



## Green manure Species and blends



500mm+



5.0–7.5



Most soil types

Green manures are sown into ground between crops by gardeners and fresh-market producers, usually during autumn and early winter, although they have application for spring and summer in some situations. Green manures are most often used for vegetable cropping rotations, but may also be used for preparing ground for ornamental gardens, or more broadly to improve ground for following crops in agriculture generally. There is also wide-spread adoption in vineyard and other perennial horticultural enterprises.

### Key features

- Nutrient sink – captures nutrients that may otherwise leach away below the cropping zone
- Less reliance on artificial fertilisers
- Often less irrigation needed on subsequent crops

### Key benefits

- Soil stabilisation – helps avoid erosion where soils may be bare or fallowed
- Increased fertility – adds significant amounts of soil organic matter
- Nitrogen Fixation – Lupins, peas, vetch, clovers and tic beans obtain nitrogen from the air and it becomes available to subsequent crops.

## Management and use patterns

Whilst many annual plants including weeds may offer some benefits as green manure, species should be selected that will establish vigorously for the time of year planted, and be readily incorporated into the soil. The Green Manure Blend is suitable for crops being grown in cooler times of the year, and sub-tropical species will only suit early summer planting. Whilst one of the main roles of a green manure is to capture nutrients to make them available for subsequent cropping, there will in many cases be sound cause and justification to apply some form of fertiliser where elements may be lacking and thus impact growth potential. A soil test and reflection on recent cropping history will offer guidance.

Generating biomass quickly is a key for success. Crops should be sown at seeding rates that assist with developing a quick ground cover, bearing in mind that we are not seeking to grow the crop to full maturity. Best results are achieved if the crop is relatively young, lush and vegetative when it is time to finish it up. Typically allow for around 8–10 weeks growth before slashing, mulching or digging in. The crops should be leafy and tender at and around 40–60 cm high with full ground-cover at time of incorporation. Allowing crops to get taller may increase their fibrous nature: the crop may be more difficult to manage, and there may be unsatisfactory amounts of stem and other residue remaining.

## Suitable sowing times in temperate areas

Green Manure Species Options	Early Autumn	Late Autumn / Winter	Early Spring	Late Spring / Summer	Sole stand kg/ha	Mix (typical % W/W)	Avail. untreated	Biomass	Deep tap root	N fixing	Varieties
Ryecorn	✓	✓	✓	-	100	10–20	✓	★★★★			Common ryecorn
Oats	✓	✓	✓	✓	150	15–25	✓	★★★★			Express + various
Barley	✓	✓	✓	✓	150	15–25	✓	★★★★			Dictator 2
Annual Ryegrass	✓	✓	✓	✓	30	10–15	✓	★★★★			Vortex, Hogan, Fuze
Italian Ryegrass	✓	✓	✓	✓	30	10–15	✓	★★★★			Arise, Tempo
Faba beans	✓	✓	✓	-	300	25–40	✓	★★★★	★	★★★★	Farah, Tic Beans
Lupins	✓	✓	✓	-	150	20–25	✓	★★	★★★★	★★★★	Mandelup, Blue
Peas	✓	✓	✓	✓	200	20–25	✓	★★	★	★★★★	Morgan, Percy, Maple
Vetch	✓	-	✓	✓	75	15–25	✓	★★	★	★★★★	Capello, Morava
Clover	✓	-	✓	✓	20	5–10	*	★★	★★	★★★★	Laser, Lightning
Mustard	✓	✓	✓	✓	10	5–10	✓	★★	★★		Brown mustard
Rape	✓	-	✓	✓	10	5–10	*	★★★★	★★★★		Leafmore
Tillage radish	✓	✓	✓	✓	10	10–20	✓	★★	★★★★		Tillage Radish
Phacelia	✓	-	✓	-	10	5–10	*	★★	★★★★		Phacelia
Sunflower	-	-	-	✓	5–10	10–20	✓	★★★★	★★		Various
Millet	-	-	-	✓	40	20–40	✓	★★★★			Shirohie
Green Manure Blend	✓	✓	✓	-	200–300	-	✓	★★★★	★★	★★	

\*May be available untreated on request

## Seed presentation

### Seed treatment:

- Generally sold and sown as bare, untreated seed for purposes of green manure.
- Inoculation of legumes may be beneficial.
- Fungicide and trace element treatment of clovers and brassicas is often useful.

### Pack size:

- Generally available in full 25kg bags, some outlets may offer smaller quantities on request.
- Green Manure Blend is available in 25kg and 5kg bags.

# Green manure Seed blend

**Planting:** late summer to early spring

Analysis	by weight
Ryecorn	10%
Oats	10%
Barley	10%
Faba Beans	30%
Lupins	20%
Field Peas	20%

Add 5% by weight of phacelia, mustard, rape or tillage radish if these additional species are desired.



