

## Summer Green Manures

### **Phacelia**

Phacelia is very quick to establish and matures in around 10-12 weeks. Summer sown phacelia is grown for its ability to smother weeds, produce a large root mass for improving soil tilth and provide a short term habitat for beneficial insects. Although not a particularly good source of nectar, when phacelia flowers it attracts large numbers of beneficial insects such as bees, wasps and hover flies. However, it must be incorporated before setting seed or it will reappear as a weed. Broadcast or drill 4 kg per acre (10 kg/ha).

£8.70 per kg

### **Buckwheat**

This aggressive green manure germinates extremely quickly and is very rapid to establish, reaching maturity in around 10-12 weeks. Buckwheat has a broader leaf than both Mustard and Phacelia and is excellent for suppressing weeds although it has much finer, shallower root structure. Unlike mustard or phacelia it will re-grow if cut at the onset of flowering which is ideal for mulching until the frosts kills it off. Its succulent stems and fine roots break down very quickly after incorporation leaving the topsoil friable. Buckwheat scavenges available phosphate releasing it again during decomposition to the following cash crop. It can lift 10 times more phosphate than forage rye. Due to its shallow roots buckwheat does not tolerate drought, wet or compacted soil conditions. Seed is drilled at 25kg per acre (60/ha) or can be broadcast at 30 kg per acre (80 kg/ha). The seed should be sown at a depth of 1 cm.

£2.51 per kg

### **Mustard**

Mustard is a rapid growing cover that is not winter hardy. It is easily established and used to mop up nitrogen, suppress weeds and reduce wireworm populations.

Sown between the summer harvest and an autumn sown cash crop, it provides a large bio-mass in 8-10 weeks. It should be incorporated at or before the onset of flowering as it will run to seed quickly and if left too long can become woody and difficult to deal with. Seed is sown from mid April - September at 8-10 kg per acre (20-25 kg/ha) and can be broadcast or shallow drilled.

£2.76 per kg

### **Sweet Clover**

Sweet Clover is the king of green manures. In a single season it can add massive amounts of organic matter, fix nitrogen and penetrate the subsoil with its deep roots. These effects can be increased by leaving it down a further year, see page 52. Initial establishment can be slow, but after 4-5 weeks there is an explosion of growth. At this early stage sweet clover starts to fix N and smother weeds. It can grow to 2-3 feet from seed in about 12 weeks and fixes in excess of 150 kgN/hectare.

Unlike other summer green manures this crop will need to be carefully destroyed so regrowth in the next crop is minimised. Seed should be inoculated prior to sowing. Inoculum costs £8.00 per sachet, each sachet treating 25 kgs of seed. Seeds are small and require sowing at 1-2 cm into a warm, well prepared seedbed. Sow from mid April - September at 6 kg per acre (15 kg/ha).

£3.84 per kg

### **Organic Matter**

One of the main purposes of summer green manures is to add organic matter to soil. Organic matter is the life within the soil and is derived from decaying plant and animal life. Each time the soil is cultivated organic matter is depleted and when a crop is harvested much of the biomass is removed. Crop residues (roots and straw) are high in carbon and the quality of this organic matter is poor. Organic matter provides crops with nutrients, especially nitrogen and as it decays further it forms humus which is vital for good soil structure.

Over many years arable production has been depleting soils of organic matter. In former times organic matter was replenished with farmyard manure. Nowadays, the most effective way of adding organic matter is to grow green manures.

### **Summer Green Manure**

There is often an opportunity during the summer to grow a fast growing fleshy annual green manure. These crops add organic matter, mop up surplus soil nitrogen, suppress weeds and act as a break crop by interrupting pest and disease cycles.

Summer green manures are planted from late spring onwards on bare ground or immediately after cereal harvest and are incorporated before the sowing of a winter cash crop.

A good summer green manure will be ready for turning in after only 8 - 10 weeks. These crops give good leaf canopy cover to block out light which suppresses weed growth. They are easy to establish with many species able to grow on the soil surface without the need for cultivation. The seed is cheap and the crops are usually very reliable. One further advantage of these fleshy annual plants is that incorporation is simple.