What's good in THE BILBERRY?

Bilberry *(Vaccinium myrtillus)*

- The bilberry is low in energy but high in fibre (3,3 g/100 g) and phonyphenols.
- The bilberry contains vitamin C (15 mg/100 g) and vitamin E (1,9 mg/100 g).
- Unlike the cultivated blueberry, the bilberry is blue also on the inside, so it contains more flavonoids than the blueberry. Flavonoids are antioxidants, and together with vitamin C and E they can protect the cells of our organs from detriments caused by free oxygen radicals.
- According to the latest Finnish research, the bilberry contains 800 mg/100 g anthocyanidins, whereas the amount in the cultivated blueberry is only 140 mg/100 g (see figure). Due to its healthy components, the bilberry is widely used e.g. in the food and pharmaceutical industry in Asian countries.
- Flavonoids are best preserved in fresh unprocessed berries and frozen berries. Heated nectar contains almost 80 % and bilberry jam a good 60 % of the original amount of flavonoids.
- The bilberry is an ideal dietary choice for those observing their blood pressure. It is low in sodium and rich in potassium.
- Bilberry soup has traditionally been used to balance intestinal function.
- The active components of the bilberry have also been studied for crepuscular vision and the changes caused by ageing.

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Picking bilberries in nature is free

The bilberry *(Vaccinium myrtillus)* grows in the whole of Finland. Commonly it can be found in moist forests suitable for bilberry types, and on vaster fells and hillsides in the north.

After the lingonberry, the bilberry is the second most productive wild berry in Finland. It produces a crop of some 168 million kg annually.

Everyman's right enables free picking of the bilberry in Finland.

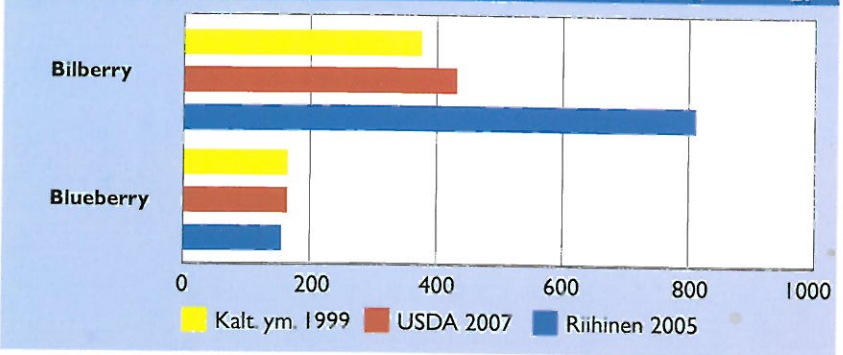
The bilberry ripens in July in southern Finland, and between July and August it can be picked all the way until night frosts reach the land. The best bilberry crops are produced in the provinces of Oulu and Lapland.

Bilberry in cooking

The bilberry can be used in soups, pastries, porridges and milkshakes. The berries are at their best when processed as little as possible.

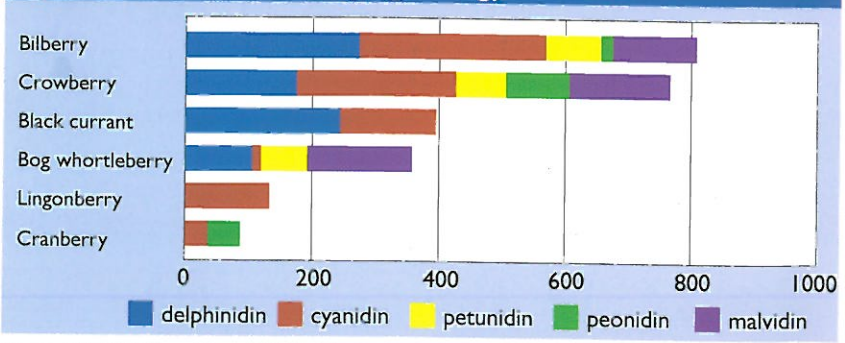
Companies use the bilberry to produce dried berries and powders.

