenance mix that is naturally low growing & attractive, using fine grasses that are very tolerant of dry, infertile conditions, reducing the need for additional applications of water and fertiliser. The addition of Crested dogstail to the mix ensures a quick germination and green up of the sward.

40%	Maxima	Strong Creeping Red Fescue
20%	Bornito	Hard Fescue
15%	Double	4turf <sup>®</sup> Perennial Ryegrass (T)
10%	Samanta	Slender Creeping Red Fescue
10%		Crested Dogstail
5%	Highland	Browntop Bent

100%

Sowing rate 25 - 50g/m<sup>2</sup>, 4g/m<sup>2</sup> when sowing with wild flora  
Overseeding 15 - 25g/m<sup>2</sup>  
Mowing height 20mm or twice/year to approx 100mm  
Unmown height approx 150 - 200mm  
(excluding flower heads) depending on fertility

**GroMax** treated

**4turf<sup>®</sup>**  
by DLF

## LOW MAINTENANCE LANDSCAPE WITH WILD FLORA

### PRO FLORA 8 LEGACY OLD ENGLISH COUNTRY MEADOW

This mix contains a wide range of wild flowers, formulated to meet a demand for creating a floristically diverse meadow.

#### WILD FLOWERS 1 Part 20%

15%	Selfheal
12%	Meadow Buttercup
12%	Ox-eye Daisy
12%	White Campion
11%	Black Knapweed
11%	Red Campion
8%	Yarrow
6%	Black Medick
5%	Ribwort Plantain
5%	Salad Burnet
1%	Birdsfoot Trefoil
1%	Common Vetch
1%	Musk Mallow

100%

#### GRASSES 4 Parts 80%

25%	Red Fescue
20%	Chewings Fescue
20%	Crested Dogstail
20%	Hard Fescue
10%	Smooth Stalked Meadow Grass
5%	Browntop Bent

100%

Pack size 1kg  
Sowing rate 5g/m<sup>2</sup> 50kg/ha  
Mowing height Once a year post flowering to no lower than 100mm. Ask for our management guidelines.



# Pests & Diseases in Brassicas & Maize

## Pests

### FLEA BEETLE MANAGEMENT

Brassicas (kale, rape, turnips, texsel greens, jonty) and linseed are vulnerable in hot weather conditions to attacks of flea beetle. Chemical insecticide treatment will be required immediately if 'shot holes' are seen in the young leaves. Increasing soil fertility and structure helps speed the crop through critical growth stages to minimize attack.



Flea Beetle

### DIABROTICA BEETLE

(Western Corn Rootworm)



### WIREWORM



### FRIT FLY

### EUROPEAN CORN BORER



### OTHER PESTS

Game cover is often sown in the spring near to woods and trees and therefore is very attractive to crows, pigeons, slugs, rabbits, hares, deer, badgers and caterpillars. Game cover crops need to be checked regularly and relevant action needs to be taken quickly to prevent further attacks from these pests.

## Diseases in Maize

### MAIZE SMUT

(Ustilago maydis)



### EYE SPOT

(Kabatiella zeae)



### RUST

(Puccinia sorghi)

### STALK ROT

(Fusarium spp)

## Diseases in Brassicas

### CLUB ROOT

(Plasmodiophora brassicae)

Club Root is a serious and widespread disease of brassica plants. It is very difficult to control and once present in the soil, is virtually impossible to eradicate. Roots affected by club root are swollen and distorted thus reducing the flow of water and nutrients to the plant; leaves become yellow and wilt causing severe stunting of growth. Sowing crops in the autumn when the soil is cooler reduces the risk of attack. Increasing soil pH through liming, ensuring good drainage and maintaining long rotations between brassica crops (at least four years) are the best methods to manage the disease.

See our club root tolerant species:

Goldeneye Kale (page 28)

Daikon Radish (page 18)

Fodder Radish (page 18 & 33)











# Forage Maize

**DLF** have been strong players in the forage maize market for many years. Our expertise in the grass seed market complements the maize portfolio when discussing total forage needs with our customers.

We are not breeders of maize so we work with breeders, which can have a distinct advantage when securing a well-rounded portfolio to suit all maize requirements.

The biogas sector for maize is growing and our varieties for this sector have performed extremely well this season and we already have some repeat orders for next season (BIOGAS page 15).

Comprehensive technical sheets are available for all forage maize varieties available from DLF.

## Very Early

### PEREZ

- Gain higher yields faster
- Proven consistent performance
- Suitable for anaerobic digestion



## Early Maincrop

### MARCAMO

- Fills the clamp!
- Very high yields of dry matter and energy
- Suitable for anaerobic digestion



## Very Early

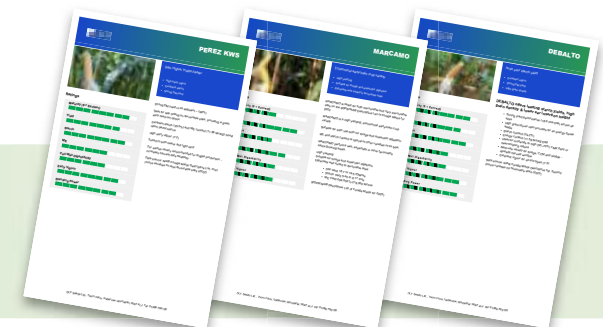
### DEBALTO

- Push your starch yield... keep your harvest on track!
- Excellent vigour combined with strong dry matter yield and high grain quality



Individual technical sheets available for each variety.

These can be found at [www.dlf.co.uk/maize/dlf-uk/maize/forage-maize](http://www.dlf.co.uk/maize/dlf-uk/maize/forage-maize)





# Game Maize



**Game Maize** is still one of the most popular crops used for cover and feed. Nearly all maize varieties used for game cover have at some stage been commercial forage or grain varieties. As these varieties are superseded by newer hybrids, stocks of those being replaced diminish and we carefully select the most suitable of these for our game cover purposes.



**N.B.** Height of maize may vary depending on seasonal and management variations. The later the sowing date the later the maturity of the maize.

## RAPID FIRE



Rapid Fire is still our biggest selling brand of maize. Varieties are selected for their good standing ability, early vigour and a low cob carriage.

Pack size 50,000 seeds

Treatment Fungicide & Bird Repellent treated\*



## LATE SHOT



Late Shot is selected for very late maturity and good standing ability. It produces an immature cob that only develops to the 'bright white' stage under normal UK autumn and winter conditions. Due to the late cob formation it tends to be of less interest to rats and badgers that can decimate more mature cobbled varieties through the shooting season.

Pack size 50,000 seeds

Treatment Fungicide & Bird Repellent treated\*



\* Seed treatment may change subject to availability at time of order.



