

2021

# Openfield™

Seed, fertiliser, grain, storage.    

A PRACTICAL GUIDE TO ENVIRONMENTAL, GREEN MANURE, GAME COVER AND FORAGE SEEDS



[www.openfield.co.uk](http://www.openfield.co.uk)



# Welcome

## YOUR COUNTRYSIDE 2021

NEW FOR  
2021

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

Each year brings its own challenges to growers and this year has been no exception. After a difficult start to the year accompanied by increased pest pressures, growers are now faced with new further challenges due to Brexit. Our diverse range of species and choice of specialist mixtures can be found in our comprehensive catalogue, which brings together Game Cover, Environmental Stewardship, Roots and Cover Crops. We hope you find Your Countryside 2021 a useful and informative guide.

### 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.

### THE LATEST PRODUCTS

#### NEW UPDATES, VARIETIES & MIXTURES

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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



Plantlife



### 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)

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



CULINARY USE

**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.

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**LEGUME FALLOW MIXTURE WITH GRASS (AB15)**  
SEE PAGE 07



**WBS 4 1 YEAR SPRING SOWN (AB9)**  
SEE PAGE 10



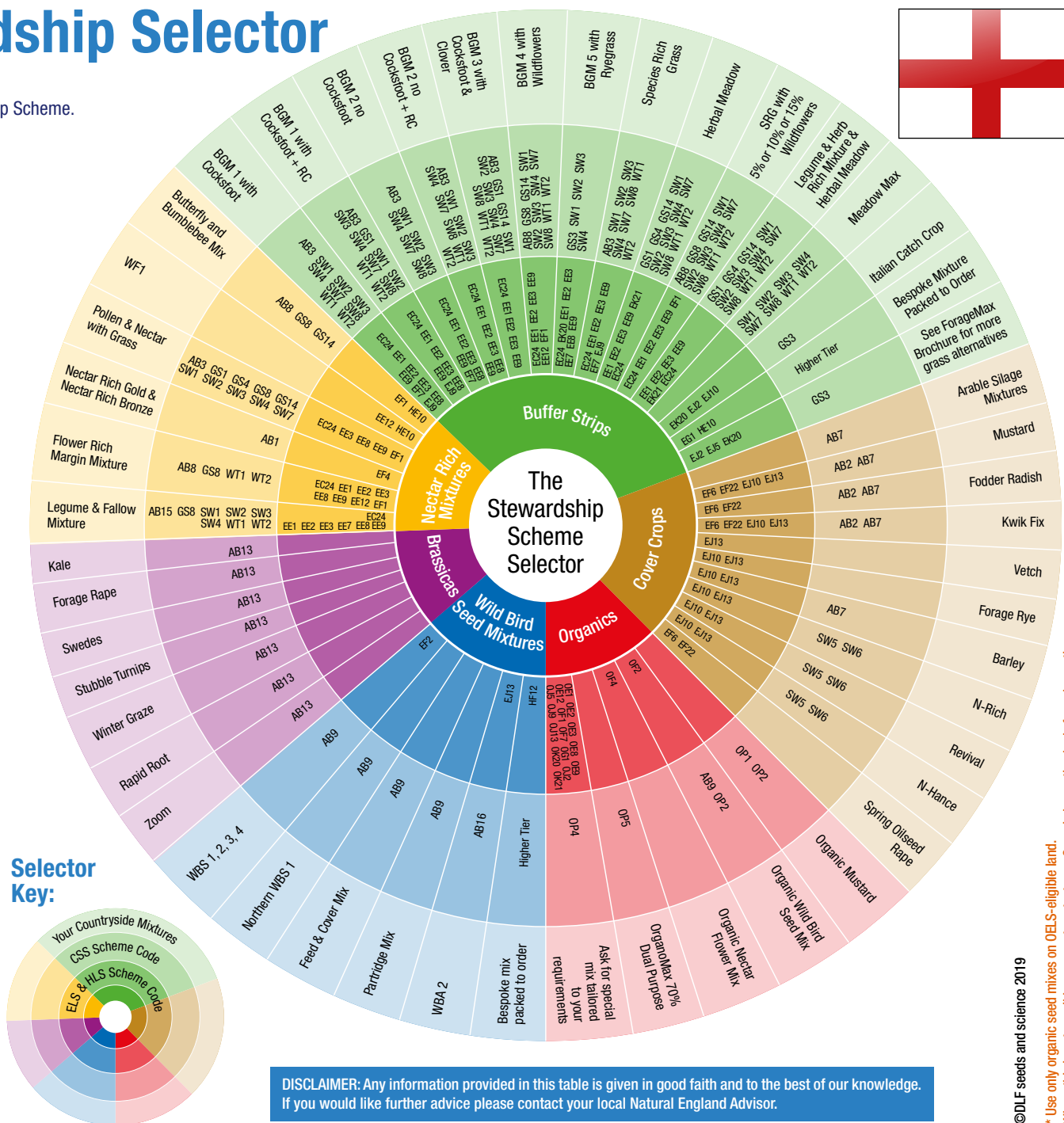
**BANGOR FODDER BEET**  
SEE PAGE 40



Entry Level Stewardship selector with options that are also available under Higher Level Stewardship Scheme and Countryside Stewardship Scheme.



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
<b>ELS &amp; HLS Description</b>			
ELS Code	HLS Code	OELS Code*	ELS & HLS Description
<b>Options for trees and woodland</b>			
EC24			Hedgerow tree buffer strips on cultivated land
<b>Options for buffer strips</b>			
EE1		OE1	2m Buffer strips on cultivated land
EE2		OE2	4m Buffer strips on cultivated land
EE3		OE3	6m Buffer strips on cultivated land
EE8		OE8	Buffering in-field ponds in arable land
EE9		OE9	6m buffer strips on intensive grassland next to a watercourse
	HE10		Floristically enhanced grass buffer strips (non-rotational)
EE12		OE12	Supplement to add wildflowers to field corners & buffer strips
<b>Options for arable land</b>			
EF1		OF1	Management of field corners
EF2		OF2	Wild bird seed mixture
EF4		OF4	Nectar flower mixture
EF6		OF6	Overwintered stubble
EF7		OF7	Beetle banks
	HF12		Enhanced wild birdseed mix plots (rotational or non- rotational)
EF22			Extended overwintered stubble
<b>Options to encourage a range of crop types</b>			
EG1		OG1	Under sown spring cereals
<b>Options to protect soil and water</b>			
EJ2		OJ2	Management of maize crops to reduce soil erosion
EJ5		OJ5	In-field grass areas to prevent erosion and run-off
EJ9		OJ9	12m buffer strips for watercourses on cultivated land.
EJ10			Enhanced mgmt. of maize crops to reduce soil erosion & run off
EJ13		OJ13	Winter cover crops
<b>Options for grassland outside the severely disadvantaged areas (SDAs)</b>			
EK20		OK20	Ryegrass seed-set as winter/ spring food for birds
EK21		OK21	Legume and herb-rich swards



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

**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.



# Nectar Rich Mixtures



"Pro Flora 1 Flowers Only, provided a fantastic show of colour from July to October. The all native annual mixture has produced an abundance of nectar, attracting many species of pollinators and invertebrates."

