



**EXCEPTIONAL
HIGH DRY
MATTER YIELD**

Why grow KALE?

- Very high yielding variety
- Versatile choice for beef or dairy cattle
- Medium in height

GRAMPIAN is a newly bred KALE variety and exhibits very high dry matter yields. Combined with some club root resistance this variety is an excellent autumn or winter feed. Another key feature of **GRAMPIAN** is that it contains less anti nutritional chemicals that can cause problems compared to other varieties. As it is Scottish bred **GRAMPIAN** is also very winter hardy and showed excellent resistance to frost from previous winters.

VARIETY	TOTAL DRY MATTER YIELD (%)	TOTAL FRESH YIELD (%)	DRY MATTER (%)
100% = Tonnes/ha	9.4 t/ha	69.4 t/ha	
GRAMPIAN	118	118	14.1
KEEPER	102	91	15.7
MARIS KESTREL	100	100	14.0

(Data Source: Advanta & SCRI Scotland Trials 1991-2008)

SOWING INFORMATION

Sowing period	April – early July
Direct drill	4 - 5kg (1-2kg/acre)
Broadcast	8kg/ha (3kg/acre)



Other varieties available from Seedtech:

- KEEPER** - Winter hardy and good lodging resistance
- COLEOR** – Purple colour, winter hardy kale with high leaf to stem ratio
- CALEDONIAN** - Huge yields and excellent club root resistance

KALE – GROWING AND SOWING GUIDE 2013

Soil Type

Kale grows best on a medium loam soil with a pH of 6.0-7.0. It needs a well-drained field which is free from pans or evidence of soil compaction. If grown on very light soil there is a risk that the crop could suffer from drought post drilling (which will jeopardise seed emergence). Alternatively, with crops grown on very heavy sites one will have to remember that a very wet autumn could make the strip-grazing operation rather difficult. If you have a difficult site then it will probably be worthwhile looking at kaleage - big bale kale silage.

Seed Bed Preparation

A fine, firm moist level seedbed is required. The crop will benefit from applications of slurry or FYM and this should be ploughed in. The seedbed should be worked down with the intention of losing as little moisture as possible.

Sowing

Kale seed should be sown between mid-April and mid-July. Early sown crops which establish well are more likely to give the highest yields. The seed can be broadcast or sown with a precision drill or root drill. Under normal conditions a seed rate of 4-5 kg/ha should be adequate. If seedbed conditions are very dry, or the crop is broadcast, then the rate can be increased slightly as insurance. The target population is 70 plants/square metres, whichever sowing method is used.

Fertiliser

The kale crop will grow extremely well when provided with plenty of organic matter. It is a fast growing crop and it needs plenty of nourishment.

For a soil index of 2 apply 100 units/ha each of P and K to the seedbed. The amount of nitrogen required will depend on the previous cropping. Up to 170 units/ha may be needed after a run of cereals whereas the rate following a crop of intensively grazed grass can fall to 75 units/ha. The nitrogen application can be split for early sown crops - 65% in the seedbed and the balance when the crop has reached a height of 15/16 cm. For direct drilled crops it is normally considered wise to increase the nitrogen applied by up to 25% to boost the crop in the establishment phase. Consult your usual fertiliser supplier for an accurate assessment of your requirements particular if slurry or FYM has not been used.

Feeding

The feeding value of kale is related to the proportion of leaf to stem. This, in turn, is dependent on several factors including variety, date of sowing and harvest, plant population and levels of nitrogen applied. Obviously, frost damage and leaf loss will lower the overall feeding value. Remember that kale is low in phosphorous, manganese and iodine but high in calcium. On this basis mineral supplementation may be necessary if the crop is to represent a large proportion of the total ration. As a general rule experts often say that kale should provide no more than 30/35% of the dry matter intake per day for dairy cows. Excessive intakes of kale can lead to anaemia in dairy cows.



Harvesting

The traditional method is to utilise the crop fresh either by:

- **Strip grazing** behind an electric fence which should be moved once or twice a day. Allow a space of 3 metres per cow and an area of grass for the animal to run back on is helpful. Keep a close eye on the levels of wastage - some varieties are more palatable than others.
- **Zero-grazing** - Cutting the crop with a forage harvester will help secure the maximum use of the green feed with little waste. The kale can then be fed from a forage box or behind a barrier. Just as with fodder beet, great care must be taken to avoid soil contamination.

Sprays

Several pre-emergence sprays are effective in kale and chemicals are also available for post emergence control of broad leaved weeds. Consult your usual spray specialist if you have any doubt about the efficiency of any products you propose to use.

Pests & Diseases

In dry years an attack by flea beetle can cause considerable damage to young established crops. A seed dressing will provide some protection against a moderate attack. Slugs can be a problem in direct drilled crops - slug pellets should be considered if this pest is likely to pose a threat. Rabbits and pigeons can also be a problem and control may be necessary in fields which are considered to be especially at risk.

Clubroot represents the major disease threat - it is soil borne so control is by a good rotation of crops. Avoid growing kale on any fields which have a history of clubroot. Alternaria and mildew can affect crops but attacks are seldom too serious.



For further information contact a member of our Technical Team on 051 832814 or log on to www.seedtech.ie

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GRAMPIAN, KEEPER, COLEOR & CALEDONIAN KALE is available
from your local co-op or agri merchant