

# Oil Crop Cultivation in Sweden in 1991

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## **Successful introduction of 00-cultivation also in the winter rape**

During the last years the demand for fodder-protein of 00-marked rape meal on the swedish market has increased. At the same time however the development has been a decreasing area of the summer crops, rape and turnip rape. Both this crops have been of 00-quality since several years. Therefor the growing area of winter rape made it necessary to change over to "00"-cultivars also in this crop a little earlier than was primarily planned.

By a signal of about twenty percent lower price for single low oil seed rape the growers of winter rape chosed double low cultivars in an intended extension. So on almost 60 % of the about 82.000 hectares of winter rape sown in autumn 1990 it was used german "00"-cultivars, principally Ceres and Libraska. A moderately mild winter and a careful growing technique resulted in good experiences of both wintering and yields. The registrated average figures of the cultivation in practice show better wintering as well as higher yields from the "00"-cultivars compared with the "0"-cultivars. In field trials however the newest swedish single low cultivars in mean had about 10-15 % higher yields than the "00"-cultivars.

For harvest 1992 of winter rape purposed for crushing and food industry only "00"-quality is contracted. Delayed harvesting time of preceding crops in August 1991 caused a decrease in the sown area to about 50.000 hectares of winter rape. Also for 1991/92 the actual cultivars are Ceres and Libraska.

## **Increasing use of rape seed oil for human consumption**

Since a couple of years the crushing industry and the association of the oil plant growers co-operate to increase the use of rape seed oil for human consumption.

Until 1990 about 35 % of the oil quantity from the normal quantity, 320 thousands tons, of harvested rape seed per year was used for food in Sweden. Almost all of the meal from that seed quantity is disposed on the domestic swedish fodder market.

By help of the new nutritional view on rape seed oil an intense work of information is going on. The food industry has now caught the new message and prefer the rape seed oil rather than other types of fat in many products. It is calculated that in 1991/92 the domestic use of rape seed oil for human consumption will increase to about 55 % of the normal annual production.

Table 1. Oil crop cultivation in Sweden. Yields and quality of seed

Cultivated crop	Seed yield kg/hectare at a moisture cont. of 18 %			Quality of harvested seed in 1991		
	1985-1990 in average	1990	1991	Oil content in % of dry matter	Protein cont. in % of dry mater in defatted meal	Chlorophyll content, ppm
Winter rape, 0	3.080	3.235	2.500	44,2	38,7	29
Winter rape, 00			2.670	44,6	38,9	27
Winter turnip rape, 0	1.995	1.960	1.490	40,5	41,6	39
Summer rape, 00	1.865	2.015	1.400	44,1	43,0	31
Summer turnip rape, 00	1.575	1.760	1.265	41,7	38,8	19

#### Low yields in all types of oil crops in 1991

In table 1 the mean figures of yields show unsatisfactory results of oil crop cultivation in 1991. For the winter crops this year effected frost damages in spring and a flowering more than one month delayed. With exceptional cold and rainy weather in June the period for building up seed became too short in all types of oil crops. In some regions there were also severe attacks of diseases; mainly *Verticillium dahliae* and *Botrytis* in the winter crops respectively *Sclerotinia* in the summer crops.

The figures of the seed quality also testify the unsatisfactory growing season 1991. The content of oil was lower than normal and the content of chlorophyll was unsatisfactory high in all crops. The short growing season caused however rather

high content of protein, which in Sweden also is an element determining quality and payment to the growers.

As it was the first year of cultivation "00"-quality in the winter rape there was a great interest about the content of glucosinolates. The mean figure here was on the satisfactory low level of 23 mikromols.

Table 2. Oil crop cultivation in Sweden. Areas and harvested quantities

Cultivated crop	Harvested area, 1.000 hectares				Production 1.000 tons at 8 % moisture content			
	1985-1990 in average	1989	1990	1991*)	1985-1990 in average	1989	1990	1991*)
Winter rape, 0	54,1	69,3	82,6	31,5	150	224	237	70
Winter rape, 00				41,8				99
Winter turnip rape, 0	4,5	8,1	8,2	7,2	8	15	13	10
Summer rape, 00	53,0	50,7	41,9	38,0	88	81	76	48
Summer turnip rape, 00	50,3	36,9	29,3	25,5	70	52	46	29
<b>Total</b>	<b>162</b>	<b>165</b>	<b>162</b>	<b>144</b>	<b>316</b>	<b>372</b>	<b>372</b>	<b>256</b>

\*) approx figures of 1991

### Decreased growing area and production

During a long period the area of oil crops in Sweden has been stable on about 165.000 hectares. Political procedures for decreasing surplus of especially the grain production also have influenced the interest of growing oil crops. In the first hand this has reference to the summer crops, which during the last years have shown decreasing areas.

In 1991 the total harvested area of oil crops was below the normal level at about 10 %. With low yields the production this year resulted in so low a seed quantity not sufficiently large to correspond to the demand of the domestic crushing industry.

Of the harvested seed quantity at about 255.000 tons in 1991 176.000 tons are of the double low quality. For harvest in 1992 only single low seed of winter turnip rape is contracted. With a sown area of only 2.000 hectares of that kind of crop almost all the swedish oil crop cultivation in 1991/92 will be of the "00"-quality. The contracted area of winter rape now, probably temporary, has been reduced. To get seed enough for the domestic crushing industry in 1992/93 it is important to raise the area of the summer crops in 1992.

### **Actual cultivars**

As mentioned before the german 00-cultivars Ceres and Libraska dominate in winter rape. For harvest 1991 there were also single low cultivars as the swedish Sv Nestor and WW Rustan. Such cultivars are in a little extent grown also in 1991/92 for other purposes than ordinary crushing. The very small area of winter turnip rape is still of "0"-quality with the swedish cultivar Sv Per. The area of summer rape was dominated of the Swedish 00-cultivar Sv Puma. In summer turnip rape the Swedish "00"-cultivars Sv Agena and Sv Kova were dominating.

For use in 1992 some new swedish cultivars probably will be marketed. Sv 0506 is a double low cultivar of winter rape wich has shown a better winterhardiness than the german cultivars. Compared with them Sv 0506 however has a little lower yield, especially in the southern regions. In summer rape the actual new cultivar is Sv Paroll with both good agronomic characteristics and a very high protein content.