Eamon McAllister,  
Portlennone,  
Co. Antrim.

05

ENVIRONMENTAL

## NECTAR RICH MIXTURES

### Butterfly & Bumblebee Mixture (AB8)

15% Creeping Red Fescue  
15% SSMG  
10% Brown-top Bent  
10% Hard Fescue  
10% Sheeps Fescue  
7% Lucerne (inoculated)  
5% Yorkshire Fog  
4.5% Hairy Vetch  
4% Birdsfoot Trefoil  
4% Kidney Vetch (N)  
4% Alsike Clover  
2% Tufted Hairgrass  
1.5% Ribwort Plantain  
1% Agrimony (N)  
1% Phacelia  
1% Red Campion (N)  
1% Musk Mallow  
1% White Campion (N)  
0.75% Oxeye Daisy  
0.5% Black Knapweed  
0.5% Field Scabious  
0.5% Selfheal  
0.5% Wild Carrot  
0.25% Field Pansy (N)

100%

Sowing rate 16kg/ha  
Pack size 1kg

### WF1 (AB1)

42% Sainfoin  
10% Birdsfoot Trefoil  
8% Winter Vetch  
7% Alsike Clover  
7% Red Clover  
6% Yarrow  
5% Lucerne (inoculated)  
2.25% Crimson Clover  
2% Black Medick  
2% Oxeye Daisy  
1.5% Corn Cockle (N)  
1.25% Musk Mallow  
1.25% Wild Carrot  
1% Red Campion (N)  
1% Selfheal  
0.75% Cornflower (N)  
0.5% Corn Marigold (N)  
0.5% Field Poppy (N)  
0.5% Salad Burnet (N)  
0.5% White Campion (N)

100%

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

### Nectar Rich Bronze (AB1)

45% Sainfoin  
25% Winter Vetch  
8% Red Clover  
7.5% Birdsfoot Trefoil  
7% Alsike Clover  
4% Crimson Clover  
3% Lucerne (inoculated)  
0.25% Oxeye Daisy  
0.25% Wild Carrot

100%

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

### Annual Nectar Mixture

25% Buckwheat  
22% Sainfoin  
20% Phacelia  
10% Crimson Clover  
10% Lucerne (inoculated)  
7% Red Clover  
6% Alsike Clover

100%

Sowing rate 10kg/ha  
Pack size 5kg

### Nectar Rich Gold (AB1)

40% Sainfoin  
18% Winter Vetch  
10% Alsike Clover  
10% Red Clover  
10% Birdsfoot Trefoil  
10% Lucerne (inoculated)  
1.5% Musk Mallow  
0.5% Yarrow

100%

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

## ORGANIC MIXTURE

### Organic Nectar Flower Mixture

32.5% Organic Vetch  
27.5% Organic Lucerne (inoculated)  
18% Sainfoin  
6% Organic Red Clover  
6% Birdsfoot Trefoil  
6% Alsike Clover  
4% Organic Crimson Clover

100%

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

(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.

## 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.

## NATIVE WILDFLOWER MIXTURES



Contact us for more information

Our range of Pro Flora Wild Flower mixtures will cater for most situations.

We are always pleased to advise upon and produce mixtures to suit individual specifications.

View the online digital brochure

[www.bit.ly/33sCi74](http://www.bit.ly/33sCi74)

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)
- 110 General Purpose Economy (N)

Pack size 1kg

## COLOUR BOOST RANGE

A range of 100% wildflower mixtures providing colourful flowers, essential food source and habitat for many pollinating insects.

### COLOUR BOOST 1

#### High Impact Annuals

Quick to establish, long flowering period, from 8 weeks to first frost.  
Sowing Rate 3-5gm/m<sup>2</sup>

### COLOUR BOOST 2

#### High Impact Low-Grow Annuals

Low growing mixture.  
100% Dwarf flower mixture.  
Sowing Rate 3-5gm/m<sup>2</sup>

### COLOUR BOOST 3

#### High Impact Perennials

Seasonal Perennial mixture, comprising 90% perennial species and 10% annual species.  
Sowing Rate 3-5gm/m<sup>2</sup>

### COLOUR BOOST 4

#### Roses and Reds Annuals

Designed to flower from late Spring through to Autumn.  
Sowing Rate 3-5gm/m<sup>2</sup>

### COLOUR BOOST 5

#### Summer Yellows Annuals

Mix of Yellows flowering from late Spring well into Autumn.  
Sowing Rate 3-5gm/m<sup>2</sup>

### COLOUR BOOST 6

#### Summer Chameleon Annuals

40 species constantly changing throughout the growing season.  
Sowing Rate 3-5gm/m<sup>2</sup>



# Flower Rich Margins

Flower Rich Grass Margins provide important habitat for invertebrates and birds

## FLOWER RICH MARGINS

### Pollen & Nectar with Grass (GS4)

15% SSMG  
10% Cocksfoot  
10% Festulolium  
10% Red Clover  
10% Sainfoin  
10% Timothy  
8% Birdsfoot Trefoil  
6% Winter Vetch  
5% Creeping Red Fescue  
5% Tall Fescue  
5% Tall Oat Grass  
3% Alsike Clover  
2% Black Medick  
0.3% Musk Mallow  
0.3% Oxeye Daisy  
0.2% Selfheal  
0.15% Yarrow  
0.05% Sheeps Burnet