# Kale

**Kale is still one of the most popular cover crops used today. The main advantage of kale is that it will provide cover for the whole shooting season. Pheasants particularly like the combination of a good canopy and bare ground which allows easy movement in a relatively dry environment.**

Kale requires soil with a pH of around 6.5, so it is very important to conduct soil analysis prior to sowing. Kale is a very hungry crop and benefits from the application of farmyard manure/slurry prior to sowing. Care should be taken with continuous kale as the ground can become “brassica sick”; club root (finger and toe) will inhibit or prevent the growth of brassica crops but this can be prevented by growing kale and another crop such as maize in adjacent strips and alternating the strips.

Kale is frequently grown in conjunction with other crops such as quinoa and yellow blossom clover. Selection of any such mixture should take into account the required length of time for which the crop is grown and the potential weed control that may be required.

Flea beetle damage may occur in the early stages of establishment, regular monitoring of the crop is required as action may be needed in the event of heavy attack.

## GOLDENEYE

Club Root Tolerant



Goldeneye is a giant type kale especially bred for the game cover market, selected for the optimum combination of height and leaf production. It has a leafy top, strong stem, good winter hardiness and good field tolerance of disease, making it the ideal choice for game cover usage. Goldeneye achieved a higher vigour score than Caledonian kale and better club root tolerance in a trial conducted at the Scottish Agricultural College in Aberdeen.

**Sowing rate 3 - 7.5kg/ha**  
**Pack size 1kg & 5kg**  
**Treatment Untreated**

## THOUSAND HEAD



A reliable and consistent variety. It's a medium height variety with good winter hardiness providing excellent yields.

**Sowing rate 3 - 7.5kg/ha**  
**Pack size 1kg & 5kg**  
**Treatment Untreated**

## ASTERA



A very productive and leafy variety, characterised by its high yields. It is a very winter hardy variety producing high crude protein yields.

**Sowing rate 3 - 7.5kg/ha**  
**Pack size 1kg & 5kg**  
**Treatment Untreated**

## GRÜNER ANGELITER



A very tall variety with good winter hardiness. Grüner Angeliter is proving to be a significant improvement in the game cover sector and has performed extremely well even in difficult growing conditions. It has a high leaf canopy and a thick strong stem with a branching, umbrella-shaped canopy giving plenty of space for the birds to move about underneath.

**Sowing rate 3 - 7.5kg/ha**  
**Pack size 1kg & 5kg**  
**Treatment Untreated**



## SUREFIRE KALE BLEND



A combination of three excellent game cover kale varieties, to provide a tall varied canopy. This blend will give superb cover over an extended period and will give second year growth with various bolting times. The flowering kale attracts insects and provides shed seed, all helping to draw both game and song birds.

40% Goldeneye  
30% Grüner Angeliter  
30% Proteor

100%

**Sowing rate 3 - 7.5kg/ha**  
**Pack size 2kg**  
**Treatment Untreated**

## OVERDRIVE



A superb combination of winter hardy cover provided by the kale and high quality feed provided by the quinoa. This mixture is excellent for holding birds.

50% Quinoa  
50% Goldeneye Kale

100%

**Sowing rate 6kg/ha**  
**Pack size 2.5kg**  
**Treatment Untreated**



# Brassicas



## ZOOM BRASSICA MIXTURE

Zoom is a blend of Winfred hybrid brassica and forage rape. This is a very vigorous and quick growing mixture which is ideal for replacing failed crops or patching spring sown crops. Good seedling vigour gives a reliable establishment of a high leaf to stem ratio crop using carefully selected varieties with good disease and bolting resistance.

**Sowing rate 6 – 10kg/ha**  
**Pack size 5kg**  
**Treatment Untreated**

## FORAGE RAPE

Forage Rape is particularly useful in that it can be used as a rescue or catch crop, continuing until the New Year when it flowers and goes to seed. A well grown crop with adequate spacing between rows will provide good cover for holding, driving and feeding. It is largely unaffected by frost and wet weather.

**Sowing rate 6 - 10kg/ha**  
**Pack size 10kg & 25kg**  
**Treatment Untreated**

## SPITFIRE HYBRID FORAGE BRASSICA

Spitfire is a modern hybrid rape created by crossing rape with kale and is a good companion to use with other fast establishing brassicas. It is a rapid growing brassica that can be used as a rescue or catch crop that will provide good cover for holding, driving and feeding game birds. It is a medium-tall variety with excellent aphid tolerance and rapid establishment to maturity.

**Sowing rate 6 - 10kg/ha**  
**Pack size 5kg and 25kg**  
**Treatment Untreated**

## BRASSICA CARINATA

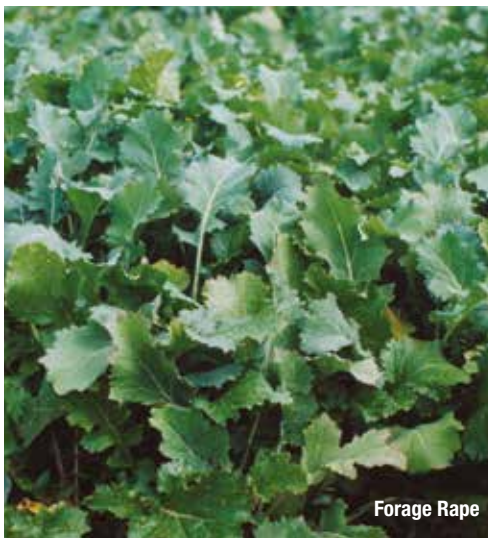
Texsel Greens are a fast growing, shiny leaved brassica developed from Ethiopian mustard. They are easy to establish and provide frost hardy cover, producing a broken canopy which is great for flushing birds. Their rapid growth is ideal for suppressing weeds and they are often used as a patching crop when spring crops have failed. Also see Boost mixture on pages 19 & 36.

**Sowing rate 5 - 7.5kg/ha**  
**Pack size 5kg**  
**Treatment Untreated**

## JUPITER LEAFY TURNIP

Jupiter is a very leafy turnip that is late flowering, covers the soil very fast and is winter hardy. This variety can be sown in spring or autumn and for forage production these leafy turnips can be grazed after just 6-8 weeks.

**Sowing rate 5 - 7.5kg/ha**  
**Pack size 10kg & 25kg**  
**Treatment Untreated**



Forage Rape



Spitfire



Texsel Greens



# Sorghums

**Sorghum** is a semi-tropical, non-cob producing, maize-like plant which will provide cover throughout the shooting season. It thrives best in warm, sunny growing conditions and therefore is suited to the more southerly regions of the UK. Sorghum is a very slow establishing plant that does not begin to flourish until late July.

## DWARF SORGHUM

Dwarf Sorghum has a short, sturdy, broad-leaved stem and a substantial seed-head, providing birds with warm cover throughout the shooting season. Often sown as a companion to maize with the bulkier, shorter sorghum plants giving protection to the birds below the taller growing maize plants (see Four Ten on p35).

Average height 1 - 1.25m under favourable conditions.

