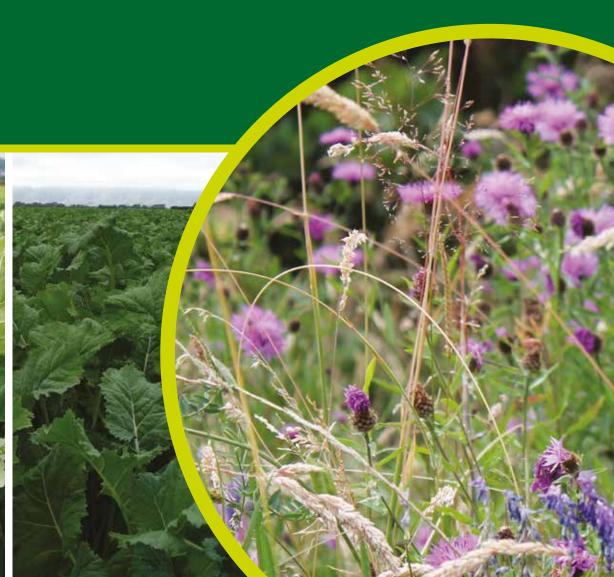
Environmental, Cover Crop and Game Cover Seeds











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

As the focus of our land use moves to sustainability and soil health, we have adapted our range to meet the needs of the market. There are new seed mixtures in our 'Soil health and conditioning' section that reflect the demand we see from our customers and hopefully will guide you to easy solutions to your cropping needs. Whatever your requirement for Stewardship, Cover crops, Game Cover or Forage, we trust that 'Your Countryside 2022' will aid your decision.

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

















For more information go to www.farmwildlife.info

WE WORK CLOSELY WITH:

Natural England, RSPB, Campaign for the Farmed Environment, Game and Wildlife Conservation Trust,













Promoting the restoration of wild plants and habitats for biodiversity,



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15











SHEEP GRAZING





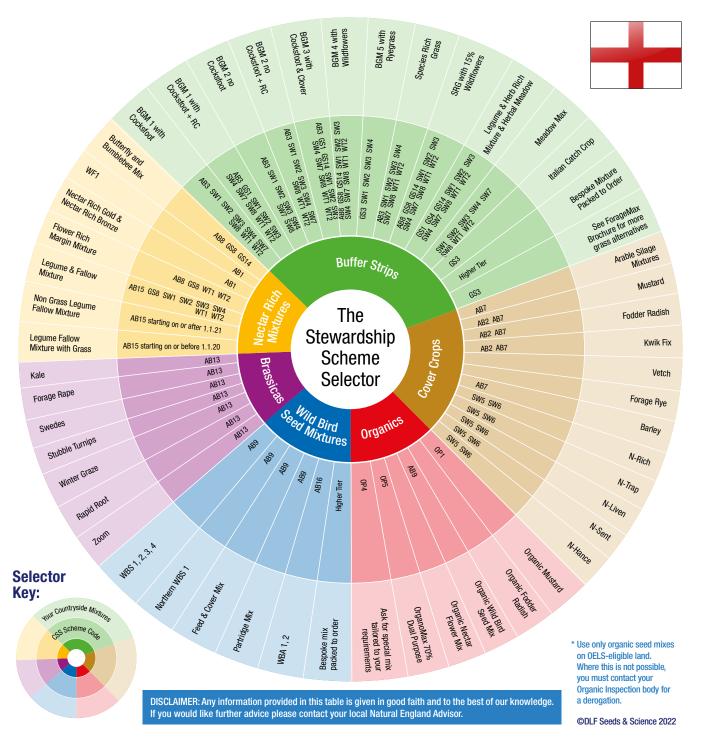
CULINARY USE

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.



Countryside Stewardship Selector

	Countryside Stewardship Scheme Description													
CSS Higher Tier	CSS Mid Tier	CSS Code	CSS Option Title											
Arable														
1	1	AB1	Nectar flower mixture											
1	/	AB2	Basic overwinter stubble											
/	1	AB3	Beetle banks											
1	1	AB7	Wholecrop cereals											
1	1	AB8	Flower-rich margins & plots											
1	1	AB9	Winter bird food											
1	1	AB13	Brassica fodder crop											
1	1	AB15	Two year sown legume fallow											
1	1	AB16	Autumn sown bumblebird mix											
Grassland														
1	1	GS1	Take field corners out of field management											
1	1	GS3	Ryegrass seed-set as winter food for birds											
1	1	GS4	Legume and herb-rich swards											
✓		GS8	Creation of species-rich grassland											
1		GS14	Creation of grassland for target features											
Organic														
1	1	0P1	Overwintered stubble											
/	1	OP2	Wild bird seed mixture											
1	1	OP4	Multi-species ley											
1	1	0P5	Undersown cereal											
Soil and Wa	ater													
1	1	SW1	4-6m buffer strip on cultivated land											
/	/	SW2	4-6m buffer strip on intensive grassland											
/		SW3	In-field grass strips											
/	1	SW4	12-24m watercourse buffer strip on cultivated land											
1	1	SW5	Enhanced management of maize crops											
✓	/	SW6	Winter cover crops											
1	/	SW7	Arable reversion to grassland with low fertiliser input											
1	1	SW8	Management of intensive grassland adjacent to a watercourse											
Wetlands														
/	1	WT1	Buffering in-field ponds and ditches in improved grassland											
/	1	WT2	Buffering in-field ponds and ditches in arable land											





NECTAR RICH MIXTURES

WF1 (AB1)

- 42% Sainfoin
- 8% Winter Vetch
- 7% Birdsfoot Trefoil
- 7% Alsike Clover
- 6% Yarrow
- 5% Red Clover
- 5% Lucerne (inoculated)
- 5% Black Medick
- 4.25% Crimson Clover
 - 2% Oxeye Daisy
- 1.5% Corn Cockle (N)
- 1.25% Musk Mallow
- 1.25% Wild Carrot (N)
- 1% Red Campion (N)
- 1% Selfheal (N)
- 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 & 5kg

(N) = UK Native Seed

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

Nectar Rich Bronze (AB1)

- 35% Sainfoin
- 35% Vetch
- 8% Alsike Clover
- 8% Crimson clover
- 5.4% Lucerne (Inoculated)
- 4% Red Clover
- 2% Birdsfoot Trefoil
- 2% Black Medick
- 0.3% Ag Yarrow
- 0.3% Black Knapweed (N)

100%

Sowing rate 15kg/ha Pack size 15kg

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 10kg

Nectar Rich Gold (AB1)