**100%**

Sowing rate 20kg/ha  
Pack size 10kg

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

30% Creeping Red Fescue  
22% SSMG  
20% Chewings Fescue  
10% Hard Fescue  
4% Sainfoin  
4% Crested Dogtail  
3% Winter Vetch  
2% Browntop Bent  
1.4% Red Clover  
1% Alsike Clover  
0.5% Birdsfoot Trefoil  
0.5% Black Medick  
0.4% Yarrow  
0.4% Oxeye Daisy  
0.3% Wild Carrot  
0.25% Ribwort Plantain  
0.25% Sheeps Burnet

**100%**

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

### Flower Rich Margin Mixture (AB8)

25% Slender Red Fescue  
25% SSMG  
12% Chewings Fescue  
10% Crested Dogtail  
5% Hard Fescue  
3.5% Winter Vetch  
3.25% Sainfoin  
3% Browntop Bent  
2.5% Birdsfoot Trefoil  
2% Black Medick  
2% Red Clover  
1.25% Oxeye Daisy  
1.20% Wild Carrot  
1.20% Yarrow  
1% Red Campion (N)  
1% Ribwort Plantain  
0.5% Musk Mallow  
0.25% Selfheal  
0.25% Lady's Bedstraw  
0.1% Salad Burnet (N)

**100%**

Sowing rate 16 - 20kg/ha  
Pack size 10kg & 20kg

Bumblebee Conservation Trust supporting wild pollinators on your land



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

20% Selfheal (N)  
10% Birdsfoot Trefoil (N)  
10% Black Medick (N)  
10% Ribwort Plantain (N)  
8% Black Knapweed (N)  
8% Oxeye Daisy (N)  
8% Yellow Rattle (N)  
6% Red Campion (N)  
5% White Campion (N)  
4% Yarrow (N)  
3% Lady's Bedstraw (N)  
3% Ragged Robin (N)  
3% Red Clover (N)  
2% Sorrel (N)

**100%**

Pack size 1kg

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

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

**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  
90% SRG with 10% SRWF  
85% SRG with 15% SRWF

Sowing Rate 16kg/ha  
Pack size 20kg

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





# Buffer Strip Mixtures

## BUFFER STRIPS MIXTURES

### BGM 1 with Cocksfoot

30% Creeping Red Fescue  
20% SSMG  
20% Tall Fescue  
15% Cocksfoot  
15% Timothy

**100%**

Sowing rate 20kg/ha

Pack size 20kg

### BGM 1 RC Red Clover and Cocksfoot

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

**100%**

Sowing rate 20kg/ha

Pack size 20kg

### BGM 2 no Cocksfoot

25% Creeping Red Fescue  
20% Chewings Fescue  
20% SSMG  
20% Tall Fescue  
15% Timothy

**100%**

Sowing rate 20kg/ha

Pack size 20kg

### BGM 2 RC Red Clover no Cocksfoot

25% Creeping Red Fescue  
20% Chewings Fescue  
20% SSMG  
15% Tall Fescue  
15% Timothy  
5% Red Clover

**100%**

Sowing rate 20kg/ha

Pack size 20kg

### BGM 3 with Cocksfoot and Clover

25% Creeping Red Fescue  
20% Tall Fescue  
15% Cocksfoot  
15% SSMG  
15% Timothy  
5% Birdsfoot Trefoil  
5% Small White 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 Mixture with Grass (AB15) 2 Year**  
Agreements starting on or before 1st Jan 2020

66% Late Perennial Ryegrass  
15% Red Clover  
10% Winter Vetch  
7% Birdsfoot Trefoil  
1% Yarrow  
1% Oxeye Daisy

**100%**

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

**OUTSTANDING  
PRODUCT OF THE YEAR**

*Everyone's  
talking about it!*

### Legume Fallow Mixture Flower Rich (AB15) 2 Year

Agreements starting on or after 1st Jan 2021

50% Winter Vetch  
15% Lucerne  
15% Red Clover  
10% Alsike Clover  
5% Birdsfoot Trefoil  
5% Black Medick

**100%**

Sowing rate 15 - 20kg/ha

Pack size 20kg



## FALLOW MIXTURES



### Fallow Mixture No.1

50% Late Perennial Ryegrass (T)  
35% Late Perennial Ryegrass (D)  
10% Timothy  
5% White Clover Blend

**100%**

Sowing rate 30 - 35 kg/ha

### Fallow Mixture No.2

50% Late Perennial Ryegrass (T)  
40% Late Perennial Ryegrass (D)  
10% Timothy

**100%**

Sowing rate 30 - 35 kg/ha

### Fallow Mixture No.3

55% Late Perennial Ryegrass (T)  
40% Late Perennial Ryegrass (D)  
5% White Clover Blend

**100%**

Sowing rate 30 - 35 kg/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% Late Perennial Ryegrass  
20% Festulolium  
15% Timothy  
10% SSMG  
10% Creeping Red Fescue  
10% Red Clover  
5.6% Sainfoin  
1.43% Lucerne (inoculated)  
1% Birdsfoot Trefoil  
1% Sheeps Burnet  
0.5% Ribwort Plantain  
0.25% Yarrow  
0.2% Sheeps Parsley  
0.02% Wild Carrot

**100%**

Sowing rate 32 - 37kg/ha  
Pack size 20kg

**Organic multi species mixture**  
**OP4 available on request**



### Herbal Meadow (GS4)

27% Late Perennial Ryegrass  
20% Festulolium  
11% Timothy  
10% Red Clover  
10% SSMG  
7% Cocksfoot  
5% Lucerne (inoculated)  
4.5% Sainfoin  
2% Birdsfoot Trefoil  
1% Fenugreek  
1% Perennial Chicory  
0.7% Ribwort Plantain  
0.5% Sheeps Burnet  
0.25% Yarrow  
0.05% Sheeps Parsley

**100%**

Sowing rate 30 - 35kg/ha  
Pack size 20kg

### HerbMax 1 Light Land

20% Cocksfoot  
15% Fojtan Tall Fescue Plus™  
15% Sainfoin  
10% Timothy  
10% Intermediate Perennial Ryegrass  
6% Sheeps Burnet  
5% Lucerne (inoculated)  
5% Red Clover Blend  
4% Ribwort Plantain  
3% Birdsfoot Trefoil  
2.5% Dual Purpose White Clover Blend  
2.5% Alsike Clover  
2% Sheeps Parsley

