

Oilseed Crops in Finland in 1994

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1. Cultivation of Oilseed Crops, Yrjö Salo

Oilseed crops are cultivated on about 70 000 hectares in Finland. This area is only four percent of the whole cultivated area, 1,8 million hectares. The main oilseed crop in 1994 was spring turnip rape (64 000 ha). Minor oil crops were spring rape (2500 ha) and oilseed flax (800 ha). The total yield of oilseed crops has been about 110 000 tons.

In the year 1994 spring turnip rape and spring rape yields averaged 1600 kg/ha and 1760 kg/ha, respectively. These yields are near long term averages in our conditions. There is no big difference between the hectare yields of spring turnip rape and spring rape in Finnish conditions.

The growing period in 1994 in Finland was exceptional. During the sowing time in May, we had night frosts nearly every night. June was cold and rainy, but July was very warm and dry. The quality of the yield was good.

Oil mills make contracts with farmers to grow oilseed crops. The farmers get from the crop a basic price that has to be subtracted by factors of poor quality. Oilseed crop oil is mainly used for edible purposes in Finland. To a lesser extent, the oil is also used as lubricants e.g. in forest machines.

All turnip rape and rape varieties grown in Finland are of either Finnish or Swedish. The most popular spring turnip rape variety is Finnish KULTA. Another variety is Swedish KOVA. The newest Finnish variety, SISU, was released in the year 1994. The spring rape varieties are Swedish KUNTO and TOPAS. All these varieties are double low varieties.

2. Breeding of Oilseed Crops, Juha Vilkki

Boreal Plant Breeding is the new Finnish plant breeding Company owned by the state. Boreal Plant breeding was established in 1994 by combining the former Hankkija Plant Breeding Institute (=Anttila Plant Breeding) and Plant Breeding Institute of Agricultural Research Centre.

Boreal Plant breeding is specialized in breeding varieties for the northern conditions.

The main oil plant breeding program in Boreal Plant Breeding is for spring turnip rape (Juha Vilkki). We have also program for spring rape (Simo Hovinen) and linseed flax (Juha Vilkki).

A short growing season of long days with only some hours of darkness are the most exceptional features of the Finnish nature. Finnish Breeders aim thus at cultivars with rapid life cycles and high yielding capacity together with a desired seed quality.

Our varieties KULTA and SISU are among the highest yielding spring turnip rape varieties in the world. Skilled farmers in most favorable parts of Finland produce yields near 2500 kg/ha. The 00-cultivars of Boreal Plant Breeding are of high quality with a glucosinolate content of 10-12 $\mu\text{mol/g}$ seeds (measured by HPLC). Some of the most recent 00-lines with high yielding capacity have a glucosinolate content of 5-10 $\mu\text{mol/g}$ seeds.

Different breeding projects for spring turnip rape aim at cultivars with specific fatty acid compositions to meet the needs of industry. The most interesting material is spring turnip rape with an unusually high content of oleic acid (80-90 %). Additional material includes spring turnip rape with either high linoleic (30-40 %) or high palmitic (>10 %) acid content.

Table 1. The oilseed varieties cultivated in 1994 in Finland. The results are from the official trials of the Agricultural Research Centre of Finland during 1987-1994.

Name of variety	Yield kg/ha	Growing days	Protein %	Oil %
Spring Turnip Rape				
KULTA, standard	2270=100	103	21.9	45.1
KOVA	92 ^{xx}	+2 ^{xxx}	+0.2 ^x	-0.5 ^{xx}
SISU	99	+3 ^{xxx}	-0.2 ^x	0.0
Spring Rape				
KUNTO, standard	2130=100	118	23.6	45.2
TOPAS	93 ^{xx}	+1 ^{xx}	-0.4	+1.4 ^{xxx}