- 40% Sainfoin
- 18.5% Vetch
 - 10% Alsike Clover
- 10% Lucerne (inoculated)
 - 10% Red Clover
 - 6% Birdsfoot Trefoil
 - 4% Black Medick
 - 1% Black Knapweed (N)
 - 0.5% Yarrow

100%

Sowing rate 15kg/ha Pack size 15kg

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

NATIVE WILDFLOWER MIXTURES



- View the Colour Boost online digital brochure
- www.bit.ly/ColourB00ST



- View the Pro Flora online digital brochure
- www.bit.ly/PROflora

- Cornfield Annuals (N)
- Acid Soils (N)
- Damp Loamy Soils (N)
- Calcareous Soils (N)
- Wet Loamy Soils (N)
- Dry Loamy Soils (N)
- Hedgerow & Light Shade (N)
- Legacy Country Meadow (N)
- Heritage General Purpose (N)
- 10 General Purpose (N)
- Woodland & Heavy Shade (N)
- Water Margin & Pond Edges (N)
- Species Rich Lawn & Landscape (N)
- Tall Herb & Tussock (N)
- Pollinator (N)
- Coastal (N)
- 110 General Purpose Economy (N)

Pack size 1kg



FLOWER RICH MARGINS

Butterfly & Bumblebee Mixture (AB8)

- 15% Creeping Red Fescue
- 15% SSMG
- 10% Browntop 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% 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 (N)
- 0.5% Field Scabious
- 0.5% Selfheal (N)
- 0.5% Wild Carrot (N)
- 0.25% Field Pansy (N)

100%

Sowing rate 16kg/ha Pack size 1kg

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

BGM 4 with Wildflowers & Fine Grasses (AB8) 90% GRASSES, 10% WILD FLOWERS

- 45% Creeping Red Fescue
- 15% Chewings Fescue
- 15% Hard Fescue
- 15% SSMG
- 3.25% Sainfoin
 - 3% Vetch
 - 1% Alsike Clover
 - 1% Red Clover
- 0.5% Birdsfoot Trefoil
- 0.25% Oxeye Daisy
- 0.25% Plantain
- 0.25% Sheeps Burnet
- 0.25% Wild Carrot (N)
- 0.25% Yarrow

100%

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

Flower Rich Margin Mixture (AB8) 80% GRASSES, 20% WILD FLOWERS

- 25% Slender Red Fescue
- 25% SSMG
 - 12% Chewings Fescue
 - 10% Crested Dogstail
 - 5% Hard Fescue
 - 3.5% Winter Vetch

 - 3.25% Sainfoin
 - 3% Browntop Bent
 - 2.5% Birdsfoot Trefoil
 - 2% Black Medick
 - 2% Red Clover
 - 1.25% Oxeye Daisy
 - 1.2% Wild Carrot (N)
 - 1.2% Yarrow
 - 1.1% Black Knapweed (N)
 - 1% Plantain
 - 0.5% Musk Mallow
 - 0.25% Selfheal (N)
 - 0.25% Ladies Bedstraw

100%

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



Bumblebee Conservation Trust supporting wild pollinators on vour 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-vard 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. We can also offer tailored advice in our target areas.

Please contact

advice@bumblebeeconservation.org

SPECIES RICH WILD FLOWERS MIXTURES

Species-Rich Wild Flowers (SRWF)* Native

- 16% Black Knapweed (N)
- 15% Selfheal (N)
- 10% Birdsfoot Trefoil (N)
- 10% Black Medick (N)
- 10% Ribwort Plantain (N)
- 8% Oxeye Daisy (N)
- 8% Yellow Rattle (N)
- 6% Red Campion (N)
- 5% White Campion (N)
- 4% Wild Carrot (N)
- 3% Lady's Bedstraw (N)
- 3% Salad Burnet (N)
- 2% Sorrel (N)

100%

Pack size 1kg

Species-Rich Grass (SRG)*

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

100%

Pack size 20kg



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

95% SRG with 5% SRWF

Sowing rate 16kg/ha 85% SRG with 15% SRWF | Pack size 20kg

BUFFER STRIPS MIXTURES

BGM 1 with Cocksfoot

35% Creeping Red Fescue

25% Cocksfoot

20% Tall Fescue

15% SSMG

5% Timothy

100%

Sowing rate 20kg/ha Pack size 20kg

BGM 1 RC Red Clover and Cocksfoot

30% Creeping Red Fescue

25% Cocksfoot

20% Tall Fescue

15% SSMG

5% Timothy

5% Red Clover

100%

Sowing rate 20kg/ha Pack size 20kg

BGM 2 no Cocksfoot

27% Creeping Red Fescue

22% Chewings Fescue

22% SSMG

22% Tall Fescue

7% Timothy

100%

Sowing rate 20kg/ha
Pack size 20kg

BGM 2 RC Red Clover no Cocksfoot

27% Creeping Red Fescue

22% Chewings Fescue

22% SSMG

17% Tall Fescue

7% Timothy

5% Red Clover

100%

Sowing rate 20kg/ha Pack size 20kg

BGM 3 with Cocksfoot and Clover

27% Creeping Red Fescue

22% Tall Fescue

17% Cocksfoot

17% SSMG

7% White Clover

7% Timothy

3% Birdsfoot Trefoil

100%

Sowing rate 20kg/ha Pack size 20kg

BGM 5 with Ryegrass (GS3)

Ryegrass seed set as winter food

for birds

40% Italian Ryegrass

30% Inter. Perennial Ryegrass

30% Late Perennial Ryegrass 100%

Sowing rate 35kg/ha Pack size 20kg

LEGUME FALLOW MIXTURES FOR AB15

Legume Fallow Mixture with Grass (AB15) 2 Year

Agreements starting on or before 1st Jan 2020

66% Perennial Ryegrass

15% Red Clover

10% Winter Vetch

4% Birdsfoot Trefoil

3% Black Medick

1% Alsike Clover

1% Lucerne (inoculated)

100%

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





Non Grass Legume Fallow Mixture (AB15) 2 Year Agreements starting on or after

52% Winter Vetch

1st Jan 2021

16% Alsike Clover

16% Lucerne (inoculated)

10% Red Clover

3% Birdsfoot Trefoil

3% Black Medick

100%

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

(N) = UK Native Seed

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

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

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

ENVIRONMENTAL

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.

