

Kale

borecole, cole

Brassica oleracea v. acaphala

Brassicaceae Family

ECHO PLANT INFORMATION SHEET

ORIGIN, Description, Uses - Kale is a very hardy form of cabbage that is native to the eastern Mediterranean or Asia Minor where it has been cultivated as a vegetable for two thousand years. There are many varieties of leaf shape, color and height from 2 m (6') high to a low mat of curled shoots. In addition to being very high in vitamins A and C, it is considered an anti-cancer food because of its organosulphur compounds that cause the liver to produce enzymes that detoxify cancer-causing chemicals. In high altitude areas of New Zealand and Great Britain, kale is used as part of a diet to overwinter calves and sheep. It has a higher protein yield than maize.

CULTIVATION – Kale can be direct seeded into fertile, slightly acid soil (6-6.5 pH.), when soil temperature is 13 - 24°C (55-75°F), 4-6 weeks before the last spring frost and again 10 weeks before fall frost. It is very hardy at temperatures as low as -15°-12°C (5-10°F) even surviving under snow. When left in the garden, its flavor improves after frost. Kale is best planted in plots 1.2 x 1.2 m (4x4') in order that the plants will shade out weeds, keep the soil cool and moist, and be harvested faster. Kale prefers moist soil but grows with as little as 300 mm. Lack of moisture will cause wilting which will hasten bolting.

HARVESTING & SEED PRODUCTION – Kale leaves can be harvested, starting from the outside, continually after the weather has cooled. After 10-12 weeks growth, it can be baled for livestock feed. This brassica is a biennial that does not flower and produce seed until its second growing season. If growing for

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seed, plant it far away from other brassicas (cabbage, broccoli etc.) as it will cross-pollinate. Yellow flowers form on a thick stalk and the resulting pods can be harvested when they have turned brown and the seeds rattle. Let the pods dry completely in a shady spot with good air circulation. The pods can be crushed by walking on them and the seeds will store for 4 years in a cool, dry place.

DISEASES AND PESTS- Brassicas are not very susceptible to diseases but the larval forms of several flies and moths eat the leaves and contaminate them with their feces. Suggested treatment is the application of the bacterial pesticide, *Bacillus Thuringiensis* (Bt) or floating row covers to keep the adults from laying eggs on the underneath side of the leaves.

COOKING AND NUTRITION – As temperatures fall, the kale plant produces more sugar and stores it in the leaves in order to lower the temperature at which the leaves will freeze. This accounts for the increase in sweetness and decrease in bitterness common to kale that has been allowed to remain in the garden until several freezes have passed. It is essential to thoroughly wash dirt and pesticide residue from the curly, compact leaves. Leaves can be eaten raw, steamed or lightly stir-fried to retain the vitamin C, calcium, potassium, iron, manganese as well as beta-carotenes that the body will use to form vitamin A. Leafy brassicas do contain oxalates which tend to interfere with the body's absorption of calcium. Drinking milk or taking calcium supplements should be done 2-3 hours after or before eating kale for maximum nutrient metabolism.

ECHO 17391 Durrance Rd., N. Ft. Myers, FL 33917-2239 USA
tel: (239) 543-3246; fax: (239) 543-5317; e-mail: echo@echonet.org; website: www.echonet.org
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