

# Cover Crops

## WHAT ARE COVER CROPS AND HOW DO THEY WORK?

Cover crops, or green manure, are legumes or grasses that are planted in garden beds as a means of improving soil, loosening compaction, adding organic matter and preventing erosion. Typically most cover crops are planted in the fall and worked into the soil in the spring.

As it decays, green manure forms humus, resulting in improved soil structure, aeration and capacity to retain moisture and nutrients. In turn, soil-dwelling fungi and bacteria work to break down the humus, releasing into the soil nutrients usable by plant material. See our information sheet titled 'Soil Health' for additional reading.

One form of bacteria that inhabits soil, Rhizobium, has a symbiotic relationship with legumes such as fava beans, clover and vetch. This particular bacteria draws nitrogen from the air and affixes it to nodules that exist on the roots of legume plants. Once the plants break down, they release the stored nitrogen into the soil, thereby increasing fertility.

Green manure in the form of grass crops (rye, barley, etc.) add necessary organic material (the food component) to soil, but not nitrogen. Often gardeners choose to plant a combination of legumes and grasses to take advantage of the benefits of each.

## WHAT ARE THE BENEFITS OF USING COVER CROPS IN THE HOME GARDEN?

- Improved soil structure and nutrient content
- Improved aeration (and thereby improved drainage and more oxygen available for plants and microbes)
- Increased water absorption
- Increased ability to hold nutrients
- Habitat for beneficial insects and microorganisms
- Legume green manure hosts bacteria that fix nitrogen, which then becomes available as a plant nutrient
- Weed suppression (thanks to the shade created on the soil as the crop grows)
- Erosion control

## WHEN AND HOW ARE COVER CROPS PLANTED?

### Fall-sown crops:

When the rain begins in fall it is time to plant cover crops. The soil is still warm enough for successful germination and there is generally sufficient time for plants to develop and grow prior to frost. Several members of the legume family do have good frost tolerance, yet can be slower to develop than grass crops. For this reason, gardeners often plant a combination of grasses and legumes, allowing the grass crop to perform as erosion control and protection for the slower growing legume seedlings. Additionally, when legumes are planted in a new area of the garden, inoculating them at planting time increases their nitrogen-fixing ability.

When spring arrives, 3-4 weeks prior to planting, is the time to gently till green manure/cover crops into the soil. Large areas can be mowed down and gently tilled in. Following this schedule allows enough time for organic material/green manure to break down and release its nutrients in to the soil.

Examples of fall-sown crops: crimson clover, common vetch, Austrian peas, fava beans and annual ryegrass

# Cover Crops

## **Spring and Summer-sown crops:**

Once the danger of hard frost has passed, spring and summer cover crops can be planted. Planting green manure during the growing season is helpful with weed suppression, erosion control, food for beneficial insects and nitrogen fixing. Additionally, green manure can be used as a rotation crop to aid in nutrient replacement after vegetables, herbs and flowers have been grown. Consider growing a spring or summer-sown cover crop between vegetable rows (i.e. tomatoes, kale), vine crops and berries.

\*Note: To prevent regrowth, be sure to gently till in these cover crops *before* they go to seed!

## **Planting Cover Crops**

Prior to planting green manure, rake the area smooth and dig rows approximately 3 inches deep and 1 foot apart. If using legumes, treat them with inoculant. Sow the seeds directly in the rows and replace the soil to cover. Although application rate varies by crop, in general, the application rate for many cover crops is 1-3 pounds per 1,000 square feet. When purchasing your seed be sure to read the sowing rate information provided on the bulk container.

Examples of spring and summer-sown crops: buckwheat, soybean, oats, non-dormant alfalfa and yellow blossom clover