Anthocyanidin (anthocyanin) contents of the blueberry *(V.corymbosum, V.angustifolium, V.ashei)* **and bilberry** *(V. myrtillus)* **(mg/ 100 g)**



Source: Riihinen, K.2005. Phenolic compounds in berries. Kuopio Universdity Publications C. Natural and Environmental Sciences 187. 97 p. USDA.2007. Database for the Flavonoid Content of Selected foods. Kalt, W., McDonald, J.E., Ricker, R.D., Lu, X. 1999. Anthocyanin content and profile within and among blueberry species. Can. J. Plant Sci. 79: 617–623

Anthocyanidin (anthocyanin) contents of berries (mg/100 g)



Source: Määttä-Riihinen K. et. al. 2004. Distribution and contents of Phenolic Compounds in Eighteen Scandinavian Berry Species. J.Agric.Food Chem.2004,52,4477–4486.

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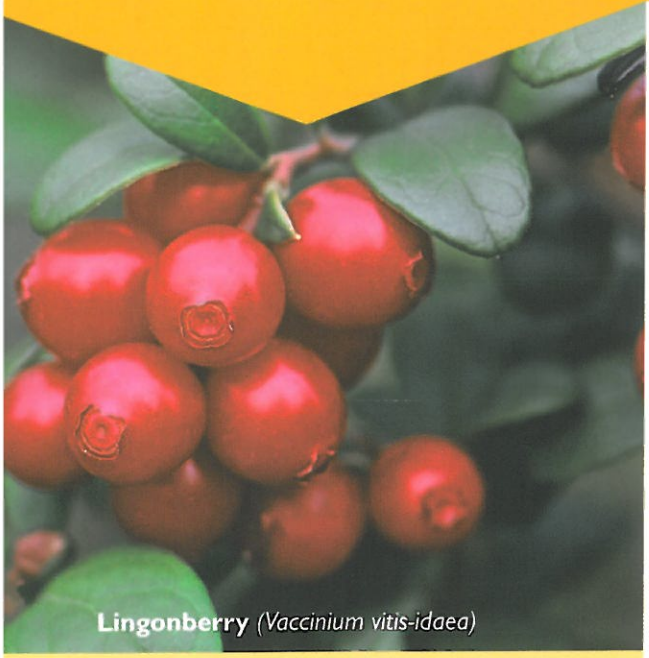
What's good in THE LINGONBERRY?



Lingonberry *(Vaccinium vitis-idaea)*

The lingonberry grows in heath forests in the whole of Finland

The lingonberry is the most productive wild berry in Finland. It is estimated to produce an annual crop of some 244 million kg.

The lingonberry is common in the whole country. The richest crops are yielded in the provinces of Lapland and Oulu and in the regions of Middle Finland.

Everyman's right enables free picking of wild lingonberries in Finland.

Lingonberry in cooking

The lingonberry is the most consumed berry in Finland. It is frequently used as mash to accompany meat dishes. The berry can be mixed with less acidic vegetables.

The lingonberry is suitable for e.g. baking, dessert soups and porridges.

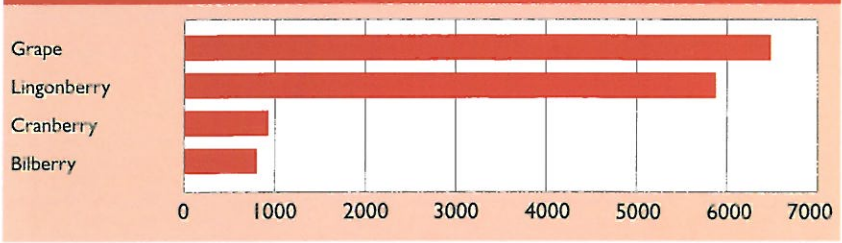
Jellies, jams, sauces and juices are the most common industrial lingonberry products. The lingonberry is also frequently used in the dairy industry.