Sowing rate 20kg/ha  
Pack size 10kg  
Treatment Untreated



Dwarf Sorghum

## INTERMEDIATE SORGHUM

Intermediate Sorghum is useful as a windbreak around other game cover crops, providing pheasant and partridge with protection from overhead predators. Earlier sown crops have the potential to produce large attractive seed-head with excellent standing ability.

Average height up 1.25m under favourable conditions.

Sowing rate 20kg/ha  
Pack size 10kg  
Treatment Untreated



Intermediate Sorghum

## OVER N' UNDER SORGHUM MIXTURE

A combination of two types of sorghum. The shorter sorghum gives the birds cover and protection from predators whilst the crop's excellent standing ability acts as an effective windbreak.

90% Dwarf Sorghum  
10% Piper Sorghum Sudangrass  
100%

Sowing rate 20 - 25kg/ha  
Pack size 10kg  
Treatment Untreated



Over n' Under Sorghum Mixture



# Millets

Red Millet



White & Red Millet



Millgame Millet Mix



White Millet

## WHITE MILLET



White Millet is best suited to more southerly regions of the UK as it is a sunshine loving plant and is not frost hardy. It provides warmth, shelter and feed for game birds and will attract wild seed-eating birds such as finches. White millet is particularly attractive to grey and red-legged partridges and if sown alone can be used for early holding cover. When required to last longer into the season it performs well if sown with maize, but will combine well with a variety of other game cover crops.

**Sowing rate 12kg/ha**  
**Pack size 10kg**  
**Treatment Untreated**



White Millet

## RED MILLET



Red Millet is earlier maturing than white and does not stand well when sown alone. However it is a good partner to use with white millet as it extends the feeding period (see Millgame Millet Mix). As with other millets, it is susceptible to frost.

**Sowing rate 12kg/ha**  
**Pack size 10kg**  
**Treatment Untreated**

## JAPANESE REED MILLET



Japanese Reed Millet is a stronger plant than other members of the millet family and is more winter hardy. When mixed with white and red millet it provides an excellent cover and feed crop (see Ambush Millet Mix).

**Sowing rate 12kg/ha**  
**Pack size 10kg**  
**Treatment Untreated**



Japanesse Reed Millet

## AMBUSH MILLET MIX



Ambush Millet Mix is a combination of white, red and Japanese reed millet. The reed millet being a stronger plant and more winter hardy provides cover while the white and red millet produces plentiful seed to hold the birds in the cover. It is an ideal mixture for use as a wind-proof belt on the outside of a block of maize or as a flushing point at the end of maize.

40% White Millet  
40% Red Millet  
20% Japanese Reed Millet

**100%**  
**Sowing rate 12kg/ha**  
**Pack size 10kg**  
**Treatment Untreated**



Millgame Millet Mix

## MILLGAME MILLET MIX



Millgame Millet Mix uses both red and white millet and is useful as the red matures earlier than the white, therefore extending the feeding period. This mixture can produce huge amounts of high protein feed per acre and when combined with maize creates an excellent cover and feed crop.

50% Red Millet  
50% White Millet

**100%**  
**Sowing rate 12kg/ha**  
**Pack size 10kg**  
**Treatment Untreated**



# Game Cover Crops

**Sunflowers** are a colourful sight and are of huge benefit to wildlife. Sunflowers provide highly nutritious seed of a high oil content which is loved by all game and song birds and the nectar is of great importance to bees and other insects.

In most situations sunflowers are grown in conjunction with many other game crops such as game maize or kale, either in mixtures or in adjacent blocks. The young seedlings are very vulnerable to spring slug attack and to wireworm in ground that has previously been in grass, so a close eye must be kept on the newly planted crop. Cambridge rolling following drilling into a good seed bed will help to protect against rook damage.

## SUNFLOWER



A variety with good standing ability. Large attractive flowers, with high yield potential. Best 'swiped down' to enable game birds to reach the nutritious seeds. Can be drilled with Maize to brighten up your crop.

**Sowing rate** 12kg/ha  
**Pack size** 10kg & 25kg  
**Treatment** Untreated



Sunflower

## TRITICALE



A wheat/rye hybrid cereal providing good cover and feed in marginal low fertility areas where it will thrive with little input. Useful in situations where maize and millet are not options and where brassica sickness is a problem. Further important advantages are its ability to withstand rabbit attack, winter hardiness and good disease resistance. When sowing in the spring, a true spring type must be used which does not require a period of vernalisation, otherwise the plant will not produce grain.

**Sowing rate** 125kg/ha  
**Pack size** 25kg & 500kg  
**Treatment** Untreated



Quinoa

## BORAGE



Borage, also known as starflower, is a quick growing annual herb, to a height of 2-3 feet with bright blue flowers; there is also a white flowered variation. The crop was traditionally grown for culinary and medicinal uses, although the crop is commercially grown today for its oil content. Borage's star shaped flower attracts bees all summer long. Borage is a self seeding plant and likely to reseed itself for many years to come.

**Sowing rate** 12kg/ha  
**Pack size** 5kg & 25kg  
**Treatment** Untreated

## QUINOA



Quinoa is capable of producing a plentiful amount of seed and therefore is a popular choice of crop for holding partridge and pheasant. Many species of seed-eating song-birds are also attracted to the crop. Commonly grown with kale, quinoa provides cover and feed until it begins to collapse in the first frosts with the kale providing more permanent cover.

**Sowing rate** 5kg/ha  
**Pack size** 2kg & 25kg  
**Treatment** Untreated





Phacelia



White Mustard



Brown Mustard



Buckwheat

# Game Cover Crops

## PHACELIA



A prolific seeder, very fast to establish and a good weed suppressant. It produces a mass of sweet smelling purple flowers providing a good source of nectar, beneficial to a large variety of insects. It is not winter hardy and therefore for game cover it is best sown as part of a mixture. Phacelia is likely to set seed and reseed itself for many years to come.

- Sowing rate 7.5 - 10kg/ha
- Pack size 2kg, 10kg & 25kg
- Treatment Untreated
- Organic seed available in 25kg packs (Limited)

## BUCKWHEAT



A rapidly growing short term crop highly attractive to pheasants, partridge and deer both as cover and feed. The large amount of nectar produced attracts bees and other beneficial insects which in turn provide added interest for game birds. It is a useful component to add to mixtures due to its bulkiness and its ability to continue to provide holding cover and feed after the first frosts when the crop has fallen. Buckwheat thrives in sunny rather than shaded areas.

- Sowing rate 50kg/ha
- Pack size 10kg & 20kg
- Treatment Untreated
- Organic seed available in 25kg packs (Limited)

## BROWN MUSTARD



A fast growing cover crop easy to establish 50 - 70 day crop that can be sown between April and September. Unlike white mustard, it is winter hardy. It will improve the health of the soil by increasing organic matter and acts as an excellent weed suppressant. It is also especially useful as over-wintering green cover after maize, potatoes and sugar beet crops, reducing soil erosion, fertiliser leaching and water run-off.