**100%**

Sowing rate 32kg/ha  
Pack size 10kg

### Mixed Herbs

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

**100%**

Sowing rate Variable  
Pack size 1kg & 5kg



### HerbMax 2 Medium to Heavy Land

16% Late Perennial Ryegrass  
15% Intermediate Perennial Ryegrass  
14% Timothy  
12% Fojtan Tall Fescue Plus™  
8% Cocksfoot  
6% Meadow Fescue  
6% Red Clover Blend  
6% Sheeps Burnet  
4.5% Ribwort Plantain  
4% Dual Purpose White Clover Blend  
3.5% Birdsfoot Trefoil  
3% Alsike Clover  
2% Sheeps Parsley

**100%**

Sowing rate 35kg/ha  
Pack size 10kg



### Rapid Gain Mixture

49% Late Perennial Ryegrass (T)  
20% Perennial Chicory  
15% Red Clover  
10% White Clover  
6% Ribwort Plantain

**100%**

Sowing rate 20kg/ha  
Pack size 20kg

### Gromore Mixture

35% Late Perennial Ryegrass (T)  
30% Ribwort Plantain  
20% Red Clover  
15% White clover

**100%**

Sowing rate 20kg/ha  
Pack size 20kg

### HerbMax 3 Conserve & Graze

20% Lofa Hybrid  
Ryegrass Plus™  
18% Late Perennial Ryegrass  
16% Intermediate Perennial Ryegrass  
14% Timothy  
8% Chicory  
8% Cocksfoot  
6% Red Clover Blend  
4% Plantain  
4% Dual Purpose White Clover Blend  
2% Alsike Clover

**100%**

Sowing rate 30kg/ha  
Pack size 10kg

## NITROGEN FIXING MIXTURES

### EFA Nitrogen Rich Mixture

76% Winter Vetch  
12% Crimson Clover  
12% Red Clover

**100%**

Sowing rate 32 - 35 kg/ha  
Pack size 20kg

### EFA Nitrogen Fixing Ley

52% Red Clover  
30% Late Perennial Ryegrass (T)  
18% Late Perennial Ryegrass (D)

**100%**

Sowing rate 22 - 25kg/ha  
Pack size 20kg





# Herbs and Legumes

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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 1kg & 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 2kg & 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 1kg & 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 1kg

## 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 1kg



## 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.

Sowing rate 85-90 kg/ha

Pack size 1kg & 25kg

Organic seed available in 25kg packs



## 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 25kg

Organic seed available in 25kg packs

## 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 1kg & 25kg

Organic seed available in 25kg packs



# Wild Bird Seed Mixtures



"This bespoke mixture provides high levels of insect activity (biodiversity) and benefits to wildlife along with a large quantity of nutritious seed for the birds. I like an open game cover that not only holds the birds but also allows them to move freely."

Tom Carter,  
North Dorset

## SPRING SOWN MIXTURES

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

Attracts Tree Sparrows

- 45% Spring Triticale
- 30% Spring Barley
- 15% Spring Wheat
- 5% White Millet
- 3% Fodder Radish
- 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

### 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.

OUTSTANDING PRODUCT OF THE YEAR

Everyone's talking about it!

### Feed & Cover Mixture (AB9)

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

100%

Sowing rate 40kg/ha  
Pack size 20kg



## ORGANIC WILD BIRD SEED MIXTURE 1

### 1 Year Spring Sown (OP2)

- 35% Organic Spring Wheat
- 35% Organic Spring Barley
- 20% Spring Triticale
- 5% White Millet
- 3% Fodder Radish
- 2% Red Millet

100%

Sowing rate 40kg/ha Pack size 20kg

## 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

100%

Sowing rate 40kg/ha Pack size 20kg



# Wild Bird Seed Mixtures

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

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ENVIRONMENTAL

## 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% Perennial 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% White Mustard  
4% Forage Rape  
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) 1 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  
15% Winter Barley  
15% Winter Wheat  
8% Fodder Radish  
6% Winter Vetch  
5.3% Gold of Pleasure  
5% Birdsfoot Trefoil  
5% Lucerne (inoculated)  
5% Crimson Clover  
5% Kale  
2.5% Red Clover  
2% Phacelia  
0.4% Oxeye Daisy  
0.4% Wild Carrot  
0.4% 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

Other mixtures that also may be suitable for AB9: Decoy Mixture – pg 35  
Broadshot – pg 35



# Scottish Rural Development

## Agri-Environment Climate Scheme (AECS)



### AECS Options that require Seed

#### Wild Bird seed for Farmland Birds

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

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

BGM 4 with wildflowers, legumes and fine grasses  
Pages 5, 6 & 7

#### Creation of Species Rich Grassland

Pages 6 & 12

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

Pages 12, 16 - 19

#### Forage brassicas for Farmland Birds

Pages 37 - 43

### AECS Green Cover Crops

#### Stubbles followed by Green Manure in an arable rotation

Where winter cereals are sown after green cover

#### SPRING GREEN COVER MIXTURE

60% Buckwheat  
30% Crimson Clover  
10% Egyptian Clover  
**100%**

Sowing rate 12-15 kg/ha  
Pack size 20 kg  
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 25 kg/ha  
Pack size 25 kg  
Alternative mixtures N-Rich Cover Mixture

#### OVER WINTER GREEN COVER GRASS MIXTURE

85% Italian Ryegrass  
15% Red Clover  
**100%**

Sowing rate 25 kg/ha  
Pack size 25 kg  
Alternative mixtures N-Rich Cover Mixture

### NORTHERN SPECIES RICH GRASS & 15% NATIVE WILD FLOWERS

25% Creeping Red Fescue  
15% SSMG  
10% Crested Dogstail  
10% Hard Fescue  
10% Meadow Fescue  
10% Sheeps Fescue  
5% Browntop Bent  
15% Native Wild Flowers UK Provenance  
**100%**

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



(N) = UK Native Seed

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.gov.scot/topics/farmingrural/agriculture](http://www.gov.scot/topics/farmingrural/agriculture)

\*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.



# BPS Scotland - Greening

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

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ENVIRONMENTAL

### 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. After the 16th July, plan ahead for 2022 and sow a late heading mixture after 16th July.

