In Finland consumers prefer rapeseed oil

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Traditionally the Finnish people have used a lot of fat in their diet. Nearly 40 % of the energy of diet is obtained from fats, mainly from butter, milk fat and animal fats. On the other hand, the use of vegetable fats and oils has been less. Not until year 1989 did the market share of margarine surpass that of butter. Until 1988 the annual vegetable oil consumption had remained at more or less an even 2,5 l/person. Of this amount only about 0,3 l was sold through retail outlets.

At the same time coronary heart disease (CHD) mortality in Finland has been relatively high. Finnish men have been third in the world on the list for CHD mortality. Seen from an international viewpoint the total serum cholesterol value, one of the best known CHD risk factors, has been in Finland very high, on an average 6,3 mmol/l.

Rapeseed is the only oil plant grown in Finland. According to different studies, (Renaud et al., 1986; Lassere et al., 1983; Savoie et al., 1983; Bruce et al., 1976) rapeseed oil has beneficial effects on serum cholesterol. In winter 1988 The School of Pharmacy at Helsinki University carried out an extensive clinical research, the aim of which was to find out the effects of rapeseed oil on serum lipid values and to compare rapeseed oil with olive oil which is commonly regarded as beneficial for the health. The study was carried out in the area of Turku. Totally 400 persons participated in the screening test and the test groups were formed of those selected to the final study (N = 86). The cholesterol values of voluntary, healthy test subjects varied from 5,0 to 8,5 mmol/l.

The total duration of the study was 12 weeks. During the six weeks' intervention period the fat on bread was substituted by rapeseed or olive oil spreads. Any other dietary changes were

not allowed. The proportion of the substituted fat was under 10 % of the energy intake and about 20 % of the fat intake. The next phase of the study was the follow-up period of six weeks. The control group did not have any changes in the diet.

The blood serum samples of the test subjects were taken after screening in the initial situation, during the intervention period after the use of substituting fat of 3 and 6 weeks, respectively, and further after the follow-up period of 6 weeks. Figure 1 shows that the LDL cholesterol fell most drastically in group A, where those who had earlier used butter on the bread changed over to rapeseed oil spread. In the groups of those who had earlier used vegetable margarine rapeseed oil reduced the LDL cholesterol (group B) more effectively than olive oil (group C). Even after the follow-up phase LDL values were lower than initially.

As a summary of the study it can be stated that even with small changes in fat consumption remarkable results can be obtained in reducing cholesterol. According to the study high cholesterol values fell more than the low ones and Finnish rapeseed oil reduced cholesterol even more effectively than olive oil. Rapeseed oil reduced particularly LDL cholesterol whereas the portion of HDL cholesterol slightly increased.

In May 1989 the results of this rapeseed oil research were published (Seppänen-Laakso et al., 1989). The year before the results were made public "the fat discussion" in Finland had been quite stormy. The discussion had been started by a newspaper campaign, where the dairy industry "informed" public about the edible fats in the form of theses. The claims presented in the theses were based on statistics from the OECD countries concerning the use of fat, CHD mortality and the results received from the widely known North Karelian project. Based on this information it was found - surprisingly enough - that the use of fat in Finland is in no way exceptionally high and that there is no correlation between the consumption of animal fat and CHD. What was very evident in the newspaper campaign was that it made no mention at all of the exceptionally low use of vegetable fats and oils in Finland.

It was obvious that the campaign created a favorable ground for the continuation of the fat discussion. The publication of the rapeseed oil research results brought a lot of positive advertising for rapeseed oil and the fat discussion started all over again, but this time in a new light. Even the man on the street learned about the "new" domestic vegetable oil. The advantageous effects of rapeseed oil to health became very widely known. The consumers wanted to use rapeseed oil and buy products based on rapeseed oil.

Even though rapeseed oil had been on the market since the 1950's, the good results from the published research were utilized in such a way as to be able to launch rapeseed oil with a new image. Together with the relaunch the labels were renewed to get them more informative and in marketing the health aspect was strongly pointed out. In 1989 in the competition for the best newly introduced food product in Finland, Kultasula ® rapeseed oil placed itself in the top ten of 50 new products.

Evidently the main factor for rapeseed oil receiving so much positive attention was that both the health authorities and the gurus working in fat research were talking about rapeseed oil in a very praiseworthy manner. Previously rapeseed oil had been considered ordinary, maybe an even somewhat boring product, but now the image was strongly rising. Because olive oil was included in the trial even those people who were ingrained users of olive oil, realized the practical use of domestic rapeseed oil. The enthusiasm of the consumers put strong pressure on the food industry to develop new products containing rapeseed oil. The rapeseed oil boom meant that new margarine products containing high amounts of rapeseed oil were launched and in some of the products already on the market the vegetable oil part was changed to rapeseed oil.