- Sowing rate 5 - 7.5kg/ha
- Pack size 5kg & 25kg
- Treatment Untreated

## WHITE MUSTARD



A relatively inexpensive and highly versatile cover crop either sown alone or as a companion to other species. It is ideal for early cover and although killed off by frost, the fallen woody stems will create shelter for the birds below. This is especially useful when sown with seed producing species which alone would provide no cover. Popular as a green manure crop (see green manure section page 16 - 19).

- Sowing rate 6 - 17kg/ha
- Pack size 10kg & 25kg
- Treatment Untreated
- Organic seed available in 25kg packs

## FODDER RADISH



(Oil Radish)

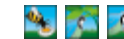
A fast growing cover crop, its prime usefulness being where brassica sickness is a problem due to its immunity to the disease. Other qualities are its speed of establishment which aids weed suppression and its use as a green manure crop. It is useful as a catch crop in northern regions if sown in July as it will be ready to provide cover within six to eight weeks, just as birds are losing cover from the cereals being combined. Due to its fast growth it is valuable as a replacement for failed crops, and will continue to provide cover right through the season. In addition, it holds its seed in pods which shed in late winter/early spring, thus providing feed during that all important 'hungry gap'.

- Sowing rate 6 - 8kg/ha
- Pack size 10kg & 25kg
- Treatment Untreated
- Organic seed available in 25kg packs (Limited)



Fodder Radish

## LINSEED



Traditionally grown for its oil, linseed has become popular in recent years as game cover and is particularly attractive to partridge. It is an easy to grow crop and is tolerant of many soil types, performing well on thinner soils e.g. Cotswold Brash. Although not frost hardy it will continue to provide cover and interest well into the winter especially if sown as part of a mixture. It is also another option where brassica sickness has been a problem.

- Sowing rate 60kg/ha
- Pack size 25kg
- Treatment Untreated

## GOLD OF PLEASURE - CAMELINA



Another crop well suited to poorer and nutrient deficient soils. It is a fast maturing, free-branching plant producing a seed very attractive to birds, especially partridge. A useful mixture for exposed areas is produced by combining gold of pleasure with triticale, barley and linseed (see Partridge mix page 11).

- Sowing rate 12kg/ha
- Pack size 5kg & 25kg
- Treatment Untreated
- Organic seed available in 25kg packs (Limited)



# Game Cover Crops

Reed Canary Grass & Chicory

## LONGER TERM CROPS

Perennial game cover crops provide valuable year round habitat for game and farmland wildlife. They help reduce workload during busy periods and reduce establishment costs.



Perennial Chicory

### CANARY GRASS

(*Phalaris aquatica*)



Canary Grass provides excellent medium to long term nesting cover for pheasant and partridge and can be used to both hold and drive birds. It is useful in areas where annual planting is not an option, either because it is uneconomic or too difficult and is a good choice to use between tree rows in newly established woods. Care must be taken to drill in wide enough rows to prevent the canary grass becoming too dense and therefore impassable for the birds. Annual management should be undertaken to keep the rows clear and topping is beneficial if the grass becomes too tall, with the debris being removed.

**Sowing rate 6kg/ha**

**Pack size 2.5kg**

**Treatment Untreated (Limited)**

### YELLOW BLOSSOM CLOVER



A biennial plant which can persist for several years due to its self-regenerating properties. Owing to its sweet smell and copious production of nectar it is highly attractive to insects, which in turn attract game birds and wildlife. Sowing with kale will help to provide cover in the first year, with the tall, woody-stemmed clover taking over in the second year. Yellow Blossom Clover can thrive in the poorest of soils and being leguminous and deep rooting it is invaluable for improving soil structure and fertility.

**Sowing rate 6kg/ha**

**Pack size 2kg**

**Treatment Untreated**

### REED CANARY GRASS

(*Phalaris arundinacea*)



Reed Canary Grass is similar to *Phalaris aquatica* but is more suitable for use in exposed northern regions as it is a much hardier plant and will tolerate a wide range of soil types. It not only offers nesting and cover to pheasants but also provides wild birds with nesting sites. The crop is purely for cover and does not provide feed so bare patches may be left unplanted or later cut out to provide areas for artificial feeding. As with *Phalaris aquatica* drilling in wide rows is necessary rather than broadcasting or the crop will become too dense. Annual management should be undertaken to keep the rows clear. Topping is beneficial if it becomes too tall, with the debris removed.

**Sowing rate 6kg/ha**

**Pack size 2.5kg**

**Treatment Untreated**

### PERENNIAL CHICORY



Creates tall, dense cover, bolting in its second year to create a 6 - 7ft flowering hedge, useful where a perimeter barrier is required. It has good tolerance to drought, acid soils and major pests (but does not like very wet ground) and has a high mineral content including zinc, potassium and copper.

**Sowing rate 5kg/ha**

**Pack size 5kg & 25kg**

**Treatment Untreated**

### GENERAL PURPOSE REARING PEN MIX



25% Amenity Perennial Ryegrass

23% Late Perennial Ryegrass (Diploid)

20% Creeping Red Fescue

15% Timothy

7% Meadow Fescue

5% Birdsfoot Trefoil

5% White Clover

**100%**

**Sowing rate 32 - 37kg/ha**

**Pack size 15kg**

### GREEN FENNEL



A perennial plant which provides excellent cover for both pheasant and partridge, its distinctive smell makes it highly attractive to both. When sown alongside other species it can create an excellent cover crop.

**Sowing rate 6 - 8kg/ha**

**Pack size 5kg & 25kg**

**Treatment Untreated**





# Game Cover Mixtures

Sundown Mixture

Traditional Game Cover Mixture

Northern Star Mixture

Our range of game cover mixtures are specially formulated to ensure you will be able to achieve the best from your cover crops. Combining different species into a mixture can extend the utilisation period, help to attract and hold specific types of game and provide feed and cover where both are required.

However, there are sometimes instances when none of the above will fit the bill for one reason or another. In these cases, specialised mixtures to suit individual specific requirements can be arranged.



## FOUR TEN MIXTURE



This mixture will provide cover and feed throughout the season. Sorghum will provide added warmth and cover below the maize. These species have similar husbandry techniques.

- 70% Game Maize
- 30% Sorghum

100%

**Sowing rate 35kg/ha**  
**Pack size 14kg**  
**Treatment Fungicide treatments**

## SUNDOWN MIXTURE



A carefully blended mixture of game cover maize, sorghum and sunflowers that combine fantastic feeding and cover potential of the species. This mixture provides full season cover and feed. It is not recommended for marginal areas.

- 65% Game Maize
- 20% Sunflower
- 15% Sorghum

100%

**Sowing rate 32kg/ha**  
**Pack size 13kg**  
**Treatment Fungicide treatments**

For Wild Bird Mixtures see pages 10 & 11  
 Partridge Mix, Northern Sown Mixtures see page 11

## BROADSHOT MIXTURE



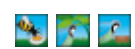
A combination of species selected to provide feed and cover. This mixture can be left to regenerate for a second year. Species selected to facilitate economical weed control with chemicals such as Clopyralid.