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

HERBAL MIXTURES

Legume & Herb Rich Mixture (GS4)

25% Perennial Ryegrass

25% Festulolium

15% Creeping Red Fescue

10% SSMG

7% Red Clover

5.6% Sainfoin

5% Timothy

3% Alsike Clover

1.93% Lucerne (inoculated)

1% Sheeps Burnet

0.5% Birdsfoot Trefoil

0.5% Plantain

0.25% Yarrow

0.2% Sheeps Parsley

0.02% Black Knapweed (N)

100%

Sowing rate 30kg/ha Pack size 20kg

Herbal Meadow (GS4)

27% Perennial Ryegrass

20% Festulolium

13% Cocksfoot

10% SSMG 7% Red Clover

6% Sainfoin

5% Timothy

5% Lucerne (inoculated)

3% Alsike Clover

1% Fenugreek

1% Perennial Chicory

0.7% Plantain

0.5% Birdsfoot Trefoil

0.5% Sheeps Burnet

0.25% Ag Yarrow

0.05% Sheeps Parslev

Organic multi species mixture OP4 available on request

Sowing rate 30kg/ha Pack size 20kg

Mixed Herbs

26% Sainfoin

23% Sheeps Burnet

20% Plantain

15% Sheeps Parsley

13% Chicory

3% Yarrow

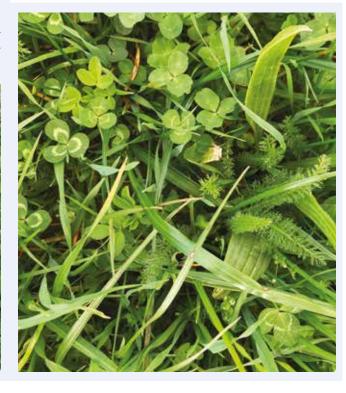
100%

Sowing rate Variable Pack size 1kg & 5kg



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.



DISCLAIMER: Stock should be introduced



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 - 90kg/ha Pack size 1kg & 25kg



LUCERNE

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

Pack size 25kg
Organic seed available in 25kg packs (Limited)

BIRDSFOOT TREFOIL

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

Pack size 1kg & 25kg



RED CLOVER

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

Pack size 1kg & 25kg
Organic seed available in 25kg packs

SPRING SOWN MIXTURES

WBS 1 (AB9) 1 Year Spring Sown

Attracts Tree Sparrows

40% Spring Triticale

28% Spring Barley

15% Spring Wheat

10% Fodder Radish

5% White Millet

2% Red Millet

100%

Sowing rate 40kg/ha Pack size 20kg



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

Bespoke mixtures can be packed to

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.

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



1 Year Spring Sown (OP2)

40% Organic Spring Wheat

30% Organic Spring Barley

13% Spring Triticale

10% Fodder Radish

5% White Millet

2% Red Millet

100%

Sowing rate 40kg/ha Pack size 20kg

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





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 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

Northern WBS 1 (AB9) 1 Year Spring Sown

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

100%

Sowing rate 40kg/ha Pack size 20kg

Northern WBS 2

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

100%

Sowing rate 40kg/ha Pack size 20kg

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

25% Buckwheat

Farmland (Wild) Bird Seed Mixture

45% Linseed

Non Cereal

- 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.

AUTUMN SOWN MIXTURES

WBA 1 (AB16) 2 Year Autumn Sown

- 25% Winter Triticale
- Winter Wheat
- Winter Barley
- Vetch
- Fodder Radish
- Forage Rape **Gold of Pleasure**
- Lucerne (inoculated)
- Alsike Clover

- Birdsfoot Trefoil Crimson Clover
- 2% Red Clover

100%

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

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

- 25% Winter Triticale
- 21% Winter Wheat
- 20% Winter Barley
- Fodder Radish
- Vetch
- Crimson Clover 5%
- 5% Kale
- 3.4% Gold of Pleasure
- 3% Lucerne (inolculated)
- 1% Birdsfoot Trefoil
- Phacelia
- Red Clover
- 0.2% Black Knapweed (N)
- 0.2% Oxeye Daisy 0.2% Yarrow
- 100%

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

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 & 12

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

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.

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 - 15kg/ha Pack size 20kg

Alternative mixtures Annual Nectar Mixture and Kwik Fix

Where winter cereals are sown after green cover

OVER WINTER GREEN COVER RYE MIXTURE

85% Forage Rye 15% Red Clover

100%

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

OVER WINTER GREEN COVER GRASS MIXTURE

85% Italian Ryegrass 15% Red Clover

100%

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

BGM 6 GRASS MARGINS, WATER MARGINS & BEETLE BANKS

45% Strong Creeping Red Fescue

15% Chewings Fescue

9% SSMG

9% Cocksfoot

6% Hard Fescue

5% Sainfoir

5% Winter Vetch

5% Willer vetc

1.5% Alsike Clover

1% Bentgrass

1% Red Clover

1% Plantain

0.5% Sheeps Parsley

0.5% Sheeps Burnett

0.25% Birdsfoot Trefoil

0.25% Yarrow

100%

Sowing rate 20kg/ha Pack size 20kg

NORTHERN SPECIES RICH GRASS & 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 - 20kg/ha Pack size 20kg

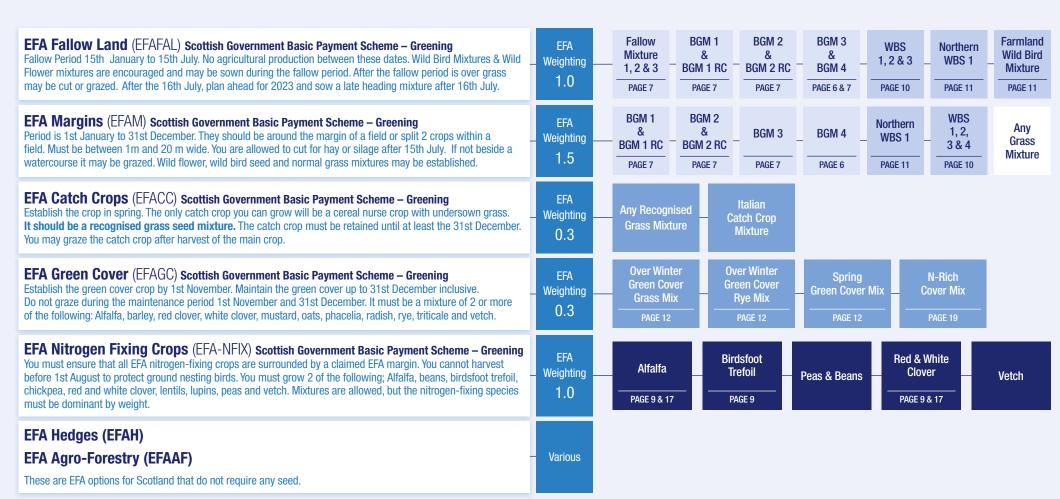


(N) = UK Native Seed

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.





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.

