

Green manure Fact Sheet

According to the Garden Organic fact sheet

“Green manures are plants that are sown specifically to improve soil fertility. They are not harvested for food, and are not allowed to flower. Any plant can be grown as a green manure although some are much better than others and are available as seed especially for the purpose.

There are all sorts of good reasons for growing green manures. They will:

- Improve soil fertility - clover and other legumes harvest nitrogen from the air.
- Keep soil fertility - mop up plant foods on empty land, so they are not washed out by the rain.
- Protect soil structure - a 'cover crop' protects the soil from damage by heavy rain.
- Keep down weeds - smother seedlings and compete for light and plant foods.
- Help control pests - provide safe cover for beetles, frogs and other predators.
- Stimulate soil biological activity - microbes and other soil organisms rapidly colonise green manure foliage dug into the soil. Increased biological activity makes for a more productive soil.
- Loosen the soil - deep rooting green manures can help to loosen and aerate the soil deep into the ground.
- Protect soil life - a living mulch protects creatures in the soil from the extremes of weather.”

There is a whole range of green manures which could be grown to boost soil nitrogen, prevent nitrogen leaching and improve soil structure. It is a good practice for organic growers to grow green manures in between edible crops. Below is a summary of the green manures that we recommend for use in our scheme. We will make sure that we have an adequate supply of these green manure seeds.

Phacelia tanacetifolia

When to sow – July to September

How much seed you need - Sow broadcast at a rate of 2 grams per square meter

A lovely plant with feathery leaves. Sow it by late August or early September to give quick cover. Phacelia is not always winter hardy but if the frost kills it, simply leave the frozen plants in situ to provide a protective soil cover. A quick growing green manure such as phacelia can be grown after an early crop is harvested. It is not related to any vegetable plants so again it is easy to fit in without spoiling a crop rotation. The plant is very attractive to bees, so it is a good idea to leave a few plants to flower.



Buckwheat

When to sow – April to May or July to August

How much seed you need - Sow broadcast at a rate of 7 grams per square meter

Buckwheat does not fix nitrogen but will prevent it from leaching. It is a very rapidly growing annual crop. It is good at scavenging for phosphate in the soil which it then takes up and makes available to subsequent crops after incorporation. It suppresses weeds.



Buckwheat grows vigorously and will produce relatively large amounts of biomass if allowed to grow throughout the summer. Buckwheat has large leaves which are good for suppressing weeds, although ground covering weeds such as chickweed often survive under it.

Buckwheat has good growth over the summer from a spring sowing. It will continue producing leaves and flowering throughout the summer until it is killed off by the first frosts.

Mustard

When to sow – March to September

How much seed you need - Sow broadcast at a rate of 2 grams per square meter

Mustard does not fix nitrogen but is a rapidly growing annual nitrogen lifter for growing over the summer. It is also very good at suppressing weeds. Mustard does not tolerate frost.



Mustard will suffer from all the pests and diseases normally associated with growing brassicas. If sown in spring, flea beetle can hamper it's establishment, although most crops will grow through this. As with all brassicas, pigeons can cause devastation at any stage. It is important to bear in mind that mustard is susceptible to club-root, so it should be grown in the brassica part of the rotation.

Red Clover

When to sow – March to May and in August

How much seed you need - Sow broadcast at a rate of 1 gram per square meter

Red clover is one of the most tried and tested green manures for short to medium term use, especially popular with organic farmers. Once established, it is capable of rapid growth and shows reasonably good persistence up to three years, so it is more suitable for paths in our scheme.

Clover seed is small and should be broadcast or drilled at a shallow depth (not more than 10mm). Sowing ~~too deep~~ will reduce the germination dramatically. The soil should be rolled after sowing to increase soil moisture contact with the seed.



Winter tares or vetch

When to sow – August to September

How much seed you need - Sow broadcast at a rate of 16 grams per square meters

Winter tares is good for competing against weeds and adding to soil fertility. This member of the legume family is a quick growing, bushy plant that covers the ground. It is good at competing against weeds. The luxuriant foliage rots down rapidly when dug back into the soil in the spring, producing a good supply of nitrogen, especially if you leave it until May or June. It needs to be chopped down well. It is best to grow potatoes or transplanted crops after vetch, as it can inhibit germination of directly sown seeds.



Hungarian grazing rye

When to sow – September to October

How much seed you need - Sow broadcast at a rate of 16 grams per square meter

Hungarian grazing rye is an excellent green manure for winter use and is good for holding onto soil fertility over winter. It will grow even at low temperatures, producing a thick mass of foliage that will keep weeds under control. Its extensive root system makes it the best for stopping nutrients getting washed out of the soil. Grazing rye must be chopped down between March and April or it becomes extremely tough to dig in. Like vetch, grazing rye inhibits germination of direct sown crops, so it is best to grow potatoes or transplanted crops afterwards. Sowing in rows is preferable if birds are likely to eat the seed.



References

1. Garden Organic Green manure fact sheet
2. Anton Rosenfeld and Francis Rayns, *Sorting out your soil: a practical guide to green manures*, Cotswold Grass Seeds Direct.