EFA  
Weighting  
1.0

Fallow  
Mixture  
1, 2 & 3

PAGE 7

BGM 1  
&  
BGM 1 RC

PAGE 7

BGM 2  
&  
BGM 2 RC

PAGE 7

BGM 3  
&  
BGM 4

PAGE 6 & 7

WBS  
1, 2 & 3

PAGE 10

Northern  
WBS 1

PAGE 11

Farmland  
Wild Bird  
Mixture

PAGE 11

### 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  
Weighting  
1.5

BGM 1  
&  
BGM 1 RC

PAGE 7

BGM 2  
&  
BGM 2 RC

PAGE 7

BGM 3

PAGE 7

BGM 4

PAGE 6

Northern  
WBS 1

PAGE 11

WBS  
1, 2,  
3 & 4

PAGE 10

Any  
Grass  
Mixture

### 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  
Weighting  
0.3

Any Recognised  
Grass Mixture

Italian  
Catch Crop  
Mixture

### 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  
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 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  
Weighting  
1.0

Alfalfa

PAGE 9 & 17

Birdsfoot  
Trefoil

PAGE 9

Peas & Beans

Red & White  
Clover

PAGE 9 & 17

Vetch

### EFA Hedges (EFAH)

### EFA Agro-Forestry (EFAAF)

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

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.

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

15

BIOGAS

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 acre 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. It can be planted in the autumn after a beet or maize crop and be 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

Contact us for more information





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

# Green Manuring

**Green Manuring** 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 green manures to become weeds in their own right. These problems can be overcome with thought and measured usage, and the benefits to future crops cannot be dismissed lightly.

Green manures 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 green manures.** Different crops bring different benefits and the final choice is influenced by many considerations. If the most is to be made of green manuring crops, it is important that they are carefully integrated into the crop rotation and proper attention paid to their husbandry.

Green manures 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
Short Term Crops Spring/Summer Sowing & Summer/Autumn Incorporation									
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, 5kg & 10kg	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 & 25kg	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	1kg & 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.
Alsike Clover	25kg	5 - 7.5	Untreated	Spring	Autumn	Branched taproot Deep rooting	Most types	Fixing	Less biomass than red and white clover but better adapted to wet, acid soils and cooler conditions. Requires shallow sowing and firm seedbed.
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 biomas 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 biomas, 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/ Japanese Oats (Avena strigosa)	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.
Over Winter Crops Autumn Sowing & Spring Incorporation									
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.
Italian Ryegrass	25kg	35 - 38	Untreated & <b>Organic</b>	Autumn	Spring	Extensive, fibrous root system	Diploids better in wet areas and tetraploids in drier	Storing	As with forage rye, produces high yields of biomass. Good root system for improving soil structure. If seed heads are produced, crop must be cut before seed is shed to prevent infestation of following crop. Good 'mopper-up' of excess soil nitrogen.
Cocksfoot	15kg - 20kg	5 - 7.5	Untreated & <b>Organic</b>	Spring / Autumn	Autumn - Spring	Thick and fibrous with large energy reserves	Dry, free-draining	Storing	When undersown at a low seed rate into winter wheat, cocksfoot is an excellent soil improver for drought-prone soils.
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.
Longer Term Crops									
Lucerne Pre-inoculated	25kg	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	1kg & 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	1kg & 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	12.5 - 15	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

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# Green Manuring Crops

## INCORPORATION OF GREEN MANURE

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 green manure 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 RADISH

A rapid growing crop that produces a large amount of biomass. It has the ability to reduce nematodes and is also an excellent weed suppressor. It 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 it captures and stores nutrients from deep in the soil over the winter period, which are released in the spring for the next crop. It 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

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

Club  
Root  
Tolerant

**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. It is a fast growing and good weed suppressor. Has bio fumigation properties but not to the same extent as brown mustard. It 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  
**Treatment** Untreated  
**Organic seed available in 25kg packs**

### BROWN MUSTARD

A fast growing green manure crop with bio fumigation properties, i.e. it suppresses soil-borne pests and diseases. It is an 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  
**Treatment** Untreated

### FODDER RADISH (OIL RADISH)

A fast growing cover crop, its speed of establishment aids weed suppression. It 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  
**Treatment** Untreated  
**Organic seed available in 25kg packs**

### BLACK OATS / JAPANESE OATS - AVENA STRIGOSA

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  
**Treatment** Untreated

### 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 it to run to seed as this will lock up available nitrogen.

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

### AVALON LEAFY TURNIP

Avalon 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. Avalon also has a very high dry matter yield and excellent resistance to Alternaria.

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

### ROCKET LETTUCE

This crop flowers rather late with an average early vigour. Rocket lettuce is like oil radish; a dual purpose in regards to diseases and pest control. This crop is suitable as a biological controller of cyst nematodes *H. schachtii* and *betae*, and fights root knot nematodes *M. chitwoodi* and *incognita*. This, combined with high levels of glucosinolate, makes Rocket a good biofumigant.

**Sowing rate** 10kg/ha  
**Pack size** 5kg  
**Treatment** Untreated (Limited)

## FOR SPRING SOWING AND 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, whilst the legumes with their deeper root system will improve water filtration through the soil structure whilst also providing increased soil nitrogen.



# Green Manuring Mixtures

Growing a Cover Crop is an effective way of erosion control

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GREEN MANURING

Our range of green manure 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.

## 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 scavenge most of the nitrogen left by the previous crop.

80% Forage Rye  
20% Winter Vetch

100%

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

## 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  
Untreated

## REVIVAL COVER MIX

Oats, white mustard and phacelia combined make a very effective catch crop. White mustard and phacelia are very fast growing and good at suppressing weeds, they are also easy to break down and incorporate into the soil because they are less frost hardy. The oats provide good ground cover further helping with weed suppression and produce a large quantity of organic matter.

90% Oats  
5% White Mustard  
5% Phacelia

100%

Sowing rate 30 - 50kg/ha  
Pack size 25kg & 500kg  
Untreated

## BOOST MIX

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

100%

Sowing rate 6kg/ha  
Pack size 5kg  
Untreated

## 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  
Untreated

## KWIK FIX

80% Fodder Radish  
20% White Mustard

100%

Sowing rate 12 - 15kg/ha  
Pack size 5kg  
Untreated

## 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% Winter Vetch  
7% Fodder Radish  
3% White Mustard

100%

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

## 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 taproots. Both types of roots help to soak up and retain any residual nutrients which may have been left behind by the previous crop.