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



Cover Crops can bring many advantages to the farmer by adding organic matter to the soil, increasing biological activity, improving soil structure, reducing erosion, increasing the

Growing

a cover crop

is a very effective

way of controlling

nematode

populations

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

supply of nutrients available

to plants (particularly by

system by fixation), reducing

leaching and encouraging

adding nitrogen to

weed suppression.

FOR SPRING SOWING & SUMMER INCORPORATION

Spring sown, summer crops are usually annual crops that as a rule do not tolerate frost. They are guick 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.

Cover Crops and Soil Health

Cover Crops not only improve soil status, composition and nutrient balance but provide a basis for a more environmentally friendly approach to modern farming. We need to focus our minds on the twin problems of high artificial fertiliser prices and the soil's need for basic nutrients with these being available in a more sustainable form. A wide range of plant species can be used as soil conditioners. Different crops

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

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

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

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

NEMATODES IN UK FARMING

ROOT KNOT NEMATODES

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

CYST NEMATODES

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

LESION NEMATODES

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

STUBBY ROOT NEMATODES

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

STEM NEMATODES

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

THEIR EFFECT ON AGRICULTURAL CROPPING

Nematodes behave in different ways:

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

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

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

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

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

Crop	Pack size	Av sowing rate kg/ha	Treatment type	Sowing dates	Incorporation period	Root type/depth	Soil type	Nitrogen Fixing or Storing Plant	Useful information and growing tips
Short Term C	rops	Spring/Summ	er Sowing &	Summer/Au	tumn Incorporat	ion			
White Mustard	10kg & 25kg	12 - 17	Untreated & Organic	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 & Organic	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 & Organic	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 & Organic	Spring	Summer - Autumn	Taproot with fibrous branch roots	Prefers loam, will tolerate poor soils as long as alkaline and free draining	Fixing	Very attractive to insects. Excellent weed suppressor. Biomass degrades quickly into soil. Will over-winter in Southern England for autumn sowing/spring incorporation. Shade tolerant.
Linseed	25kg	60	Untreated	Spring - Summer	Autumn - Winter	Taproot with fibrous branch roots	Most types	Storing	Easy to establish with thin stems, attractive blue flowers and a thin tap root with fine branches off it. Not frost hardy, but does stand through the Winter.
Camelina / Gold of Pleasure	5kg & 25kg	12	Untreated	Spring - Autumn	Autumn - Spring	Tap and branch roots	Most types	Storing	Fast to establish and mature, can cope with poorer soils. Good resistance to pest & disease incidence and an excellent nectar source for bees. Medium biomass that allows other species room to grow.
Fodder Radish	10kg & 25kg	10 - 20	Untreated & Organic	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	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 Sowi	ng & Spring	Incorporatio	n				
Forage Winter Rye	25kg & 500kg	90 - 150	Untreated	Autumn	Spring	Extensive, fibrous root system	Grows well on light, sandy, free-draining soils	Storing	Produces large amounts of green material. Excellent nitrogen scavenger and for the prevention of nitrate leaching during winter months. Do not allow to run to seed as this will 'lock-up' available nitrogen. Very hardy.
Forage Rape	10kg & 25kg	6.5 - 10	Untreated & Organic	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 & Organic	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 & Organic	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 & Organic	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 & Organic	Spring - Early Autumn	Autumn - Spring	Large, strong taproot	Wide range, avoid poorly drained, acid soils	Fixing	Aggressive plant, does not release N until crop is ploughed in. Shorter term than white clover. Good for improving and aerating soil structure & useful weed suppressor. Ensure fine, firm seedbed.
Yellow Blossom Clover	2kg & 25kg	6	Untreated	Spring	Summer - Autumn	Long taproot	Prefers poor soil and dry conditions. Dislikes wet, heavy ground	Fixing	Biennial. Quick to establish and grows vigorously. Improves soil structure. Plough in before flowering and before stems become woody. Attractive to bees and other insects if allowed to flower.

DAIKON (TILLAGE) 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.

GREEN MANURING

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



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

WHITE MUSTARD

Popular as a green manure crop. A relatively inexpensive and highly versatile cover crop either sown alone or as a companion to other species. 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 Organic seed available in 25kg packs

BROWN MUSTARD

A fast growing green manure crop with bio fumigation properties, i.e. it suppresses soilborne 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

CRIMSON CLOVER

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

BERSEEM CLOVER

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

WHITE CLOVER

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

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 Organic seed available in 25kg packs

BLACK OATS

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

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

FORAGE RYE

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

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

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



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

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

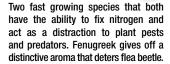
6% Gold of Pleaseure

5% Phacelia

100%

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

N-SCENT COVER MIX



50% Egyptian Clover 50% Fenugreek

100%

Sowing rate 10kg/ha Pack size 25kg

N-LIVEN COVER MIX

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

60% Winter Vetch

20% Crimson Clover

10% Linseed

10% Phacelia

100%

Sowing rate 15kg/ha Pack size 25kg

N-HANCE COVER MIX

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

60% Forage Rye

30% Winter Vetch

7% Fodder Radish

3% White Mustard

100%

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

N-RICH COVER MIX

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

N-TRAP COVER MIX

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

65% Buckwheat 35% Egyptian Clover

100%

Sowing rate 10kg/ha Pack size 25kg

N-RETAIN COVER MIX

A balanced mixture that contains fast growing species which produce large amounts of biomass. The species used in the mixture offer a wide range of rooting depths some having a fibrous root system and others producing long 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

LIVING MULCH

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

Sowing rate 4kg/ha Pack size 25kg

RESCUE MIX

50% Buckwheat

15% Fodder Radish

15% White Mustard

10% Gold of Pleasure

10% Brassica Carinata

100%

Sowing rate 12kg/ha Pack size 10kg

BOOST MIX

70% Brassica Carinata

10% Hybrid Brassica

10% Fodder Radish

10% Brown Mustard

100%

Sowing rate 6kg/ha Pack size 10kg

KWIK FIX

80% Fodder Radish 20% White Mustard

100%

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

LATE COVER MIX

75% Forage Rape

14% White Mustard11% Fodder Radish

100%

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

Seed untreated unless specified otherwise

horwico

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	Pack Size	Cov Feed	er / Crop	Nectar	Average So per He		Sowing Date	Utilisation Period	Duration of the	Average Drill	Average Row		ested Gu bed Fer (kg) ha	tiliser 🥊
	20	No.	Size	C	Broadc		Broadcast	Drill	Guide		Crop	Depth cm	Width cm	N	Р	K
Game Cover Crops															-	
Maize		27	40,000/ 50,000 seeds	1	1			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	ril - June September - March		1 - 2	50	100	50	120
Jupiter Leafy Turnip		29	10kg & 25kg	✓			5 - 7.5kg	3 - 6kg	Spring / Early Autumn	Autumn / Early Winter	1 Season	1 - 2	Various	110	55	55
Brassica Carinata		29	2kg	1			5 - 7.5kg	6kg	April - August	September - January	1 Season	1 - 2	Various	110	55	55
Forage Rape		29	10kg & 25kg	1			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																
Sorghum - Intermediate & Dwarf		30	10kg	1				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	✓	1		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	/	A BOLL		Marine Inc.	6kg	April - June	All Year	5 Years+	1.5	70 - 90	55	28	28

