



# Forage Root Crops Selector

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

## ICON KEY



LIFTING



CATTLE  
GRAZING



SHEEP  
GRAZING



CULINARY  
USE

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

Crop	Page No.	Pack Size	Average Sowing Rate kg per Acre		Sowing Date Guide	Utilisation Period	Average Drill Depth cm	Average Row Width cm	Suggested Guide to Seedbed Fertiliser (kg) ha		
			Broadcast	Direct Drill					N	P	K
Forage Rape	34	5kg & 25kg	4	2.5	May - end of September	July to December	1 - 2	n/a	20	40	40
Stubble Turnip	35	5kg & 25kg	3	2	April - mid September	June to December	1 - 2	n/a	75	40	40
Main Crop Turnip	35	1kg	2	1 - 1.5	May - July	October to January	1 - 2	n/a	40	80	100
Kale	36	1kg	3	1 - 2	April - July	September to March	1 - 2	50	100	50	120
Fodder Beet	37	1 acre (50,000 seeds)	-	Precision drill 50,000 seed/acre	March - May	October to March	2.5 - 3	50 - 60	110	50	50
Swede	38	500g & 1kg	2	Precision drill 150-350g/acre grade H Direct drill 1	April - June	August to March	1 - 2	45 - 70 graded 40 natural	40	80	100
Rapid Root Mixture	39	5kg	2.5	2.5	Mid April - mid September	July to December	1 - 2	n/a	60	50	50
Winter Graze Mixture	39	5kg	2.5	2.5	Mid July - mid September	Post Christmas grazing	1 - 2	n/a	60	50	50

**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.



# Forage Rape

**Forage Rape** has the advantage of being a very fast growing crop, suitable for grazing by sheep or cattle. An ideal catch crop for boosting midsummer forage production for livestock farmers when planted in the spring, it is suitable for fattening lambs in the autumn/winter. Forage Rape extends the grazing season in the autumn and is superb for flushing ewes.

Forage Rape can be mixed with Stubble Turnips and Kale to combine the benefits of these crops (see page 39).

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.

## 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 2.5 - 4kg/acre**  
**Pack Size 5kg & 25kg untreated**  
**Cruiser OSR Flea Beetle Treatment available (limited)**

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

## SPARTA FORAGE RAPE



**Good Club Root Tolerance**

Another new introduction to our portfolio, Sparta is a high yielding, late flowering rape with the huge advantage of having club root tolerance, enabling it be sown where clubroot is a problem and there are no alternative sowing sites. Its late flowering habit allows for sowing flexibility offering an extension to the feeding period. As with other forage rapes, it matures ten to twelve weeks after sowing.

**Sowing rate 2.5 - 4kg/acre**  
**Pack size 5kg and 25kg untreated**



## ORGANIC FORAGE RAPE



**Sowing rate 2.5 - 4kg/acre**  
**Pack Size 25kg untreated organic seed (very limited)**

## ZOOM BRASSICA MIXTURE



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 2.5 - 4kg/acre**  
**Pack size 5kg.**  
**Cruiser OSR Flea Beetle Treatment**



# Turnips

**Stubble Turnips** are a fast growing catch crop, popular with livestock farmers. They may be sown after first cut silage for summer grazing or after winter cereals for autumn usage. When planting a large acreage it is advisable to stagger sowing dates, increasing the seed rate in dry conditions. If using 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).

Stubble Turnip Yield and Feed Quality	
Average dry matter yield	3.5 - 4 tonnes/ha
Average fresh yields	38 - 40 tonnes/ha
Dry matter	8 - 9%
Crude protein	17 - 18% (mainly leaves)
Digestibility value	68 - 70%
Metabolisable energy	11MJ/kg DM

## Bulbing types

### BARKANT

A winter hardy, highly digestible variety with high dry matter. This is a proven and reliable stubble turnip.

**Sowing rate 2 - 3kg/acre. Pack sizes 5kg & 25kg untreated Cruiser SB Flea Beetle Treatment (limited)**

### VOLLEND A (Tetraploid)

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

**Sowing rate 2 - 3kg/acre. Pack sizes 5kg & 25kg untreated Cruiser SB Flea Beetle Treatment (limited)**

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

## Non Bulbing types

### TYFON

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

**Sowing rate 2 - 3kg/acre Pack size 5kg seed treatment Thiram**

## Main Crop Turnip

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

### GREEN GLOBE

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

**Sowing rate Drill 1-1.5kg/acre Broadcast 2kg/acre Pack size 1kg seed treatment Thiram Sow Late May to July**



# Kales

**Kale** is a brassica traditionally grown for grazing by cattle 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. 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 14).

**Sowing rate 1 - 3kg/acre**  
**Pack size: 1 kg untreated**  
**Cruiser SB Flea Beetle Treatment**



## 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. Gruner Angeliter has been the mainstay forage variety of Kale in New Zealand for many years and since its recent introduction to the UK has become equally popular over here.

**MOST CONSISTENT PRODUCT OF THE YEAR** *Everyone's talking about it!*

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

## THOUSAND HEAD



Thousand Head is a medium stemmed variety bearing leafy foliage with very high D value and dry matter content. It has excellent winter hardiness providing forage for feeding after Christmas.