30% Spring 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  
Untreated

## LATE COVER MIX

60% Forage Rape  
28% Stubble Turnips  
7% White Mustard  
5% Fodder Radish

100%

Sowing rate 12 - 15kg/ha  
Pack size 5kg  
Untreated






**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
Game Cover Crops																
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
Brassicas																
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
Avalon Leafy Turnip		29	10kg & 25kg	✓			5 - 7.5kg	3 - 6kg	Spring / Early Autumn	Autumn / Early Winter	1 Season	1 - 2	Various	110	55	55
Texsel Greens		29	2kg	✓			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
Millets / Grasses																
Giant Sorghum		30	10kg	✓				30kg	May - June	September - February	1 Season	2.5 - 4	45 - 50	100	50	120
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
Millets		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
Game Cover Crops																	
Sunflowers	Untreated		32	10kg	✓	✓	✓		12kg	April - June	July - November	1 Season	4	75	Ensure adequate P but very little N		
	Treated		32	5kg	✓	✓	✓		12kg	April - June	July - November	1 Season	4	28	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	✓		✓	12kg+	12kg	April - June	Autumn	1 Season	1 - 2	15 - 20			
Gold of Pleasure (Camelina)	✓		33	5kg	✓	✓		12kg+	12kg	April - May	September - December	1 Season	1	8 - 18	40	75	65
Phacelia	✓		33	2kg & 5kg	✓		✓	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	✓			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	2kg	✓		✓	5kg+	5kg	Spring or Early Autumn	All Year	5yr+	1	15 - 20	100	50	120
Yellow Blossom Clover			34	2kg	✓		✓	6kg+	6kg	April - June	All Year	1 - 2yr	0.5	75	30	0	0
Game Cover Mixtures																	
Feed and Cover Mixture			10	25kg	✓	✓	✓		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	5kg	✓			6kg+	6kg	June - September	September - February	1 Season	1 - 2	45 - 50	100	50	50
Late Cover Mixture			19 & 36	5kg	✓			15kg+	12kg	Spring / Autumn	September - February	1 Season	1 - 2	20 - 35	55	28	28
Kwik Fix			19 & 36	5kg	✓			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).





# Pests & Diseases in Brassicas & Maize

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## 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)



# Game Cover Chemicals

## KEY

Considered 'crop safe' when correctly applied to healthy crop in good condition

Considered to pose a risk to crop health, use with caution

No information available

Rates are based on L/ha unless otherwise stated. This is not a complete list of products which can be used on these crops. Always consult a BASIS qualified advisor.

The chart below was kindly supplied by Agrovista UK Ltd

	STALE SEEDBED	PRE EMERGENCE HERBICIDES ONLY												POST EMERGENCE HERBICIDES																			
	ROUNDUP VISTA PLUS	ANTHEM (MAPP 15761)	CENTUM 360CS (MAPP 17327/18719)	CIRRUS CS (MAPP 18721)	SPINNAKER (MAPP 18855)	GANIT 36 CS (MAPP 18718)	CALLISTO (MAPP 12323)	CRYSTAL (MAPP 13914)	HURRICANE (MAPP 16027)	KERB FLO 2.1 L/HA (MAPP 13716)	BUTISAN S (MAPP 16959)	SPRINGBOK (MAPP 16786)	STOMP AQUA (MAPP 14664)	AJAS SX (MAPP 18602)	ANTHEM (MAPP 15761)	BASAGRAN SG (MAPP 08360)	BUTISAN S	CALLISTO (MAPP 12323)	CRYSTAL (MAPP 13914)	SPINNAKER (MAPP 18855)	DOW SHIELD 400 (MAPP 14984)	EAGLE (MAPP 16490 or MAPP 18902)	FALCON (MAPP 16459)	HILOAD MIRCAM (11930)	HURRICANE (MAPP 16027)	KERB FLO 2.1 L/HA (MAPP 13716)	PEAK (MAPP 15521)	STARANE H-LOAD HL (MAPP 16557)	STARANE XL (MAPP 10921)	STOMP AQUA (MAPP 14664)	THISTLEX (MAPP 16123)	VIVENDI 200 (MAPP 16966)	
Borage	YES	NO	YES	YES		YES		NO			YES		NO		NO	NO	YES		NO		YES	YES		NO			NO	NO	NO	NO	YES	YES	
Buckwheat	YES	NO						2.0 L/HA		1.7 L/HA		YES				NO	YES		2.0 L/HA		YES	YES		NO		YES	NO	NO	NO	NO	YES	YES	
Canary Grass	YES	YES						YES			NO					NO	YES		2.0 L/HA		YES	YES	YES	YES			NO	YES	YES	2.9 L/HA	YES	YES	
Chicory			YES	YES		YES										NO	YES		YES		NO	YES		NO			NO	NO	NO	2.2 L/HA		NO	
Fodder Radish	YES	NO	YES	YES		YES		NO		1.7 L/HA			NO		NO	NO	YES		YES		YES	NO		NO		YES	NO	NO	NO	NO	NO	YES	
Gold of Pleasure	YES							2.0 L/HA		1.7 L/HA	YES	YES				NO	YES		YES			YES	NO		NO		YES		NO	NO	YES	NO	YES
Kale	YES	NO	YES	YES		YES				1.7 L/HA	YES	YES	NO		NO	NO	YES		NO		YES	NO	YES	NO		YES	NO	NO	NO	NO	YES	YES	
Linseed	YES	YES	NO	NO		NO						YES				NO	NO	YES	NO	NO		YES	YES	YES	NO		YES	NO	NO	2.2 L/HA		YES	
Maize	YES	YES	YES	YES		YES	YES		YES		NO	NO	YES			YES	YES		YES			YES	YES	NO	YES		NO	YES	YES	YES	YES	YES	
Red Millet	YES	YES					NO				YES		MAX 2.2			YES	YES		YES			YES	YES		YES		YES	NO	YES	2.9 L/HA	YES	YES	
Reed Millet	YES						NO			YES			NO			YES	YES					YES	YES		YES				NO	YES		YES	YES
Ambush Millet Mix	YES						NO			1.7 L/HA	YES		MAX 3.3			YES	YES		YES			YES	YES	NO	YES		YES	NO	YES				YES
White Millet	YES		YES	YES		YES	NO			YES	YES		YES			NO	YES		YES			YES	YES	NO	YES		YES	YES	YES	3.3 L/HA	YES	YES	
Mustard	YES		NO	NO		NO		YES		1.7 L/HA	YES					NO	NO	YES		NO		YES	NO		NO		YES	NO	NO	NO	NO	YES	YES
Phacelia	YES	NO	YES	YES		YES		NO			NO		NO			NO	NO	YES		NO		YES	YES		NO		NO	NO	NO	NO	NO	YES	YES
Quinoa	YES	NO	NO	NO		NO		NO		1.7 L/HA	YES	NO	NO			NO	NO	NO	NO			YES	NO		NO		YES	NO	NO	NO	NO	NO	YES
Sorghum	YES		YES	YES		YES		YES		YES	NO	NO				NO	YES		YES		YES	YES		YES			YES	YES	NO	3.3 L/HA	YES	YES	
Stubble Turnip	YES	NO	NO	NO	NO	NO	NO			1.7 L/HA	YES		NO			NO	NO	YES			NO	YES	NO	YES	NO		YES	NO	NO	NO	NO	YES	YES
Sunflower	YES	YES	YES	YES		YES	NO			1.7 L/HA						NO	NO	NO		NO		NO	NO	YES	NO		YES	NO	NO	NO		NO	NO
Sweet Clover	YES		YES	YES		YES		2.0 L/HA		1.7 L/HA	YES					NO	YES		2.0 L/HA				YES		NO		YES	NO	NO	NO	2.2 L/HA		
Texsel Greens	YES						NO	YES								NO	NO	YES	2.0 L/HA			YES	NO		NO		YES	NO	NO	NO	NO	NO	YES
Triticale	YES	YES	YES	YES	YES	YES	NO	YES	YES	NO	NO	YES	YES						YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	YES	YES	YES	YES	