Crop	Organic Option	Page	Pack		er / Crop	Nectar	Average So per He		Sowing Date	Utilisation Period	Duration of the	Average Drill	Average Row	Seedl	ested Gu bed Fer (kg) ha	tiliser
	Orc Op	No.	Size	C	C		Broadcast	Drill	Guide		Crop	Depth cm	Width cm	N	Р	К
Game Cover Crops																
Sunflowers		32	10kg	✓	✓	✓		12kg	April - June	July - November	1 Season	4	75		sure adequ ut very litt	
Quinoa		32	2kg	/	1		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	1		1	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	1	33	10kg & 25kg	1	✓	1	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	1			5 - 7.5kg	2.5 - 7.5kg	Spring - Autumn	Autumn / Spring	1 Season	1 - 2.5	20 - 35			
Fodder Radish	✓	33	10kg & 25kg	✓	✓	1	8kg	6kg	Spring - Autumn	July - December	1 Season	1 - 2.5	25 - 30	40	15	20
Linseed		33	25kg	1	✓	1		60kg	April - May	September - February	1 Season	1 - 2	8 - 18	40	75	65
Perennial Chicory		34	2kg	1		1	5kg+	5kg	Spring or Early Autumn	All Year	5yr+	1	15 - 20	100	50	120
Yellow Blossom Clover		34	2kg	1		✓	6kg+	6kg	April - June	All Year	1 - 2yr	0.5	75	30	0	0
Game Cover Mixtures																
Feed and Cover Mixture		10	25kg	/	1	1		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	/	/	1	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	/	/	1	15kg	15kg	Spring	September - February	1 Season	1 - 2	15 - 25	80	40	96
Four Ten Mixture		35	14kg	/	1			35kg	Spring	September - February	1 Season	6	75	185	90	220
Sundown Mixture		35	13kg	/	1	/		32kg	April - June	September - February	1 Season	5 - 6	75 - 100	60	60	
Traditional Game Cover Mixture		35	10kg	/	1	/	25kg	25kg	April - June	September - February	1 Season	B/C	B/C	80	40	96
Decoy Game Mixture		35	10kg	/	1	/	20kg	20kg	Spring	September - February	1 Season	1 - 2	15 - 25	80	40	96
Boost Mixture		19 & 36	10kg	1			6kg+	6kg	June - September	September - February	1 Season	1 - 2	45 - 50	100	50	50
Late Cover Mixture		19 & 36	10kg	/			15kg+	12kg	Spring / Autumn	September - February	1 Season	1 - 2	20 - 35	55	28	28
Kwik Fix		19 & 36	10kg	/			15kg+	12kg	July - End of September	September - December	1 Season	1 - 2	40		ging can o excess fer	
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.



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

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.

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)



	STALE SEEDBED					PRE EME	RGENCE	HERBICID	ES ONLY												PO	ST EMERG	ENCE HE
	ROUNDUP VISTA PLUS	алтнем (марр 15761)	CENTIUM 360CS (MAPP 17327/18719)	CIPRUS CS (MAPPP 18721)	SPINNAKER (MAPP 18855)	GANT 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)	ALIAS SK (MAPP 18602)	АИТНЕМ (МАРР 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)
Borage	YES	NO	YES	YES		YES		NO			YES		NO		NO	NO	YES		NO NO		YES	YES	
Buckwheat	YES	NO						2.0 L/HA		1.7 L/HA		YES		6G	NO	NO	YES		2.0 L/HA		YES	YES	
Canary Grass	YES	YES						YES			NO			20G FROM 3 LF		YES	NO		2.0 L/HA		YES	YES	YES
Chicory			YES	YES		YES								NO		NO	YES		YES		NO	YES	
Fodder Radish	YES	NO	YES	YES		YES		NO		1.7 L/HA			NO	NO	NO	NO	YES		NO		YES	NO	
Gold of Pleasure	YES							2.0 L/HA		1.7 L/HA	YES	YES		NO		NO	YES		YES		YES	NO	
Kale	YES	NO	YES	YES		YES				1.7 L/HA	YES	YES	NO	NO	NO	NO	YES		NO		YES	NO	YES
Linseed	YES	YES	NO	NO		NO						YES		YES		YES	YES	NO	NO		YES	YES	YES
Maize	YES	YES	YES	YES		YES	YES		YES		NO	NO	YES	6G	YES	YES	NO	YES			YES	YES	NO
Red Millet	YES						NO				YES		MAX 2.2		2.9 L/HA	YES	YES	NO	YES		YES	YES	
Reed Millet	YES						NO			YES			NO			YES		NO			YES	YES	
Ambush Millet Mix	YES						NO			1.7 L/HA	YES		MAX 3.3	20G/HA 3LF +		YES		NO			YES	YES	NO
White Millet	YES		YES	YES		YES	NO			YES	YES		YES	20G/HA 3LF+	3.3 L/HA	YES	YES	NO	YES		YES	YES	NO
Mustard	YES		NO	NO		NO		YES		1.7 L/HA	YES			NO	NO	NO	YES		NO		YES	NO	
Phacelia	YES	NO	YES	YES		YES		NO			NO		NO		NO	NO	YES		NO		YES	YES	
Quinoa	YES	NO	NO	NO		NO		NO		1.7 L/HA	YES	NO	NO	6G FROM 3LF	NO	NO	NO		NO		YES	NO	
Sorghum	YES		YES	YES		YES		YES		YES	NO	NO		6G		NO	YES		YES		YES	YES	
Stubble Turnip	YES	NO	NO	NO	NO	NO	NO			1.7 L/HA	YES		NO	NO	NO	NO	YES			NO	YES	NO	YES
Sunflower	YES	YES	YES	YES		YES	NO			1.7 L/HA				NO		NO	NO		NO		NO	NO	YES
Sweet Clover	YES		YES	YES	İ	YES		2.0 L/HA		1.7 L/HA	YES			NO		NO	YES		2.0 L/HA			YES	
Texsel Greens	YES						NO	YES						NO	NO	NO	YES		2.0 L/HA		YES	NO	
Triticale	YES	YES	YES	YES	YES	YES	NO	YES	YES	NO	NO	YES	YES	YES	YES				YES	YES	YES	YES	NO

YES 2.9 L/HA YES 2.2 L/HA YES YES YES YES YES YES YES 2.2 L/HA YES 3.3 L/HA YES YES YES YES 3.3 L/HA YES YES YES

HERBICIDES

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

GAME COVER CROPS

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.