- 34% Buckwheat
- 17% Kale
- 10% Phacelia
- 10% White Millet
- 8% Forage rape
- 8% Red Millet
- 5% Japanese Reed Millet
- 4% Quinoa
- 4% Yellow Blossom Clover

100%

**Sowing rate 15kg/ha**  
**Pack size 10kg**  
**Treatment Untreated**

## DECOY GAME MIXTURE



A combination of eight small seed producing species which will provide excellent cover and feed and will last throughout the season. It is easy to sow and establish as all the seeds are of similar size.

- 23% Linseed
- 22% Buckwheat
- 18% Red Millet
- 18% White Millet
- 7% Fodder Radish
- 7% White Mustard
- 3% Japanese Reed Millet
- 2% Gold of Pleasure

100%

**Sowing rate 20kg/ha**  
**Pack size 10kg**  
**Treatment Untreated**

## TRADITIONAL GAME COVER MIXTURE



A traditional mixture of species especially selected for their feed and cover qualities. This mixture is designed for a full season of cover that will provide holding, feed and cover for all game birds. The sunflowers add an attractive splash of colour. Due to the variance in seed size broadcast to achieve optimum establishment. Ensure that treated seed is covered by harrowing and rolling.



**Sowing rate 25kg/ha**  
**Pack size 10kg**  
**Treatment Various treatments**

- 17.5% White Millet
  - 15% Game Maize
  - 15% Red Millet
  - 14% Buckwheat
  - 12% Intermediate Sorghum
  - 10.5% Sunflower
  - 9.5% Kale
  - 2.5% White Mustard
  - 2.5% Forage Rape
  - 1% Gold of Pleasure
  - 0.5% Phacelia
- 100%



# Game Cover Mixtures

Fast growing crops that have potential to provide cover & seed quickly

## LATE COVER AND RESCUE MIXTURES



### BOOST MIXTURE



A fast growing, quick to establish, frost hardy crop. Ideal to sow in late summer or early autumn to provide cover that will last throughout the winter. Excellent as a 'rescue' mixture for patching failed crops or when a later sown crop is required.

- 70% Brassica Carinata
- 10% Hybrid Brassica
- 10% Fodder Radish
- 10% Brown Mustard

100%

Sowing rate 6 - 10kg/ha  
Pack size 10kg  
Treatment Untreated

## LATE COVER MIXTURE



A rapidly establishing and maturing mixture providing winter cover to the height of 2 - 3 feet. It is often used as a patching crop where spring crops have failed. This mixture will tolerate drought conditions.

- 75% Forage Rape
- 14% White Mustard
- 11% Fodder Radish

100%

Sowing rate 12 - 15kg/ha  
Pack size 10kg  
Treatment Untreated



Late Cover Mixture

## KWIK FIX



This is a flexible cover crop which can be used to patch failed spring game covers. Mustard increases the cover element and fodder radish prolongs the cover period. This mixture will not provide full season cover, but it is more winter hardy than straight mustard.

- 80% Fodder Radish
- 20% White Mustard

100%

Sowing rate 12 - 15kg/ha  
Pack size 10kg  
Treatment Untreated

## RESCUE MIXTURE



A rapid establishing and maturing mixture providing cover and potentially seeds in 16 weeks from sowing. Excellent as a rescue mixture for patching failed crops or where a later sown crop is required.

- 50% Buckwheat
- 15% Fodder Radish
- 15% White Mustard
- 10% Gold of Pleasure
- 10% Brassica Carinata

100%

Sowing rate 12kg/ha  
Pack size 10kg  
Treatment Untreated

## ZOOM BRASSICA MIXTURE



Zoom is a mixture of Winfred hybrid brassica and forage rape. This is a very vigorous and quick growing mixture which is ideal for replacing failed crops or patching spring sown crops. High seedling vigour gives a reliable establishment of a high leaf to stem ratio crop with carefully selected varieties that have good disease and bolting resistance.

Sowing rate 6 - 10kg/ha  
Pack size 5kg  
Treatment Untreated



Zoom Brassica Mixture



# Forage Crops Selector

Forage crops provide an extremely cost effective way of supplementing livestock rations during times when fodder may be scarce, during dry spells in summer and the cold winter months. They will supply substantial quantities of palatable material at relatively low production costs, balancing the amount of bought-in feed required.

## ICON KEY



LIFTING



CATTLE GRAZING



SHEEP GRAZING



CULINARY USE

Stock should be introduced gradually over a two week period and an area of grassland should be available for animals to return to. Water and hay or straw should also be made available. Please contact your supplier for further guidance.

Crop	Page No.	Pack Size	Average Sowing Rate kg / Hectare		Sowing Date Guide	Utilisation Period	Average Drill Depth cm	Average Row Width cm	Suggested Guide to Seedbed Fertiliser (kg) ha			Days Sowing to Grazing	No of possible Grazings	Dry Matter (%)	Digestibility (D-Value)	CP (% DM)	ME (MJ/Jkg DM)
			Broadcast	Direct Drill					N	P	K						
Stubble Turnip	38	10kg & 25kg	7.5	5	Apr-mid Sept	Jun-Jan	1-2	n/a	75	40	40	60-100	1	12-15	70	17-18	10-11
Main Crop Turnip	38	2kg	5	2.5 - 3.5	May-Jul	Oct-Jan	1-2	n/a	40	80	100	60-100	1	12-15	80	17-18	10-11
Forage Rape	39	10kg & 25kg	10	6	May-end Sept	Jun-Jan	1-2	n/a	20	40	40	90-100	2	10-12	70	19-20	10-11
Fodder Beet	40	1ac 50,000 seeds	-	Precision drill 100,000/ha	Mar-May	Oct-Mar	2.5-3	50-60	110	50	50	-	-	12-19	78	12-13	12-12.5
Swede	41	500g & 1kg	2.5 - 5	Precision drill 370-865 kg/ha grade H Direct Drill 1	Apr-June	Aug-Mar	1-2	45-70 graded 40 natural	40	80	100	170-250	1	17-20	82	10-11	12-13
Kale	42	1kg & 5kg	7.5	2.5 - 5	Apr-Jul	Sept-Mar	1-2	50	100	50	120	150-220	1	15-17	68	14-17	10-11
Spitfire	39	5kg & 25kg	10	6	May-end Sept	Jul-Dec	1-2.5	15-20	20	40	40	90-110	2	12-15	70	18-19	10-11
Zoom	39	5kg	10	6	April-Sept	Sept-Jan	1-2	various	110	55	55	90-110	2	12-15	70	18-19	10-11
Rapid Root Mixture	43	10kg	8.5	6	mid Apr-mid Sept	Jul-Dec	1-2	n/a	60	50	50	-	-	-	-	-	-
Winter Graze Mixture	43	10kg	8.5	6	mid Jul-mid Sept	Post Christmas	1-2	n/a	60	50	50	-	-	-	-	-	-

Source: NIAB

**DISCLAIMER** These tables are given in good faith and intended for general guidance only. Weather, local conditions and crop rotations must always be taken into account. Always consult a FACTS qualified advisor.