DISCLAIMER: In some cases information is based on limited data so should be used with caution. EAMUS (formerly SOLAS) and LTAU off-label uses are at Growers Own Risk.

Dow Shield, Thistlex & Vivendi contain Clopyralid which can remain in plant residues and affect following crops - ensure full incorporation of crop residues before planting treated areas with susceptible crops. When used on game cover crops the seed or any part of the treated plants must not be used for human or animal food or feed (except game birds).

Agrovista & DLF cannot accept any responsibility for any loss, damage or accident arising from the use of information in this report. Always read the label and the associated EAMU document prior to any application. Products are used entirely at the growers own risk.

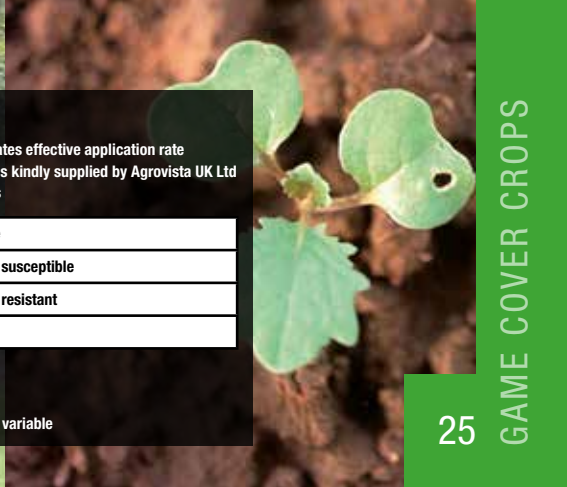




Litre quantity indicates effective application rate  
The chart below was kindly supplied by Agrovista UK Ltd  
( ) = Based on trials

	Susceptible
	Moderately susceptible
	Moderately resistant
	Resistant

\*\*\* control can be variable

[illegible]

DISCLAIMER Agrovista & DLF cannot accept any responsibility for any loss, damage or accident arising from the use of information in the report.  
Use Pesticides safely and always follow manufacturers guidelines.



# 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.

## ULTRA EARLY

### EMMERSON

- Setting new standards for ultra early maize
- BSPB/NIAB Descriptive List 2021 for both Favourable and Less Favourable Sites
- Suitable for anaerobic digestion
- Ultra early short-season hybrid for earlier harvest or later sowing options



## VERY EARLY

### PEREZ

- Gain higher yields faster!
- BSPB/NIAB Descriptive List 2020 for both Favourable and Less Favourable Sites
- Proven consistent performance
- Suitable for anaerobic digestion



## EARLY MAINCROP

### MARCAMO

- BSPB/NIAB Descriptive List for both Favourable and Very Favourable Sites
- Fills the clamp!
- Very high yields of dry matter and energy
- Suitable for anaerobic digestion



**Individual technical sheets available for each variety.**

These can be found at

[www.dlf.co.uk/maize-and-arable.aspx](http://www.dlf.co.uk/maize-and-arable.aspx)





# 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\*



## MAIZE BLEND



Maize Blend is a mixture of varieties with varying maturity. This will give differing rates of maturity as cobs ripen at different times, thus providing cover throughout the whole of the shooting season.

**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 KALE

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

## CORSA



A high yielding, winter hardy giant kale variety with good aphid tolerance. Corsa has been shown to maintain a higher leaf percentage and stem quality than other traditional giant kales. Its soft stem, compared with other giant type kales, increases palatability and stock utilisation resulting in the improved performance of both sheep and cattle. Corsa delivers a high volume of high quality forage throughout the season.

**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



## ANGLIAN GOLD



Anglian Gold is a low growing kale variety tailored to the game cover sector. Its dense, leaf-rich canopy, combined with good winter hardiness, makes it an option for providing plenty of cover throughout the season.

**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% Corsa

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

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## 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

## AVALON LEAFY TURNIP



Avalon 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. Avalon also has a very high dry matter yield and excellent resistance to Alternaria.

