

SUNFLOWER

Helianthus annuus

Asteraceae (Compositae)

ECHO® PLANT INFORMATION SHEET

Description

In North America, sunflower is grown in the Great Plains region of the United States and adjacent Canada. Traditionally, Russia has been the leading Sunflower producer. Argentina is another world leader in Sunflower production.

Uses

There are three primary uses of Sunflower: as an oilseed; as a whole kernel snack food for humans; and as birdseed. Sunflower oil is used as a salad oil and cooking oil. It can be made into a spread called Sunflower butter, or used as an ingredient in margarine and shortening. Oilmeal, a by-product of Sunflower oil processing, is used as a protein-rich feed additive for cattle and rabbits. Large dehulled kernels of striped-hull Sunflower varieties are eaten, plain or salted, as a health food or snack food. Small striped-hull Sunflower seeds and black-seeded oilseed types are marketed as birdseed.

Common Names

- Spanish
 - Girasol
 - Girasol
- Hindi
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Cultivation

- Elevation: 0-2500 m (8000 ft)
- Rainfall: 300-700 mm (12-28 in); relatively drought tolerant
- Temperature: 4°-40° C (40°-100° F)
- Soil: grows well on most soils
- Light: long photoperiods increase plant height Sunflower is cultivated as a row crop much like maize.

Although Sunflower is grown principally in temperate regions, it tolerates subtropical and tropical climates. It has a shorter optimum growing season (120 vs. 140 days) than corn. Sunflower seeds show dormancy until 30-50 days after harvesting, but this is easily overcome by rinsing in water prior to sowing. Planting should be done just before or at the beginning of the rainy season. Plant seeds of stripe-hulled, large-seeded varieties 5-8 cm (2-3 in) deep in rows 50-100 cm (20-40 in) apart and 20-30 cm (8-12 in) apart within the row. Plant seeds of the smaller black oilseed varieties 3-4 cm (1.5 in) deep in rows 30-45 cm (12-18 in) apart; space the seeds 15-20 cm (6-8 in) apart within the rows. It is advisable to apply a thin band of phosphate fertilizer below the seeds at planting time. A narrow furrow approximately 10 cm (4 in) deep may be trenched to accept the phosphate fertilizer; cover the fertilizer with 5 cm (2 in) of soil before adding seeds. Sunflowers use nitrogen abundantly and they should be given nitrogen fertilizer during the rapid growth phase. Weeding is important, especially in the seedling stage. Sunflower normally develops rapidly and produces shade that hinders further weed production.

Harvesting and Seed Production

At maturity, the backs of Sunflower heads turn yellow and the outer bracts turn brown. Bird predation on ripening floral heads is often a problem. If heads must be harvested before the seeds are ripe, place the cut heads in a sunny environment and turn them often to aid head and seed drying. Thresh dried heads on an abrasive or slatted threshing board. Winnow away chaff and other plant debris to retard mold and to reduce the number of places where seed pests may become established. Oilseeds need to be processed as soon as possible after harvest as oil quality diminishes quickly. Dry seeds stored below 10° C at 50% relative humidity will retain their viability for several years.

Pests and Diseases

Leaf molds and rusts are troublesome diseases of Sunflowers in some regions. Preventive measures used to reduce the severity of these and other Sunflower crop diseases are: use high quality disease-free seed; employ a crop sequence that repeats the use of Sunflower preferably only once every 4 years; remove crop residues soon after harvest; if possible, plant disease-resistant varieties; and destroy volunteer plants soon after they appear, as they may serve as hosts for disease organisms. Insect pest problems are not predictable; however, the disease preventive practices mentioned above are generally applicable to pest control as well. It is important to plant Sunflowers promptly at the beginning of the rainy season to get a head start over pest species' populations.

Cooking and Nutrition

In addition to their use as snack foods, Sunflower seeds have food uses in the preparation of cakes, cookies, muffins, soups and ice creams. Sunflower seedlings, referred to as Sunflower lettuce, obtained preferably from germinating black-seeded varieties, are a specialty food. In Ethiopia, boiled seeds are mixed with water and honey to prepare a beverage called suff. Germinated seeds blended with water may be fermented to produce a seed yogurt. Sunflower seeds are a good protein food source. The protein content of dehulled seeds is reported at

24%. Oilmeal also is a nutritious food or feed material. Its constituent analysis reveals 50% protein, 4% oil, 36% carbohydrate, and 8% mineral content. Sunflower seed protein has high digestibility and high quality. Its digestibility has been likened to that found in soybeans. It has been assessed at 93% of the nutritional value found in egg protein. The lysine amino acid content, however, is limiting in Sunflower protein. Some alternative protein source in the diet is desirable in addition to that provided bySunflower.