

LENTIL

Gram, Masur, Red Dahl

Lens culinaris

Fabaceae

ECHO® PLANT INFORMATION SHEET

Description

Lentils are among the oldest of cultivated crops. This species has long been cultivated along with cereal grains in the semi-arid regions of the Middle East and in Northern Africa. Lentils are classified as pulses or food legumes. Lentil is well adapted to semi-arid growing conditions within cool growing seasons of warm temperate regions, although it tolerates subtropical climates and high elevation tropical environments. It is grown as a summer annual in temperate regions and as a winter annual in subtropical climates.

Origin

Mediterranean basin or West Asia.

Uses

The seeds are used in the preparation of soups, casseroles, curries, and stews. A Lentil and rice dish, still served in the Middle East, presumably was the mess of pottage referred to in the biblical account of Esau and Jacob. The young pods may be eaten cooked like sugar peas. Lentil flour, obtained from yellow Lentils, often is mixed with cereal flours for baking breads. Sprouted seeds are eaten as a vegetable or added to salads and soups. The high quality Lentil straw and the bran from seed processing are used as animal feeds. Lentil, a nitrogen-fixing species, may be used as a green manure crop. Lentil seeds have been processed as a source of commercial starch.

Common Names

- Spanish
 - Lenteja
- French
 - lentille

Cultivation

- Elevation: 0-2500 m (8200 ft)
- Rainfall: as little as 250 - 300 mm (10 -12 in)
- Temperature: 24C° (75° F)
- Soil: tolerates a wide range of well-drained soils; however, it dies quickly in waterlogged soils.

Lentil seeds may be sown early in the spring season, as the seedlings tolerate near-freezing temperatures. Seeds may be broadcast or drilled in rows at depths of 2.5 to 5 cm (1-2 in), or slightly deeper if the surface soil is dry. Lentil seeds should be inoculated with an appropriate pea or Lentil strain of the nodule-forming *Rhizobium* bacterium unless the field recently has been used to grow Lentils or chickpeas.

Normally, Lentils produce sufficient nitrogen through nitrogen fixation to supply their needs. In very low nitrogen soils, however, it is advisable to supply a starter fertilizer including nitrogen. Phosphorus and potassium may be included in a starter fertilizer, if needed. Sulfur, an element often required by legume crops, also may be needed. Soils deficient in molybdenum, a trace element needed in nitrogen fixation, may require this fertilizer supplement. The Lentil seedbed should be free from weeds, as weed competitors typically lower Lentil yields.

Harvesting and Seed Production

Lentil should be swathed (cut and windrowed) when the plants turn yellow and the pods become brown to yellow-brown. Swathing should be done when the plants are moist with dew to prevent seed shatter. Allow from 5 to 10 days for grain and straw to dry prior to combining or threshing. Lentils should be dried to 14% moisture to avoid spoilage during storage.

Pests and Diseases

Lygus bugs, aphids, wireworms, and seedcorn maggots can cause crop losses in North America. In Southeast Asia, insect pests include the gram caterpillar, the gram cutworm, white ants, and a weevil (*Callosobruchus analis*). Bud thrips, bean seed beetles, bean weevils, and other cutworm species have been noted as additional Lentil pests. Ascochyta blight (*Ascochyta fabae f. sp. lentis*), Fusarium wilt (*Fusarium oxysporum f. sp. lentis*), a rust species (*Uromyces viciae-fabae*) and root rots (*Rhizoctonia* spp.) are frequently cited fungal diseases. A variety of Lentil yellows and other viruses such as Alfalfa mosaic virus, Bean yellow mosaic virus, Broad bean mottle virus, and Cucumber mosaic virus have been noted for Lentils. Some parasitic seed plants, such as broomrapes (*Orobancha* spp.) and dodder (*Cuscuta hyalina*) attack Lentil. The severity of Lentil diseases often is reduced through management techniques such as: crop rotation, use of disease-resistant varieties, removal or destruction of diseased crop materials, and seed fungicidal treatment prior to planting. Cereal grains are good crop rotation species with Lentils. Avoid the use of other legume species such as faba bean, field bean, field peas or soybeans in crop rotation sequences, as these crops often will harbor similar disease organisms.

Cooking and Nutrition

Cooked Lentil seeds are a highly digestible food source, rich in protein (up to 30%) and carbohydrates (about 60%) and low in fat. Lentil's quick cooking characteristic compared to other food legumes, its nutritional components and its digestibility have made it a food suitable for infants and invalids. Lentils complement the food values of cereal grains; its protein is rich in lysine, arginine, leucine and sulfur-containing amino acids. Although Lentils contain anti-nutritional factors such as trypsin inhibitors and hemagglutinins, these substances are less concentrated in Lentils than in many other food legumes, and their undesirable effects are greatly reduced by cooking.

References

<http://ecocrop.fao.org/ecocrop/srv/en/cropView?id=7209>