

Last updated: 20th September 2002

DILL

Family: *Umbelliferae*

Genus: *Anethum*

Species: *graveolens*



Source: www.sarahsarchangels.com/images/dill.jpg Source:
www.aheb.com/garden/d-l.html

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General Background

Dill is a quick-growing herb with fine, ferny leaves which is very similar in appearance and structure to Fennel, but is an annual plant. When mature it is usually 60-100 cm high with hollow stems and blue-green foliage. Dill is sometimes known as Russian Fennel.

Dill is a native of southern Europe and western Asia where it is a frequent weed of arable and waste land. During medieval times, dill escaped from cultivation to most of the rest of Europe including Britain and Scandinavia. Dill is also known as common dill, American dill, European dill, and Danish dill. This widely cultivated species has sometimes been classified as *Peucedanum graveolens*.

The name 'dill' may come from the Norwegian word dill (to lull), referring to the alleged carminative properties.

Details of Quality Characteristics

The seeds of dill contain the essential oil carvone. Dill also produces petroselinic fatty acids. Parts of the plant that are of use are leaves, seeds and oil. The leaves and fruit have very different properties, but both are used for flavouring. The essential oils of dill differ in flavour and odour depending on whether they are obtained from mature seed or from dill leaves.

Table 1 Some of the chemical constituents of dill seed oil and dill herb oil.

| Dill seed oil | Dill herb oil |
|----------------------|----------------------|
| d-carvone | d-phellandrene |
| d-limonene | terpinene |
| d-phellandrene | limonene |
| -pinene | carvone |
| diterpene | dillapiole |
| d-dihydrocarvone | isomyristicin |
| -phellandrene | myristicin |
| -pinene | |
| 1,8-cineole | |
| -myrcene | |
| para-cymene | |
| -thujone | |

Myristicin, apiol and dillapiol present in dill oil are effective naturally occurring insecticides. Myristicin is also known to be responsible for psychoactive and hallucinogenic properties in some other plants, and the apiol content may be responsible for diuretic properties.

The quality of dill oil can fluctuate greatly, depending on the percentage of seed oil and the physiological maturity of the seeds used for oil. The time of harvest may also be significant, because carvone is synthesised during the day from phellandrene breakdown. Dill herb oil is sometimes contaminated with terpenes from other sources.

The amount of oil found in seeds range from 8.5-10.5 (% of seed weight).

Current Production and Yields

Dill is cultivated on a commercial scale in countries in which it is most used. These include Greece, Scandinavia, Germany, eastern Europe and in the Former Soviet Union. It is infrequently grown on a commercial basis in the UK, France and south-west Europe. Commercial seed yields from dill grown in Oregon in the USA range from 670 to 1370 kg/ha.

Constraints upon Production

The hardy plant requires long days and cool weather, and is sensitive to environmental stresses, such as low moisture, hail, high temperatures, strong winds and hard rains during the flowering and seed maturation period. The plant grows best in deep, fertile loam soils.

Dill bolts if overcrowded or in poor dry soil. It should not be grown near fennel because the two may hybridise, producing plants intermediate in flavour and appearance. Dill reputedly has an adverse effect on carrots but is allegedly beneficial to cabbage if planted nearby.

The timing of harvest is crucial to maximize seed yield, because seeds tend to ripen at different times, and seed shattering is a potential problem. Generally, harvesting of dill leaves or the essential oil of dill is done before the plant flowers. Harvesting for seed begins when the bulk of the seed crop is physiologically mature. Plants used for essential oil production are steam distilled on the day of harvest to minimize volatilisation losses.

Markets and Market Potential

The oil is used in proprietary medicines, soaps, detergents and food flavouring. Myristicin, apiol and dillapiol present in dill oil are effective naturally occurring insecticides.

As a medicinal plant, dill has been used as an antispasmodic, carminative, diuretic, stimulant and stomachic. It has also been used as a remedy for cholic and insomnia and as a stimulant for lactation.

Dill seeds are used whole or ground as a condiment for flavouring meats, sauces, stews, breads, vinegars, pastries and vegetables. Dried and fresh leaves are used in

sauces, salads, soups, stews and vinegars. Dill is an important flavouring agent in pickling.

Other Information

Plant in full sun and well drained soil. Plants should be placed about 52.5 cm apart and fertilized with potassium and phosphorous when the plants start to flower.

When grown for seed production, sowing should be done early, as soon as the soil is warm and friable, to allow plenty of time for growth and thus ensure that the seeds will ripen before the weather becomes cool. If leaves and flower stems only are wanted sowing need not take place until early summer. Fresh young growth can be cut for use as required throughout the summer and the plants harvested when they develop a reddish-purple flush.

Dill will provoke photodermatitis and contact dermatitis in humans. Parsley worms, the striped caterpillars that become black swallowtail butterflies feed on dill.

Research

Useful Web sites

<http://www.hort.purdue.edu/newcrop/med-aro/factsheets/DILL.html> - General information provided.

<http://www.wholeherb.com> – General information including appearance, propagation methods, harvest and potential problems.

www.sarhsarchangels.com/images/dill.jpg - Photograph

www.floridata.com - General description including location, culture, uses and features.

www.gardenguides.com/herbs/dill.htm - General description and cultivation methods plus medicinal and culinary uses.

BioMat Net

Contacts

References

1. De Rougemont G.M. 1989 A field Guide To The Crops of Britain and Europe.
2. Simon, J.E., Chadwick, A.F and Craker, L.E. 1984. Herbs: An Indexed Bibliography. 1971-1980. The Scientific Literature on selected herbs, and Aromatic Medicinal Plants of the Temperate Zone. Archon Books, pp 770. Hamden CT.