# Turnips

**Stubble Turnips** are a fast growing catch crop, popular with livestock farmers. They may be sown after first cut silage for summer grazing or after winter cereals for autumn usage. When planting a large acreage it is advisable to stagger sowing dates, increasing the seed rate in dry conditions. If being used for dairy cow grazing it is important to take into consideration the distance between the field and the milking parlour. Strip grazing is advisable if possible to limit wastage. There are two types of stubble turnip: bulbing (see Barkant and Vollenda) and non bulbing (see Tyfon and Jupiter).

## Stubble Turnips Yield and Feed Quality

Average Dry Matter Yield	3.5 - 4.5 tonnes/ha
Average Fresh Yields	38 - 45 tonnes/ha
Crude Protein	17 - 18% (mainly leaves)
Digestibility Value	68 - 70%
Dry Matter	8 - 9%
Metabolisable Energy	11MJ/kg DM
Sugars in DM	55%

## Bulbing Types



### BARKANT

A winter hardy, highly digestible variety with high dry matter. Produces large tankard shaped roots which are palatable by both sheep and cattle. This is a proven and reliable stubble turnip.

Sowing rate 5 - 7.5kg/ha  
Pack sizes 10kg & 25kg  
Treatment Untreated (Limited)

### VOLLEND A (Tetraploid)

A large leafed, highly digestible variety with good early vigour and good disease resistance. It retains its palatability throughout the season, and is noted for its yield, speed of growth and bolting resistance.

Sowing rate 5 - 7.5kg/ha  
Pack sizes 10kg & 25kg  
Treatment Untreated (Limited)

Variety	Barkant	Vollenda(T)	Tyfon
Relative Yield of Dry Matter	104	102	102
Dry Matter Content (%)	9.5	9.7	8.9
Root Size (9=large 1=small)	4	5	2
Root Anchorage (9=good 1=poor)	5	4	6
Bolting Resistance (early sown) (9=good 1=poor)	6	9	3
Winter Hardiness (9=good 1=poor)	7	7	5
Club Root (9=good 1=poor)	7	8	5
Powdery Mildew Resistance (9=good 1=poor)	5	5	3

## Non Bulbing Types



### TYFON

A leafy, fast growing cross between Chinese cabbage and stubble turnip. It exhibits high frost resistance and can be utilised within eight to ten weeks after sowing. There is potential for regrowth.

Sowing rate 5 - 7.5kg/ha  
Pack size 5kg  
Treatment Untreated

### JUPITER LEAFY TURNIP

Jupiter is a very leafy turnip that can be sown in spring or autumn for forage production these leafy turnips can be grazed after just 6-8 weeks. Jupiter also has a very high dry matter yield.

Sowing rate 5 - 7.5kg/ha  
Pack size 10kg & 25kg  
Treatment Untreated

Source: NIAB

## Main Crop Turnip



Later maturing than stubble turnips and with higher dry matter, higher yields and better winter hardiness. They have a growing period of 12 – 15 weeks and provide excellent autumn and early winter feed for sheep and cattle.

### GREEN GLOBE

Green Globe turnips produce soft, easily eaten roots that are well anchored into the ground, suitable for grazing by all types of stock. They will provide a very high fresh yield from large bulbs and are utilised between October and January, preferably strip grazed to reduce waste.

Sowing rate Drill 2.5 - 3.5kg/ha Broadcast 5kg/ha  
Pack size 2kg  
Treatment Untreated  
Sow Late May to July

Variety	GREEN GLOBE 100% = Tonnes/ha
Total Dry Matter Yield (%)	(5.7t/ha) 100
Total Fresh Yield (%)	(70.6 t/ha ) 100
Dry Matter (%)	8.2
Powdery Mildew Resistance (9 = Best)	4
Root Shape (9 = Best)	6

Source: Advanta & SCRI trials



# Forage Rape



**Forage Rape** has the advantage of being a very fast growing crop suitable for grazing by sheep or cattle. It is an ideal catch crop for boosting midsummer forage production for livestock farmers when planted in the spring, it is also suitable for fattening lambs in the autumn/winter. Forage rape extends the grazing season in the autumn and is superb for flushing ewes. It is better to strip graze to avoid excessive wastage.

Forage Rape can be mixed with stubble turnips and kale to combine the many benefits of these crops (see page 43 for root mixtures).

Forage Rape Yield and Feed Quality	
Average dry matter yield	3.5 - 4 tonnes/ha
Average fresh yields	24 - 35 tonnes/ha
Crude protein	19 - 20% (mainly leaves)
Digestibility value	65D
Dry matter	12 - 14%
Metabolisable energy	10 - 11 MJ/kg DM

## EMERALD



Emerald is a proven, well known variety producing rapidly establishing, medium to tall leafy plants maturing in 10-12 weeks after sowing. It is fast growing with average dry matter yields and good general disease resistance. Importantly, it has very good feeding quality, being high in protein and easily digestible, remaining palatable well into the winter. An added benefit is its widely branched root system for improvement of soil structure.

**Sowing rate 6 - 10kg/ha**  
**Pack size 10kg & 25kg**  
**Treatment Untreated**



## ZOOM BRASSICA MIXTURE



Zoom is a blend of Winfred hybrid brassica and forage rape. This is a very vigorous and quick growing mixture which is ideal for replacing failed crops or patching spring sown crops. High seedling vigour gives a reliable establishment of a high leaf to stem ratio crop with carefully selected varieties that have good disease and bolting resistance.

**Sowing rate 6 - 10kg/ha**  
**Pack size 5kg**  
**Treatment Untreated**

## SPITFIRE HYBRID FORAGE BRASSICA



Spitfire is a modern hybrid rape created by crossing rape with kale and is a good companion to use with other fast establishing brassicas. It is a medium-tall variety with high dry matter yield, excellent aphid tolerance, good stock palatability and rapid establishment to maturity. It also has very good re-growth potential but needs to be carefully managed to avoid damage to stems. Spitfire is a multi-purpose rape suitable for planting in spring for excellent summer and autumn feed or in early autumn for quality winter feed. The main strengths of Spitfire are excellent yield, insect tolerance, and a low dry matter (DM%) stem. The very low DM% content of the stem produces high quality forage with good utilisation at grazing.

**Sowing rate 6 - 10kg/ha**  
**Pack size 5kg & 25kg**  
**Treatment Untreated**

Stock should be introduced gradually over a two week period and an area of grassland should be available for animals to return to; water and hay or straw should also be made available. Please contact your supplier for further guidance.



