



NJF Seminar 399

Beneficial health substances from berries and minor crops –

- How to increase their concentration in cultivated species, eliminate losses in processing and enhance dietary use

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Camelina Success Story

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Camelina Sativa (eng. False Flax) is an ancient oilseed crop, which has been cultivated in Europe during the Iron and Bronze Ages. It's originating from Mediterranean region and Middle- Asia. Camelina Sativa raised interest again at the 1980's, because of its high content of omega-3 fatty acids. Cultivation is in many ways similar to spring turnip rapeseed (*Brassica rapa*) cultivation. Size of seed is smaller than rapeseed: thousand seed weight of Camelina seed is 1 g, (spring turnip rapeseed 2 g). It's got relatively low input and cultivation costs. Growing time is in same level with spring turnip rape. Average yield in Finland is around 1 200 kg/hectare. Cultivation can be done with same equipment than grains and rapeseed. Raisio plc. has had camelina contract farming in relatively large scale since 2005. Camelina oil is used in Raisios food industry as an extra value ingredient.

Camelina oil is cold pressed from camelina seeds. The seeds contain about 40 % oil. Cold pressed camelina oil can be further processed using normal refining process. Deodorized camelina oil is odourless, flavourless and very mildly yellowish coloured fluid oil. Camelina oil has an excellent fatty acid composition: 40 % omega-3 fatty acids and 16% omega-6 fatty acids. Omega-3 and omega-6 fatty acids are essential fatty acids which have to be in diet, our body can not make these essential fatty acids. They are important for example for brain and nervous system development and function.

Usually western diet contains too much omega-6 fatty acids because sunflower and soybean oil is widely used. Omega-6 to omega-3 -ratio is in many cases 20:1. This balance should be changed. Recommendation (WHO, Health Canada) is that omega-6 to omega-3 -ratio should be 4:1 – 10:1. Camelina oil can be a great help in this. To get enough omega-3 per day you need to take 40 tablespoons of Olive oil (= 6 dl), but only ½ tablespoons of camelina oil. Raisio has added camelina oil to Keiju products which are spreads, fresh cheeses and oils. There's also camelina oil in Makuisa spreads and Benecol cholesterol reducing spreads.