Herbicide	Crop Timing	a.ig/l or kg	Dose rate litre/ha	Grain Maize	Forage Maize	Wild Radish	Volunteer Potato	Thistle Creeping	Stinking Mayweed	Sow Thistles	Shepherd's Purse	1 2	Scarlet Pimpernel	Small Nettle	Redshank	Red Dead Nettle	Pennycress	Parsley Piert	Pale Persicaria	Orache	Knotgrass	Henbit Dead Nettle	Groundsel	Fumitory	Forget-me-not	Field Pansy	Field Bindweed	Fat Hen	Creeping Buttercup	Corn Marigold	Crane's Bill	Common Poppy	C Hemp Nettle	C.Chickweed	Cleavers	Charlock	Black Nightshade	Black Bindweed	Annual Mercury	Amaranthus	Wild Oats	Volunteer Cereals	Ryegrass	RSMG	Millet	Loose Silky Bent	Creeping Bent	Crab/Hairy Finger	Brome	Blackgrass	Annual Meadow Grass Barnyard Grass/
Pendimethalin	Pre-emergence up to 4 leaves	Most Micro 365g/l Anthem 400g/l Stomp Aqua 455g/l	3.3	STOMP &	YES ALL																																														
Wing-P	Pre-emergence up to 4 leaves	Dimethenamid-p 212.5g/l + Pendimethalin 250g/l	4.0	YES	YES																										KEY BENEFIT																				
Dual Gold	Pre-emergence	S-metolachlor 960g/l	1.4	YES	YES																																												Г		
Bullet XL	Pre-emergence up to 4 leaves	Terbuthylazine 270g + Pendimethalin 64g/ha	2.7		YES																																														
Callisto	Post emergence 2-8lvs	Mesotrione 100g/l	1.5	YES	YES	*	9	*	*				*			×	*				*					6-LF			* *						*6-8 whorks		4.6	*	*	6-8 LF					*			*			* GS21
Dow Shield 400	Up to and incl. 9 lvs	Clopyralid 400g/l	0.25	NO	YES			4-LV seeding		2-LF	4-	;			Ę.	÷	-		1-1-1-1-1-1											2-LF								<u> </u>													
Elumis	Post emergence 2-8lvs	Mesotrione 75g/l + Nicosulfuron 30g/l	1.5	YES	YES																																					7-4	э П				4-6 LF	*			
Entail	Post emergence 2-8lvs	Nicosulfuron 240g/l	0.17	YES	YES	*			*		*				*	я			*	*	*		*			*	*	*			П		* *						*			GS21	2-LF		2-LF GS21		4-6 LF	4-6 🗜			2-1∓
Gal Gone	Post emergence 3-6lvs before 20cm & buttress	Fluroxypyr 200g/l	1.0	NO	YES																Ī																														
Gyo	2-8lvs	Pyrdate 600g/l	0.75	YES	YES						MS	MS																																							
Leystar	Post emergence 3-6lvs 10 Apr - 31 May	Fluroxypyr 100g/l Clopyralid + 80g/l Florasulam 2.5g/l	1.0	NO	YES	***	I ana II				** **	***	**	**	*	*			*	*	***	* *	***	*	***		***	*	***	***		*	×	***	***	***	XXX	***													
Maister + Mero #	Post emergence 2-6lvs	foramsulfuron 300g + iodosulfuron 100g/kg	150g + 1I/ha	YES	YES		9-5-	seeding	6-Fig	Ç	<u>व</u> ं नि	는 아무		4-LF	4-4-	4-4-			4-LF	2-LF	E E		4-LF	2-LF		4-LF		Seeding S-LF	2-ĻF		4-LF		7-5-	5cm 5cm	2 whorls	4-F	***	2-LF up to 8-LF			4-4-	4-t-	seeding	;			4-LF	15cm	in to	4-LF	3-LF
Peak*	Post emergence 2-10lvs	Prosulfuron 750g/kg	20g	YES	YES																							ıng	seed-																						
Titus*	Before 4 collar	Rimsulfuron 25%	50g	NO	YES check variety																																														

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
- Ultra early short-season hybrid for earlier harvest or later sowing options



Very Early

PEREZ

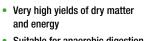
- Gain higher vields faster
- · Proven consistent performance
- · Suitable for anaerobic digestion



Early Maincrop

MARCAMO

- Fills the clamp!
- and energy
- Suitable for anaerobic digestion





Very Early

DEBALTO

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







These can be found at www.dlf.co.uk/maize-and-arable.aspx



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



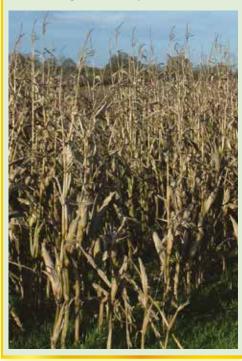
N.B. Height of maize may vary depending on seasonal and management variations. The later the sowing date the later the maturity of the maize.

RAPID FIRE



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

Pack size 50,000 seeds
Treatment Fungicide & Bird Repellent treated*



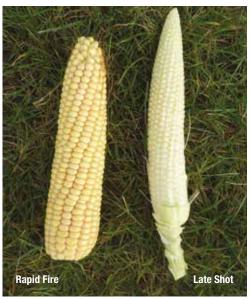


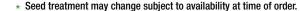
LATE SHOT



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

Pack size 50,000 seeds
Treatment Fungicide & Bird Repellent treated*





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

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

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

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

GOLDENEYE

Club Root Tolerant



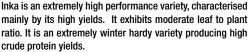


Goldeneye is a giant type kale especially bred for the game cover market, selected for the optimum combination of height and leaf production. It has a leafy top, strong stem, good winter hardiness and good field tolerance of disease, making it the ideal choice for game cover usage. Goldeneye achieved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

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

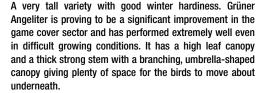
INKA





Sowing rate 4 - 5kg/ha Pack size 1kg & 5kg Treatment Untreated

GRÜNER ANGELITER



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% Inka

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

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

JUPITER LEAFY TURNIP

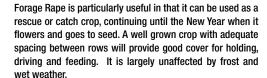


Jupiter is a very leafy turnip that is late flowering, covers the soil very fast and is winter hardy. This variety can be sown in spring or autumn and for forage production these leafy turnips can be grazed after just 6-8 weeks.