# Fodder Beet

**Fodder Beet** is grown as a main root crop. It can produce substantial yields of high quality fodder and is an excellent supplement to grass silage. The roots are very palatable to stock and have superb feed quality. Specialist harvesting equipment is required to lift the roots and storage is required unless they are strip grazed in situ.

Medium dry matter varieties tend to have a higher percentage of root above ground and can be lifted with a top lifter and therefore have a relatively low dirt tare. These highly palatable roots can be fed whole to stock. High dry matter varieties tend to sit further in the ground and require a sugar beet harvester to lift them. Due to the higher dirt tare and hardness of the root, these varieties may need to be chopped and washed before feeding. After wilting, the tops may be fed to stock and can contribute a further yield of 3-4 tonnes of protein-rich dry matter per hectare.

Pack size - 50,000 seeds per acre

**SEED TREATMENT - Force 10/Tachigaren Pelleted Untreated Seed (Limited)**

Variety		Fresh Yield		DM %	DM Yield		Root in Ground %	Bolters #/10m <sup>2</sup>
		tonne/ hectare	% Enermax		tonne/ hectare	% Enermax		
BANGOR	Yellow	111.45	110.1%	18.6%	20.52	96.1%	51%	0.29
DELICANTE	White	116.40	114.9%	19.1%	22.23	104.1%	56%	0.00
ENERMAX	White	101.26	100.0%	21.4%	21.35	100.0%	72%	0.00
JAMON	Orange	105.71	104.4%	18.1%	19.10	89.5%	51%	0.07
MAGNUM	White	100.96	99.7%	22.2%	22.12	103.6%	62%	0.07
MONRO	Red	101.07	99.8%	15.9%	15.98	74.8%	49%	0.39

**DELICANTE**



Delicante is a high yielding white beet.



Delicante



OUTSTANDING PRODUCT OF THE YEAR

*Everyone's talking about it!*

## MONRO



An ideal variety for grazing with its low dry matter of 14.6%. It has exceptional high fresh yields from red roots that are mostly above ground.

## JAMON



A very consistent variety producing a clean highly palatable orange root with average dry matter yields. It has good resistance to leaf disease and bolting. Jamon benefits from large top size and has 33% of its root above the ground which allows for easy lifting.

## MAGNUM



Magnum has a consistent root size and reliable high dry matter yields. It is a very palatable variety therefore increasing appetite and dry matter intake in all stock. Higher dry matter fodder beet has been shown to increase milk yield and daily live weight gain. Due to its high dry matter content it is more frost resistant than other varieties with a high proportion of clean, white root in the ground.

## BANGOR



Bangor is an improvement on the illustrious/long-time-acknowledged varieties Kyros and Troya – resulting in a yield increase and uniform roots. Bangor is easily lifted on all soil types, due to the regular shape of the root and its high position above the ground. With a medium DM in the root it results in a very high yield of 105%.



## ENERMAX



An exciting dual purpose variety for both fodder and bio-energy production. High yielding with a low dirt tare.

Enermax has a clean, white, smooth-skinned root and is shallow rooting, resulting in a cleaner end product particularly important for the bio-fuel market.

It has a higher root yield when compared with the well-known and popular variety Magnum. Official variety testing (Denmark 2010 - 2011), has shown that Enermax can produce 21 tonnes/DM/ha from the root only, with the beet tops adding approximately 5 tonnes DM/ha.

Enermax has the additional benefit of being Rhizomania tolerant and so is suitable for growing in the east of the country where sugarbeet is a widely grown crop, as well as in the west and other areas.





# Swedes



**Swedes** are a full season root crop which are mainly fed in situ, but can also be lifted and stored in a clamp. They are an excellent high energy winter feed. It is advisable to use an electric fence to reduce wastage. They do best in areas of high rainfall, so are generally grown in the more northerly and western areas of the UK. Swedes can be grown in a wide range of soil types with good drainage as they are sensitive to compaction and poor drainage; they do best in soils with a pH of approximately 6.5. The majority of swede crops are now sown with precision drills which require a level seed bed. Varieties are generally classed as fodder or culinary types; however there are some dual purpose types.

All natural seed is packed in 1 kg packs Untreated

All graded seed is packed in 0.5 kg packs Untreated

## AIRLIE



Airlie is a low to medium dry matter variety with a very high fresh yield and good disease resistance. It is a dual purpose variety suitable for fodder and culinary use with purple skin and creamy white flesh. Airlie is an early to intermediate use variety.

## GOWRIE (Limited)



Gowrie is a uniform, medium dry matter variety with some club root tolerance and good mildew. It is a dual purpose variety suitable for fodder and culinary use, with purple skin and yellow flesh.

## KENMORE (Limited)



Kenmore is an early maturing variety with medium dry matter, best suited as stock feed not culinary use. It has good winter hardiness which means it has a very wide utilisation window. Kenmore has bronze skin with white flesh.

## MARIAN (Limited)



Marian is a medium dry matter variety with moderate resistance to club root. It is a dual purpose variety suitable for fodder and culinary use with yellow coloured flesh and purple skin.

Variety	Airlie	Gowrie	Kenmore	Marian
Fodder	✓	✓	✓	✓
Culinary	✓	✓		✓
Root shape (9=globe 1=tankard)	6	4	5	4
Skin colour	Light purple	Purple	Bronze	Purple
Flesh colour	Creamy white	Yellow	White	Yellow

## Seed Rate Calculator Guide - No. of Seeds X 1000

Spacings	Row Width					
	18"	20"	22"	24"	26"	28"
Spacings 2"	174	157	143	131	121	112
Spacings 3"	116	105	95	87	80	75
Spacings 4"	87	78	71	65	60	56
Spacings 5"	70	63	57	52	48	45
Spacings 6"	58	52	48	44	40	37

(For seed size grade H (1.75 - 2.00mm) 1000 seed weight grade H approx 3.2g)

Swede Yield and Feed Quality	
Average dry matter yield	7 - 10 tonnes/ha
Average fresh yields	70 - 80 tonnes/ha
Crude protein	10 - 11%
Digestibility value	82D
Dry matter	9 - 13%
Metabolisable energy	12.8 - 13.1 MJ/kg DM
Sugars in DM	59%



# Kale

**Kale** is a brassica traditionally grown for grazing in the autumn and winter. It can also be cut and fed to stock 'in house' or as an alternative can be ensiled as big bale kaleage. Kale is very useful as it can extend the grazing season. This crop is best strip grazed to avoid excessive wastage and ensure both leaf and stem are eaten. It is advisable to stagger sowing dates to ensure it does not over-mature. It is very adaptable and can grow on most sites throughout the UK. Kale can also be used as game cover (See page 28).

