

Last updated: 19th November 2002

ELDER

Family: Caprifoliaceae

Genus: *Sambucus*

Species: *nigra*



<http://ourworld.compuserve.com/homepages/BMLSS/Elderberry.jpg>

Source <http://www.crcd.org/elderberry.jpg>

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General Background

Elder is common in northern and central Europe. The plant is a much branched, large shrub. The leaves are compound, with 5-7 oval or lanceolate, toothed leaflets, which smell strongly when crushed. Flowers are about 5 mm in diameter, creamy white in flat topped clusters up to 20 cm across. Fruits are purplish black when ripe, but occasionally remaining greenish white and approximately 7 mm in diameter, on red stalks. Because elderberries will tolerate low soil fertility, they are frequently found growing on waste ground.

Details of Quality Characteristics

The flowers of elder contain up to 30% flavonoids (rutin, quercetin), phenolic acids (antiseptic, anti-inflammatory), tripterpenes, sterols, volatile oil (up to 20%), mucilage, tannins.

The berries contain cyanogenic glycosides - sedative and relaxant effect on the heart and muscles in small doses along with flavonoids, anthocyanins and vitamins A and C. Elder contains the anthocyanins chrysanthemine and sambucin (derivatives of quercetin).

Fresh, raw elderberries of *S. nigra* can cause nausea and vomiting because they contain two cyanogenic glycosides that cause the release of hydrocyanic acid after ingestion.

Recent studies have suggested that the haemagglutinins contained within the berries interfere with the virus which causes flu, so helping to combat the disease. (<http://www.canuc.ca/>)

Current Production and Yields

Although its limited economic use has meant it has not generally been cultivated in northern Europe, elder is often cultivated on a small scale in southern Europe.

During 1997, 100 ha of Elderberry were under cultivation in Germany and a smaller area in Denmark to provide a basis for anthocyanin dyes. The species grown is *Sambucus nigra*.

Table1. Fruit yields of 8 elderberry cultivars in Illinois during a 3-year test.

| Cultivar | Year 1. kg/ha | Year 2. kg/ha | Year 3 kg/ha |
|-----------------|----------------------|----------------------|---------------------|
| Adams | 853.2 | 8570.2 | 7561.0 |
| Adams | 4186.9 | 15126.0 | 15424.7 |
| Johns | 739.3 | 8488.9 | 735.0 |
| Kent | 1720.8 | 7615.1 | 7843.4 |
| Nova | 866.8 | 13278.9 | 15519.4 |
| NY21 | 1632.8 | 7770.6 | 7696.2 |
| Victoria | 921.2 | 7601.3 | 7594.9 |
| York | 338.8 | 9369.5 | 7983.6 |

(Skirvin and Otterbacher)

Constraints upon Production

It is so common in northern and central Europe on waste land, even in centres of towns, that cultivation has not been necessary for the limited economic use it has.

In Portugal the problem of adulteration of port with elderberry juice was so serious that the growing of elder trees was prohibited there at one time.

Markets and Market Potential

Both the flower and the fruit are widely used in Europe to produce fermented drinks. In the 1700's elderberry was used extensively for colouring drinks, both in its own right in elderberry wine and somewhat deceptively in 'British wine', 'Claret' and 'Bordeaux' wines. Today elderberries are used as a source of red food colouring and dye. They are used in combination with other fruits for making wines and jams which are rich in vitamin A and C.

Elderberry has many medicinal properties; Elderberry leaves are considered purgative, expectorant, diuretic and diaphoretic. When boiled with linseed oil elder leaves have been used as treatment for haemorrhoids in England.

Elderberries have been a traditional remedy for constipation, colic, diarrhoea, colds and rheumatism. It promotes the removal of waste products from the body and is considered a powerful immune stimulant. The viburnic acid contained in the berries promotes perspiration. The flowering tops are useful in the treatment of catarrh and allergies, also in the treatment of arthritis by virtue of the fact that they encourage sweating and urine production.

Elder leaf ointment is another traditional remedy for wounds and bruises, it is also good rubbed on the back to promote easier breathing from colds and flu. Elderberry tea is an old effective remedy for coughs, sinus congestion and reducing swelling of sore throats.

Research indicates that elder extract is ideal for coughs, colds and flu. An extract, Sambucol[®] has been developed. This works due to haemagglutinins, found in the elderberry extract, which interfere with the flu virus. An infusion of elder is also relaxing and produces a mild perspiration that helps reduce fever. Sambucol[®] may also be effective against herpes simplex (cold sores). Several other products including liquids, lozenges and capsules are now available which contain elder extracts to help combat colds and flu.

Several cosmetic products containing extracts of elderberry are available on the market, the mildly astringent properties make it ideal for facial toners and cleansers.

For more information on medicinal uses of elderberry see: <http://www.allsands.com>

Other Information

On the whole elder is a poorly researched herb. Elder is cultivated from cuttings in spring. Flowering tops are harvested in late spring and the berries are picked in early autumn.

The plant is easily grow and can tolerate most soils and situations. It grows well on chalk, moist loamy soils and heavy clays. It prefers a sunny position. Young plant stems can be killed by late frosts but they are soon replaced at the ground level.

Flowers appear very attractive to insects and fruits attract birds drawing them away from other cultivated fruits.

Research

New research from Europe suggests that Elderberry can provide the nutritional support your body craves during the cold and flu season. Loaded with bioflavonoids and other key phytochemicals, Elderberry is rapidly becoming one of the most popular therapeutic herbs. Elderberry capsules are convenient, powerful and are standardized to guarantee 5% total flavanoids. Also available are soothing, healing Elderberry lozenges and a fast-acting liquid extract.

"A...virus enters cells by puncturing their walls with tiny spikes that cover its surface. The active ingredients in elderberry bind to and cover the spikes, preventing them from piercing the cell membrane. The viral spikes are also covered with an enzyme that the virus uses to break down the cell wall. Elderberries have high concentrations of various bioflavonoids which may also inhibit the action of this enzyme." Dr. Earl Mindell, The Mindell Letter. (<http://www.quantumhealth.com/productgroups/coldflu.html>)

According to laboratory research, an extract from the leaves, combined with St Johns Wort and Soapwort, inhibits influenza virus and herpes simplex virus. A double blind study on humans determined that an extract of elderberries is an effective treatment for flu. Animal studies have shown the flowers to have anti-inflammatory properties. (Z. Zakay-Rones *et al* 1995, J, Serkedjieva *et al* 1990 and N. Mascolo *et al* 1987.)

Useful Websites

<http://www.quantumhealth.com/productgroups/coldflu.html> - Products containing elderberry

<http://www.healthwell.com/healthnotes/Herb/Elderberry.cfm> - Basic information on elderberry and its medicinal properties

<http://www.vitacost.com/science/nutrients/elderberry.html> - Health concerns and solutions using elderberry

www.canuc.ca/New%20Use%20Documents.nsf - Potential for colorants from plant sources in England and Wales

<http://www.allsands.com> - The medicinal uses of elderberry

BioMat Net

[FAIR-CT98-9653 – Optimisation of raw material characteristics of elder for the production of beverages](#)

Contacts

References

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