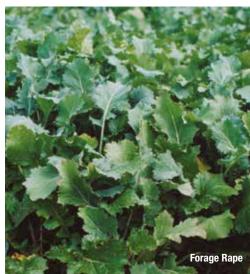
Sowing rate 5 - 7.5kg/ha Pack size 10kg & 25kg Treatment Untreated



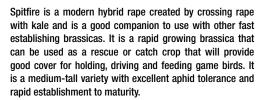
FORAGE RAPE



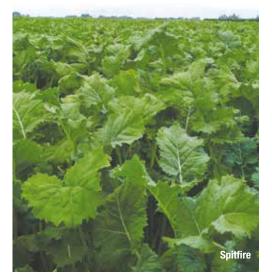
Sowing rate 6 - 10kg/ha Pack size 10kg & 25kg Treatment Untreated



SPITFIRE HYBRID FORAGE BRASSICA



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



BRASSICA CARINATA



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

Sowing rate 5 - 7.5kg/ha Pack size 2kg Treatment Untreated





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

DWARF SORGHUM

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

Average height 1 - 1.25m under favourable conditions.

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

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

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.

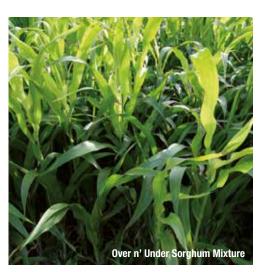
90% Dwarf Sorghum10% Piper Sorghum Sudangrass

100%

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









WHITE 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**

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

other game cover crops.



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

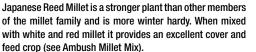
and if sown alone can be used for early holding cover. When

required to last longer into the season it performs well if

sown with maize, but will combine well with a variety of

JAPANESE REED MILLET





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



AMBUSH MILLET MIX





MILLGAME 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 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**



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

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

SUNFLOWER







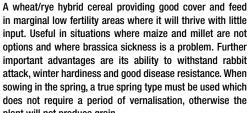


A variety with good standing ability. Large attractive flowers, with high vield potential. Best 'swiped down' to enable game birds to reach the nutritious seeds. Can be drilled with Maize to brighten up your crop.

Sowing rate 12kg/ha Pack size 10kg Untreated



TRITICALE



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

BORAGE





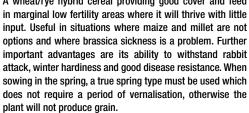






Quinoa is capable of producing a plentiful amount of seed and therefore is a popular choice of crop for holding partridge and pheasant. Many species of seed-eating song-birds are also attracted to the crop. Commonly grown with kale, quinoa provides cover and feed until it begins to collapse in the first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

Sowing rate 5kg/ha Pack size 2kg Treatment Untreated



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

Treatment Untreated

to come.

Sowing rate 12kg/ha

Treatment Untreated

Pack size 5kg







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)

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.

Organic seed available in 25kg packs (Limited)

BUCKWHEAT

Sowing rate 50kg/ha

Treatment Untreated

Pack size 10kg & 25kg







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 -

Sowing rate 6 - 17kg/ha Pack size 10kg & 25kg **Treatment Untreated**

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

Organic seed available in 25kg packs

FODDER RADISH





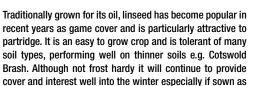












sickness has been a problem. Sowing rate 60kg/ha

Pack size 25kg **Treatment Untreated**

Sowing rate 6 - 8kg/ha Pack size 10kg & 25kg **Treatment Untreated**

Organic seed available in 25kg packs (Limited)

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'.



GOLD OF PLEASURE -CAMELINA





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

part of a mixture. It is also another option where brassica

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

Organic seed available in 25kg packs (Limited)

LONGER TERM CROPS

CROPS

COVER

GAME

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.



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)

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.

YELLOW BLOSSOM CLOVER **S**

Sowing rate 6kg/ha Pack size 2kg Treatment Untreated

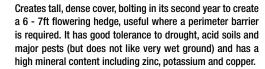
REED CANARY GRASS

(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



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 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

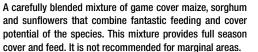
Treatment Fungicide treatments

SUNDOWN MIXTURE









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.







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

Red Millet

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

Sowing rate 15kg/ha Pack size 10kg

Quinoa

100%

Buckwheat

Phacelia

White Millet

Forage rape

Japanese Reed Millet

Yellow Blossom Clover

Red Millet

Goldeneye Kale

Treatment Untreated









15% Game Maize 15% Red Millet

14% Buckwheat

12% Intermediate Sorghum 10.5% Sunflower

9.5% Kale

2.5% White Mustard

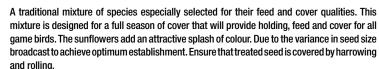
2.5% Forage Rape

1% Gold of Pleasure

0.5% Phacelia

100%

TRADITIONAL GAME COVER MIXTURE





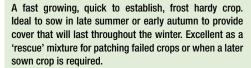
Sowing rate 25kg/ha Pack size 10kg **Treatment Various treatments**



LATE COVER AND RESCUE MIXTURES



BOOST MIXTURE



70% Brassica Carinata

10% Hybrid Brassica

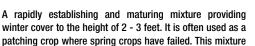
10% Fodder Radish

10% Brown Mustard

100%

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

LATE COVER MIXTURE



75% Forage Rape

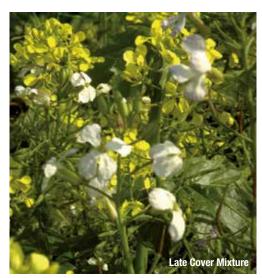
will tolerate drought conditions.