## Suggested sowing rates

### Home garden:

2–3 good handfuls per square metre  
= about 30–50 g/m<sup>2</sup>

e.g. garden bed 5m wide x 10m long  
= 50 m<sup>2</sup>, 50 x 50g = 2.5kg required

### Broader scale applications:

200–300 kg per hectare  
= about 75–125 kg per acre



## Other publications from Barenbrug

For a copy of any of these guides please email  
[barenbrug@barenbrug.com.au](mailto:barenbrug@barenbrug.com.au) or call 1800 007 333

- Seed guide
- Winter feed and forage guide
- Curator turf seed guide
- Summer forage crop guide



# Suitable species for green manures

## Ryecorn

*Secale cereal*. Vigorous, ancient variety of cereal. Deep and numerous root system. Tolerant of low fertility and waterlogging. Suitable for autumn-winter sowing, and may be used for quick-turn around crops as a spring option. Also known as rye or cereal rye.

## Oats

*Avena sativa*. Fast growing, winter active cereal. Produces a high amount of bulk in a short time. Suitable for autumn and early spring sowing. Saia oats are a sub-species (*A. strigosa*) and have a finer stem and some anti-nematode properties.

## Barley

*Hordeum vulgare* L. Quickest growth of all cereals with comparatively less fibrous stems. May be sown any time of year.

## Ryegrass

*Lolium multiflorum*. Annual or Italian ryegrasses may be used. They have great capacity to add bulk, are high in moisture and have a high number of roots, although relatively shallow depth. Avoid using too high a proportion in mixtures as ryegrass may outcompete co-species.

## Millet

*Echinochloa esculenta*. This is a vigorous, leafy summer active cereal. Best sown from early November to around mid-February, as it is frost sensitive. Very suitable to be sown with vetch, clovers or brassicas. The variety Shirohe exhibits good leafiness and better cool tolerance than others.

## Faba Beans

*Vicia faba*. Vigorous winter growth. Pithy, hollow stem is easy for chopping up and digging in. Tic beans are small-seeded 'heirloom' faba bean variety. Nitrogen fixing.

## Lupins

*Lupinus angustifolius*. Exceptionally quick establishing. Frost tolerant and thrives in low fertility soils. Easy to dig in. Nitrogen fixing. Sometimes Blue lupins (NZ Blue, Bitter blue) are available: these are a variety that has some bio-fumigant effect.

## Peas

*Pisum sativum*. Field peas are generally more vigorous than podding types. Dun, maple and grey types are usually used. Good cool season growth. Very easy to dig in. Nitrogen fixing.

## Vetch

Early autumn or spring sowing. Woolly pod vetch (*Vicia villosa*) variety Capello is often used for break crops as it helps to control some root diseases. Common vetch (*V. sativa*) may also be used and is perhaps a little more vigorous at establishment. Vetch is rambling and tender – easy to dig in. Nitrogen fixing.

## Clovers

*Trifolium spp.* A small seeded legume with good year-round growth, although slow if late autumn or winter planted. Soft-seeded varieties are best as they will not volunteer as easily. Laser Persian clover (*T. resupinatum* ssp. *majus*) is a hollow-stemmed type that is more readily dug in than others. Nitrogen fixing.

## Mustard and Rape

Brown or black mustard (*Brassica nigra*) is sometimes used as a very fast-growing option and has some soil bio-fumigant effects. Any of the leafy forage rapes (*B. napus*) are also suitable, for example Leafmore. Brassicas should probably not be used where vegetable brassicas are likely to be grown soon.

## Phacelia

*Phacelia tanacetifolia*. This is a tall growing flowering herb of the borage family. It has a deep taproot, frost hardy and may be sown autumn or spring. Phacelia is prized as a bee forage and is non-invasive.

## Tillage Radish

*Raphanus sativus*. These are a variety of the long white daikon type that have great capacity to develop a deep and broad tap root. The root has some initial capacity to penetrate soils, then when the crop is slashed and the roots die, leaving the soil more porous and richer with organic matter.

## Sunflower

*Helianthus annuus*. Sunflowers offer diversity for warm season green manures. As with other options that are potentially tall and bulky, sunflowers are best chopped in as green manure after around 6–8 weeks' growth when the plants are still relatively tender and sappy.

## Custom mixes

Please contact your Territory Manager to discuss your unique requirements. Green manure custom mixes may be tailored to suit specific situations and use patterns. Mix component sowing rates reflect desired seed plant densities, growth habits of various species and seed sizes.

Grow with  
Confidence



Editor: Rob Winter, B App. Sci (Ag)  
Regional Agronomist – Southern Australia

BB0220 - April 2020

**Disclaimer:** The information presented in this brochure is from official and other sources and is considered to be reliable. It is provided in good faith and every care has been taken to ensure its accuracy. Barenbrug does not accept any responsibility for the consequences that may arise from the acceptance of recommendations or the suggestions made.

orders@barenbrug.com.au

Freecall 1800 007 333 [barenbrug.com.au](http://barenbrug.com.au)

 **BARENBRUG**