**Sowing rate** 5 - 7.5kg/ha

**Pack size** 10kg & 25kg

**Treatment** Untreated



Avalon Leafy Turnip

## FORAGE RAPE

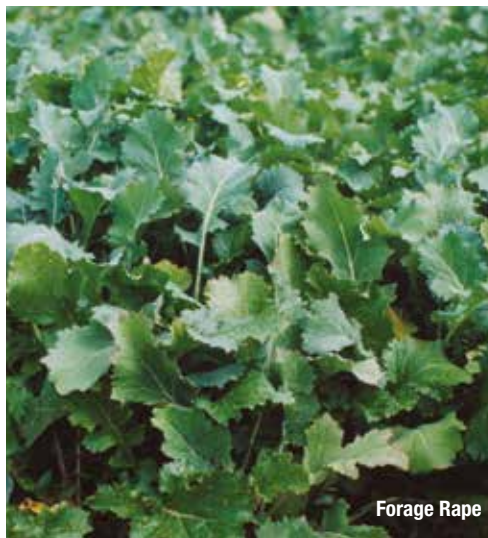


Forage Rape is particularly useful in that it can be used as a rescue or catch crop, continuing until the New Year when it flowers and goes to seed. A well grown crop with adequate spacing between rows will provide good cover for holding, driving and feeding. It is largely unaffected by frost and wet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

**Sowing rate** 6 - 10kg/ha

**Pack size** 10kg & 25kg

**Treatment** Untreated



Forage Rape

## 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



Spitfire

## TEXSEL GREENS



(*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** 2kg

**Treatment** Untreated



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



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

## 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

## GIANT SORGHUM



Giant Sorghum is a sorghum x sudan grass hybrid standing approximately 2 metres tall and therefore is extremely useful as a windbreak to protect more vulnerable crops. Its deep rooting system enables it to withstand drought conditions. Useful as a flushing crop even though it is prone to lodging later in the season.

**Sowing rate** 30kg/ha

**Pack size** 10kg

**Treatment** Untreated (Not available for 2021)



Giant Sorghum



Over n' Under Sorghum Mixture

## 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

**N.B.** Height of Sorghum may vary depending on seasonal and management variations.



# Millets

Red Millet

White & Red Millet

Millgame Millet Mix

White Millet

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## 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



Japanese 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



Hybrid 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 Untreated

5kg Fungicide treated



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

Organic seed available in 25kg packs (Limited)



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

**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

**Treatment** Untreated



# Game Cover Crops

Phacelia

White Mustard

Brown Mustard

Buckwheat

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## 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, 5kg & 10kg

**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 & 25kg

**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).

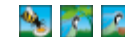
**Sowing rate** 6 - 17kg/ha

**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 7).

**Sowing rate** 12kg/ha

**Pack size** 5kg

**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** 2kg

**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** 1kg

**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% Dwarf 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% Dwarf 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% Goldeneye Kale  
10% White Millet  
10% Phacelia  
8% Forage Rape  
8% Red Millet  
5% Japanese Reed Millet  
4% Quinoa  
4% Crimson Clover

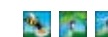
100%

**Sowing rate** 15kg/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

## 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

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 5kg  
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.

60% Forage Rape  
28% Stubble Turnips  
7% White Mustard  
5% Fodder Radish

100%

Sowing rate 12 - 15kg/ha  
Pack size 5kg  
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 5kg  
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% Texsel Greens

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	2+	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	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	5kg	8.5	6	mid Apr-mid Sept	Jul-Dec	1-2	n/a	60	50	50	-	-	-	-	-	-
Winter Graze Mixture	43	5kg	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 Avalon).

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

### VOLLEND (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

Source: NIAB

## 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

### AVALON LEAFY TURNIP

Avalon 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. Avalon also has a very high dry matter yield.

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

## 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 regrowth 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.

"I put my Angus X bullocks into this crop of Zoom in early October and they got 6 weeks of tremendous grazing off it. It was chest high and once they got used to it, they just loved it. There are some regrowth shoots now so I might get the sheep over it before I reseed with grass in the spring."

Iain McKenzie  
Doll, Brora, Sutherland, Scotland





# 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 & Pelleted Untreated seed (Limited)

## Fodder Beet Yield and Feed Quality

Average dry matter yield	17 - 22 tonnes/ha
Average fresh yields	95 - 110 tonnes/ha
Crude protein	12 - 13%
Digestibility value	78D
Dry matter	12 - 19%
Metabolisable energy	12 - 12.5MJ/kg DM
Sugars in DM	65%



## ALPES

The ultimate fodder beet variety from the world leading DLF plant breeding programme. It has exceptional all round characteristics, thus ensuring less waste and more profit. Alpes benefits from large top size and has 33% of its yellow root above ground which allows for easy lifting. Good resistance to bolting.

## 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.



"This is our fourth season growing Enermax fodder beet, it has replaced potatoes in our rotation. It is grown to sell as a cash crop, harvested to order. We are very pleased with Enermax, it has healthy, vigorous growth with high yield, high dry matter and clean roots providing us with a viable option to potatoes which has widened our potential market. We have no plans to grow anything else."

C & G Moss  
Risley, Warrington

## 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.



## 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%.



OUTSTANDING PRODUCT OF THE YEAR

Everyone's  
talking about it!







# 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.

## MARIAN



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.

## RUTA OTOFTE



Ruta Otofte is a medium dry matter variety with good mildew resistance. It is a dual purpose variety suitable for fodder and culinary use with purple skin and cream coloured flesh. Ruta Otofte is a popular variety with sheep farmers.

## KENMORE



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.

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

## 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%

## CORSA



A high yielding, winter hardy giant kale variety with good aphid tolerance. Corsa has been shown to maintain a higher leaf percentage and stem quality than other traditional giant kales. Its soft stem, compared with other giant type kales, increases palatability and stock utilisation resulting in the improved performance of both sheep and cattle. Corsa delivers a high volume of high quality forage throughout the season.

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

## 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

Giles grows DLF kale to out winter heifers that he rears on contract.

The incorporation of DLF sunflowers attract a whole host of pollinators!

Giles says it brings a smile to his face and makes him feel happy, he picks the sunflowers and sells them locally to raise money for MacMillan Cancer Support.

Giles  
 Yenston, Somerset







# Root Mixtures & Arable Silage

43

FORAGE CROPS

## 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 (pre December 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

60% Forage Rape  
35% Stubble Turnip  
5% Kale

100%

Sowing rate 6 - 8.5kg/ha  
Pack size 5kg  
Treatment Untreated

### WINTER GRAZE (post Christmas 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 5kg  
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% 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% Prophet or Bluetooth Peas  
10% Spring Vetch

**Organic Oat Pro Plus No.3**  
35% Organic Spring Barley  
35% Organic Spring Oats  
30% Prophet 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.

**Spring or Winter Vetch**  
Packed in 25kg bags

**Organic Vetch**  
Packed in 25kg bags

**Lucerne (inoculated)**  
Packed in 25kg bags

**Organic Lucerne (inoculated)**  
Packed in 25kg bags

Contact us  
for more  
information

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.**



2021

# Openfield™

Seed, fertiliser, grain, storage.    

Honey Pot Lane, Colsterworth, Grantham, Lincolnshire NG33 5LY  
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