14% White Mustard

11% Fodder Radish

100%

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



KWIK FIX

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

80% Fodder Radish 20% White Mustard

100%

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

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**

RESCUE MIXTURE





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

50% Buckwheat

15% Fodder Radish

15% White Mustard

10% Gold of Pleasure

10% Brassica Carinata

100%

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





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



FTING



ATTLE AZING



SHEEP GRAZING



CULINAR 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.		c Size	Average So kg / H		ving Date Guide	Utilisation Period	Average Drill Depth cm	ge Row th cm	Seedl	sted Gu ed Fer (kg) ha	tiliser	s Sowing to Grazing	of possible Grazings	ıtter (%)	Digestibility (D-Value)	(WD %)	(MJ/Jkg DM)
0.04	Pag	Pack	Broadcast	Direct Drill	Sowing Guid	Gu Utilik Pe Avera Dep		Average Width c	N	Р	К	Days So	No of p Gra	Dry Matter	Diges (D-V	CP (9	ME (A D
Stubble Turnip	38	10kg & 25kg	7.5	5	Apr-mid Sept	Jun-Jan	1-2	n/a	75	40	40	60-100	1	12-15	70	17-18	10-11
Main Crop Turnip	38	2kg	5	2.5 - 3.5	May-Jul	Oct-Jan	1-2	n/a	40	80	100	60-100	1	12-15	80	17-18	10-11
Forage Rape	39	10kg & 25kg	10	6	May-end Sept	Jun-Jan	1-2	n/a	20	40	40	90-100	2	10-12	70	19-20	10-11
Fodder Beet	40	1ac 50,000 seeds	-	Precision drill 100,000/ha	Mar-May	Oct-Mar	2.5-3	50-60	110	50	50	-	-	12-19	78	12-13	12- 12.5
Swede	41	500g & 1kg	2.5 - 5	Precision drill 370-865 kg/ ha grade H Direct Drill 1	Apr-June	Aug-Mar	1-2	45-70 graded 40 natural	40	80	100	170-250	1	17-20	82	10-11	12-13
Kale	42	1kg	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.



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

There are two types of stubble turnip: bulbing (see Barkant and Vollenda) and non bulbing (see Tyfon and Jupiter).

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

Bulbing Types





Non Bulbing Types





Main Crop Turnip



BARKANT

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

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

VOLLENDA (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)**

potential for regrowth.
Sowing rate 5 - 7 5kg/

TYFON

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

JUPITER LEAFY TURNIP

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

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

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

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

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

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

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

EMERALD

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

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

ZOOM BRASSICA MIXTURE

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

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



SPITFIRE HYBRID FORAGE BRASSICA

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

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

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



Fodder Beet 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

CROPS

FORAGE

Seed Treatment - Force 10 & Pelleted Untreated seed (Limited)

Variety		Fresh	Yield	DM	DM '	Yield	Root in Ground	Bolters
		tonne/ hectare	% Enermax	%	tonne/ hectare	% Enermax	%	#/10m²
ALIANKA	White	108.19	106.8%	19.9%	21.53	100.9%	63%	0.00
BANGOR	Yellow	111.45	110.1%	18.6%	20.52	96.1%	51%	0.29
DELICANTE	White	116.40	114.9%	19.1%	22.23	104.1%	56%	0.00
ENERMAX	White	101.26	100.0%	21.4%	21.35	100.0%	72%	0.00
JAMON	Orange	105.71	104.4%	18.1%	19.10	89.5%	51%	0.07
MAGNUM	White	100.96	99.7%	22.2%	22.12	103.6%	62%	0.07
MONRO	Red	101.07	99.8%	15.9%	15.98	74.8%	49%	0.39

ALIANKA





Alianka is a high yielding Rhizomania



DELICANTE





Delicante is a high vielding white beet.



MONRO





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

JAMON





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

MAGNUM





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

Magnum has a consistent root size and

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%.



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.



OUTSTANDING PRODUCT OF THE YEAR

Everyone's talking about it!



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

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%						

AIRLIE







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

GOWRIE







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

KENMORE



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

MARIAN







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

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

Seed Rate Calculator Guide - No. of Seeds X 1000

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

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

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

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

GRÜNER ANGELITER

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

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

PROTEOR



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

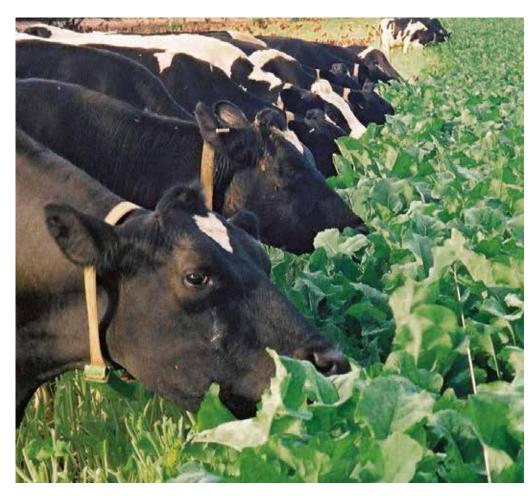
Sowing rate 2.5 - 7.5kg/ha Pack size 1kg & 5kg Treatment Untreated

INKA



Inka is an extremely high performance variety, characterised mainly by its high yields. It exhibits moderate leaf to plant ratio. It is an extremely winter hardy variety producing high crude protein yields.

Sowing rate 4 - 5kg/ha Pack size 1kg & 5kg Treatment Untreated





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 vields, whilst the stubble turnips provide energy and stockholding capacity. The mixture is ideal for fattening stock and will provide grazing from July through to December.

Sow mid April - mid September.

65% Forage Rape 30% Stubble Turnip

5% Kale

100%

Sowing rate 6 - 8.5kg/ha Pack size 10kg **Treatment Untreated**

WINTER GRAZE





(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 10kg **Treatment Untreated**

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

Arable Silage Mixtures offer an alternative or additional feed to grass or maize silage and are particularly suitable for farmers wishing to increase their levels of homeproduced 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

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.

For orders and product information please ring the seed line

T: 01769 576232

E: seeds@molevalleyfarmers.com

Mole Valley Farmers

Bridgend FarmDirect	01656 665555	Dorchester	01305 262141
Bridgwater	01278 424240	Driffield	01377 249700
Cullompton	01884 34333	Fauld	01283 810137
Frome	01373 831114	Gillingham	01747 824933
Holsworthy	01409 253014	Heathfield	01435 866938
Liskeard	01579 340034	Hexham	01434 613930
Newton Abbot	01626 836555	Isle of Wight	01983 524351
Penzance	01736 711884		
South Molton	01769 574477	Leyburn	01969 621300
St Columb	01637 881115	Lymington	01590 676633
Tavistock	01822 614176	Market Rasen	01673 262800
Yeovil	01935 420971	Melton Mowbray	01664 498810
		Newark	01636 556690
Mole Country Stores		Newbury	01635 43436
		Piercebridge	01325 504621
Alnwick	01665 604656	Redhill	01737 823205
Andover	01264 323482	Ripley	01423 774400
Basingstoke	01256 882776	Romsey	01794 514426
Berkeley	01453 810220	Salisbury	01722 336886
Billingshurst	01403 782031	Stamford	01780 758722
Buckingham	01280 816011		
Bury St Edmunds	01284 335220	Stokesley	01642 717600
Canterbury	01227 781398	Thirsk	01845 570020
Cirencester	01285 869881	Ulverston	01229 861414
Colchester	01206 237845	Wickham	01329 835010
Darley Dale	01629 705125	Winchester	01962 863007
Dereham	01362 654958	Worksop	01909 498690
Devizes	01380 721594		



