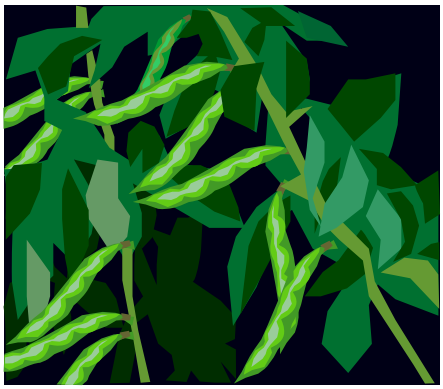
Legumes Good for Families and Soil



Gardeners can feed their families and enrich the soil by growing legumes, such as green beans, soybeans, lentils and peas. Legume roots produce their own nitrogen, which is a major fertilizer nutrient needed by all plants for growth. Nitrogen is produced in nodules that form on the roots of legumes, which contain Rhizobium bacteria. The bacteria take nitrogen from the air and convert it into a form the plants can use.

When legumes are pulled up in the fall, excess nitrogen from the nodules is left in the soil. The excess organic nitrogen can be used by other plants the following growing season. It's considered organic nitrogen because it was produced naturally, making green beans or peas great rotational crops in an organic crop production system.

Organic growers prefer organic nitrogen because of its natural origins and because it breaks down slowly in the soil, thus slowly feeding plants throughout the growing season. Synthetic nitrogen fertilizers tend to release nitrogen quickly and are harsher on the environment. Synthetic nitrogen fertilizers are generally applied in split applications during the season to mimic the slow release of organic nitrogen sources.

Each specific legume generally requires a specific type of Rhizobium bacteria to produce nodules on their roots. Gardeners who have never grown green beans before can purchase small bags of inoculum or bacteria from most popular vegetable seed catalogs. Before planting beans, open the package and pour in the dust-like bacteria among the seed. Shake the package and then plant. Nodules will form on the roots as they develop. The bacteria will remain in the soil, making it unnecessary to inoculate the seed next year.

Do not apply extra nitrogen fertilizer to bean crops. Doing so makes bacteria in the nodules lazy, encouraging them to stop producing their own nitrogen. Legumes that are particularly popular in the home vegetable garden include lima beans, peas, edible soybeans, lentils and fava beans. When planting, be sure to purchase appropriate strains of Rhizobium bacteria for each type of legume.

This article adapted from Cooperative State Research, Education and Extension Service, USDA. Please contact Ken Churches at cdcalaveras@ucdavis.edu or (209) 754-6475 with your agricultural questions. To speak with a Certified Master Gardener: Calaveras (209) 754-2880, Tuolumne (209) 533-5696, Amador (209) 223-6837, El Dorado (530) 621-5543.