## SOVEREIGN



Sovereign is a high yielding, medium-tall forage kale with good club root tolerance. In agronomic tests conducted by the SAC in Aberdeen, Sovereign was shown to have good dry matter yields and excellent leaf-to-stem ratio, thereby increasing stock utilisation and animal performance. Successfully tested for winter hardiness and keeping ability, it has the potential to maintain good quality production over a longer usage period.

Sovereign does not produce the large thick stems common to giant kales even when planted at lower density, therefore increasing palatability.


Variety	Maris Kestrel (Control)	Gruner Angeliter	Thousand Head	Keeper
Dry Matter Yield	100	111	90	80
Height cm	65	80	78	60

Dry Matter yield is a percentage of Maris Kestrel • Source: 2010 DLF Trifolium Ltd trial at Hailes Farm, Gloucestershire.

# Fodder Beets



**ENERMAX**



**MAGNUM**

“We are very pleased with the Enermax Fodder Beet. We planted early April with our Stanhay Precision Drill. We provide the crop with what it needs and use the recommended herbicides and fungicides. The crop of Enermax looks excellent so far, I felt there was a consistent size difference between the Enermax and Magnum root with the Enermax being a larger root. You can see in the photograph that the Enermax roots are slightly bigger compared to the Magnum. We will identify this difference better when we harvest in February”

Williamsons Farm, Gainsborough, Lincolnshire December 2012



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

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

**Pack size - 50,000 seeds per acre**

**Seed Treatment - Force Magna, Gaucho and limited untreated seed available**

Fodder Beet Yield and Feed Quality	
Average dry matter yield	13 - 15 tonnes/ha
Average fresh yields	80 - 90 tonnes/ha
Dry matter	12 - 19%
Crude protein	12 - 13%
Digestibility value	78D
Metabolisable energy	12.5 - 13.5MJ/kg DM

## ALPES



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

## MAGNUM



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

## KYROS



A very consistent, high yielding variety producing a clean, highly palatable and easily digestible yellow root at harvest. Kyros will provide a high energy feed whole or chopped.

## TROYA



High yields of medium dry matter content. Very good establishment and bolting resistance with 62% of its yellow root in the ground, ensuring clean, easy lifting.

Variety	Alpes	Magnum	Kyros	Troya
Clean dry matter yield (100=15.2t/ha)	107	107	99	103
As field fresh yield (100=100.4t/ha)	105	96	100	100
Dry matter content (%)	17.3	19.3	16.8	17.5
Establishment (9=good 1=poor)	6.9	7.4	7	6.9
Bolting (%)	0.3	0.1	0.2	0.6
Top size (9=large 1=small)	7.1	6.5	7.2	6.0
% of Root in ground	67	78	67	62
Cleanliness (9=best 1=worst)	7	6.4	6.7	6.6
Rust (9=best 1=worst)	6	4	4	6
Ramularia (9=best 1=worst)	n/a	7	4	5
Root Colour	Yellow	White	Yellow	Yellow

## ENERMAX

An exciting new 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 9% 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 sugar-beet is an important crop, as well as in the west and other areas.

**OUTSTANDING PRODUCT OF THE YEAR**

*Everyone's talking about it!*

Source: NIAB



# Swedes

**Swedes** are a full season root crop which are mainly fed in situ, but can also be lifted and stored in a clamp. They do best in areas of high rainfall, so are generally grown in the more northerly and western areas of the UK. Swedes also need good soil conditions and good drainage as they are sensitive to poor drainage; they do best in soils with a pH of approximately 6.5. 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  
Thiram and Sepiret treated

All graded seed is packed in 0.5 kg packs  
Cruiser SB Flea Beetle treated for culinary use only

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

## AIRLIE



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

## MARIAN



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

## RUTA OTOFTE



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

## KENMORE



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

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

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

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

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



# Root Mixtures & Arable Silage

## Root Mixtures



The following two catch crop mixtures combine the benefits of Stubble Turnips and Forage Rape, excellent for fattening lambs during autumn and winter and 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.

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.

### RAPID ROOT (pre December use)

The Forage Rape element of this mixture ensures quick establishment and high protein yields, whilst the Stubble Turnips provide energy and stockholding capacity. The mixture is ideal for fattening stock and will provide grazing from July through to December. Sow mid April - mid September

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

**100%**

### 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% Barkant Stubble Turnip
- 35% Forage Rape
- 5% Kale

**100%**

Both mixtures above  
Pack size: in 5kg packs untreated  
Sow 2.5kg/acre

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

## CONVENTIONAL MIXTURES

### Arable Silage Pea & Barley No1

- 65% Spring Peas
- 35% Spring Barley

### Arable Silage No2

- 40% Spring Peas
- 30% Spring Barley
- 30% Spring Oats

### Arable Silage No3

- 35% Spring Barley
- 30% Spring Oats
- 25% Spring Peas
- 10% Spring Vetches

## ORGANIC MIXTURES

### 65% Organic Pea & Barley No1 (Limited)

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

### 65% Organic Arable Silage No2

- 35% Spring Peas
- 30% Organic Spring Barley
- 30% Organic Spring Oats
- 5% Organic Spring Peas

### 65% Organic Arable Silage No3

- 35% Organic Spring Barley
- 30% Organic Spring Oats
- 25% Spring Peas
- 10% Spring Vetches

All mixtures are available packed in 250kg or 500kg bags.  
The suggested sowing rate for all mixtures is 60 - 90kg per acre. **Book early to avoid disappointment.**