## Kale Yield and Feed Quality

Average dry matter yield	8 - 10 tonnes/ha
Average fresh yields	60 – 65 tonnes/ha
Crude protein	16 - 17% fresh, 19 - 25% ensiled
Digestibility value	68D
Dry matter	14 - 16%
Metabolisable energy	10 - 11 MJ/kg DM
Sugars in DM	17%

## GRÜNER ANGELITER



A very high yielding variety with good winter hardiness and excellent feeding quality with fresh yields 15% higher than Caledonian kale and 10% higher than Bittern in German trials. Grüner Angeliter has been the mainstay forage variety of kale in New Zealand for many years and since its introduction to the UK has become equally popular over here. Its high yields make it ideal for utilisation by dairy and beef cattle and as winter feed for sheep.

**Sowing rate 2.5 - 7.5kg/ha**  
**Pack size 1kg & 5kg**  
**Treatment Untreated**

## PROTEOR



An excellent leafy variety with high leaf to stem ratio, therefore increasing palatability and stock utilisation. Proteor is a high yielding, medium height kale with winter hardiness and good disease resistance.

**Sowing rate 2.5 - 7.5kg/ha**  
**Pack size 1kg & 5kg**  
**Treatment Untreated**

## THOUSAND HEAD



A reliable and consistent variety. It's a medium height variety with good winter hardiness providing excellent yields.

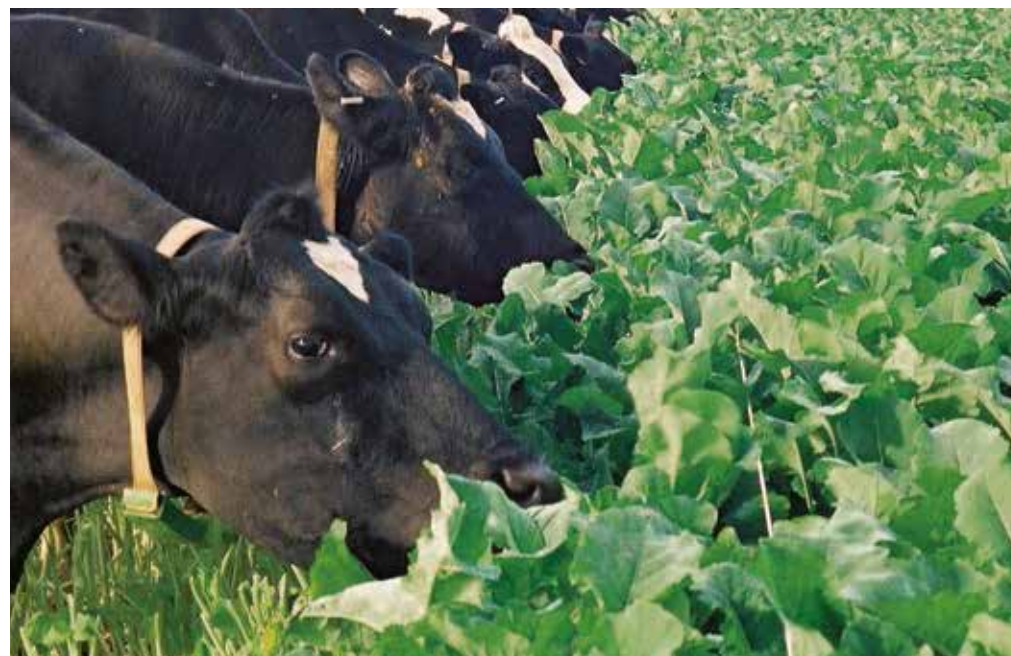
**Sowing rate 2.5 - 7.5kg/ha**  
**Pack size 1kg & 5kg**  
**Treatment Untreated**

## ASTERA



A very productive and leafy variety, characterised by its high yields. It is a very winter hardy variety producing high crude protein yields.

**Sowing rate 2.5 - 7.5kg/ha**  
**Pack size 1kg & 5kg**  
**Treatment Untreated**







# Root Mixtures & Arable Silage

## Root Mixtures

The following two catch crop mixtures combine the benefits of stubble turnips and forage rape, excellent for fattening lambs during autumn and winter providing winter keep for all stock. These mixtures have been in great demand over recent years and the results from stock utilisation have been excellent.

### RAPID ROOT

(post Christmas use)



The forage rape element of this mixture ensures quick establishment and high protein yields, whilst the stubble turnips provide energy and stockholding capacity. The mixture is ideal for fattening stock and will provide grazing from July through to December.

Sow mid April - mid September.

- 65% Forage Rape
- 30% Stubble Turnip
- 5% Kale

100%

Sowing rate 6 - 8.5kg/ha

Pack size 10kg

Treatment Untreated

### WINTER GRAZE

(pre December use)



A mixture of palatable, proven varieties ideal for sowing after winter cereals. The mixture is suitable for post Christmas grazing as it exhibits very good winter hardiness, which is improved by the addition of the kale.

Sow mid July - mid September.

- 60% Stubble Turnip
- 35% Forage Rape
- 5% Kale

100%

Sowing rate 6 - 8.5kg/ha

Pack size 10kg

Treatment Untreated

Stock should be introduced gradually over a two week period and an area of grassland should be available for animals to return to. Water, hay or straw should also be made available. Please contact your supplier for further guidance.

## Arable Silage Mixtures

offer an alternative or additional feed to grass or maize silage and are particularly suitable for farmers wishing to increase their levels of home-produced protein and reduce their reliance on purchased feed and fertiliser. They produce a cost-effective, high quality forage of consistent quality and palatability, with high yields of dry matter even in dry seasons and cold weather. They can be self-fed from the silage-face or as bales and their early harvest allows for earlier drilling of other autumn combinable crops or reseeding of grass.

### CONVENTIONAL MIXTURES

#### Pea & Barley No.1

- 66% Spring Peas
- 34% Spring Barley

#### Barley Pro Plus No.2

- 50% Spring Barley
- 20% Maple Peas
- 20% Spring Peas
- 10% Spring Vetch

#### Oat Pro Plus No.3

- 36% Spring Peas
- 32% Spring Barley
- 32% Spring Oats

### ORGANIC MIXTURES

#### Organic Pea & Barley No.1

- 35% Organic Spring Barley
- 35% Organic Spring Peas
- 30% Spring Peas

#### Organic Barley Pro Plus No.2

- 50% Organic Spring Barley
- 20% Organic Spring Peas
- 20% Spring Peas or Bluetooth Peas
- 10% Spring Vetch

#### Organic Oat Pro Plus No.3

- 35% Organic Spring Barley
- 35% Organic Spring Oats
- 30% Spring Peas or Bluetooth Peas

### STRAIGHTS

Rather than grow a mixture, some growers prefer to grow a single crop on it's own. We can offer Vetch and Lucerne for these situations.

Vetch  
Packed in 25kg bags

Organic Vetch  
Packed in 25kg bags

Lucerne (inoculated)  
Packed in 25kg bags

Organic Lucerne (inoculated)  
Packed in 25kg bags



All mixtures are available packed in 500kg bags. Treatment: Various and Organic Untreated  
The suggested sowing rate for all mixtures is 150kg - 225kg per hectare. **Book early to avoid disappointment.**





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