Companies use the lingonberry to produce dried berries and powders that can be used in e.g. bread, cake and biscuit.

Lingonberry has high nutrient density

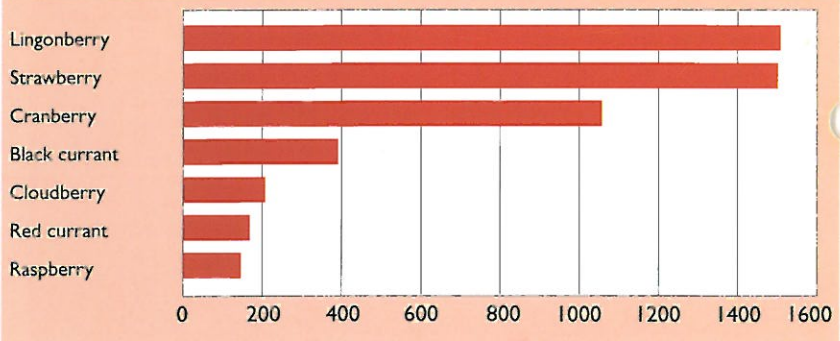
- The lingonberry contains e.g. vitamin E (1,5 mg/100 g)
- As for minerals, the lingonberry contains e.g. manganese (3,2 mg/100 g).
- For antioxidant effectiveness, the lingonberry is one of our best berries. The content of phenolic compounds decreases to some extent while preserving the berries.
- The lingonberry is rich in phytoestrogens, lignans. In many studies lignans are found to possess positive effects in hormone related cancer prevention.
- The lingonberry contains similar short-chain proanthocyanidins, which have been discovered to have protective effect on recurrent urinary tract infection in studies concerning cranberry.
- The lingonberry contains almost the same quantity of resveratrol as the red grape. Red wine is believed to protect the French from heart diseases.
- The lingonberry is rich in benzoic acid Thanks to this natural preservative, mashed lingonberries can be preserved in the basement throughout the winter.

The resveratrol content of berries and grapes (ng/g dry weight)



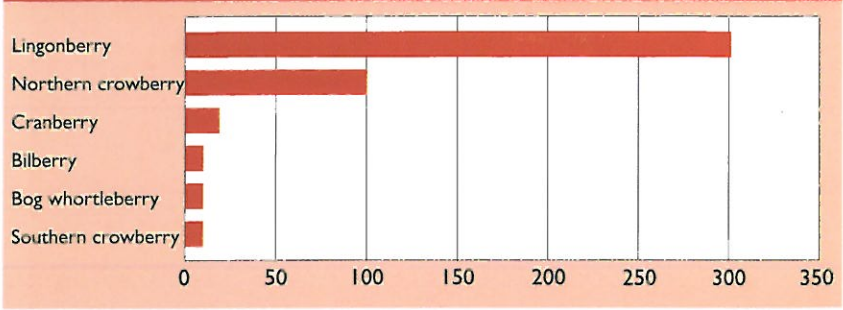
Source: Rimando A, Kalt W, Magee J, Dewey J, Ballington J. 2004. Resveratrol, pterostilbene and piceatannol in vaccinium berries. Am. Chem. Soc. 52:4713-4719.

The lignan content of berries (µg/100 g dry weight)



Source: Mazur W, Uehara M, Wähälä K, Adlercreutz H. 2000. Phyto-oestrogen content in berries, and plasma concentrations and urinary excretion of enterolactone after a single strawberry meal in humans. Br. J. Nutr. 2000;83:381-387.

The content of short-chain proanthocyanidins in berries (mg/kg)



Source: Riihinen 2005. Phenolic Compounds in Berries. Publications of The University of Kuopio C. Natural and environmental sciences 187.

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