Figure 2 examines the total consumption (industry, catering and institutional side and retailer) of three most common vegetable oils, rapeseed oil, soybean oil and sunflower oil, and the changes during 1987-1990. During this period the vegetable oil consumption grew about 30 % and the share of rapeseed oil grew from 64 % to 75 %. Here it must be noted that industry,

catering and institutional side already before the real rapeseed oil boom, were using large amounts of rapeseed oil, even though from a marketing point of view this had not been exploited.

On the retailer side the change has been much more marked, figure 3. The growth in sales within the retail section has been 43%. The rapeseed oil share grew quickly, whereas the sunflower oil as well as the soybean oil lost in absolute terms as well as in market shares. Figure 4 shows the relative growth of rapeseed oil.

From the previously shown figures it can be seen that the consumption of vegetable oils has been increasing rapidly during the period in question. Especially the growth in rapeseed oil sales has been noticeable. One can say that the consumer habits have now changed permanently and that the consumption of vegetable oils and vegetable oil based products will continue to grow in the future. It is satisfying to note that especially domestic rapeseed oil has been the main factor behind the forces that caused the changes in the dietary habits. At the table rapeseed oil has a leading position and has superseded the oils previously imported.

Seen internationally the Finnish rapeseed oil boom is probably exceptional. Elsewhere in the world rapeseed oil has mostly been used for its wide range of uses, but in Finland its real breakthrough is expressly based on the health aspect. In the future the increase in the use of rapeseed oil may continue in the form of new varieties (for example high palmitic rapeseed oil). The possibility to change the fatty acid composition will mean opportunities for developing new types of products for different purposes. The traditional rapeseed oil will, however, save its position and image as the healthiest vegetable oil.

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Fig. 1. Changes of LDL Cholesterol in Control and Substitute Groups

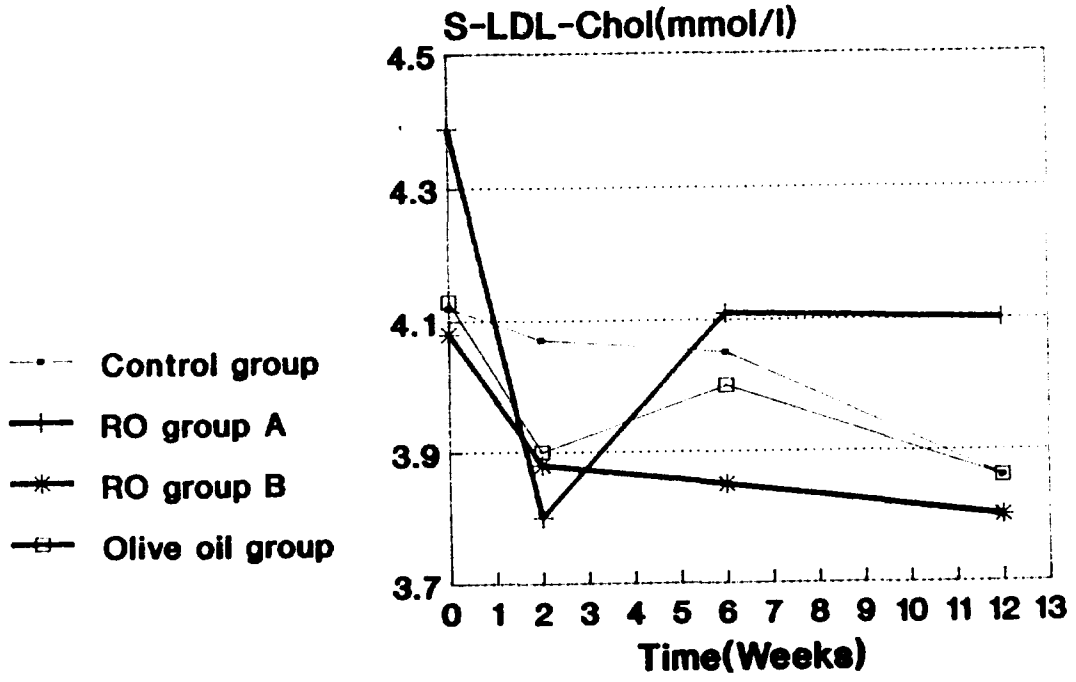

Fig. 2.
Consumption of Vegetable Oils 1987-1990

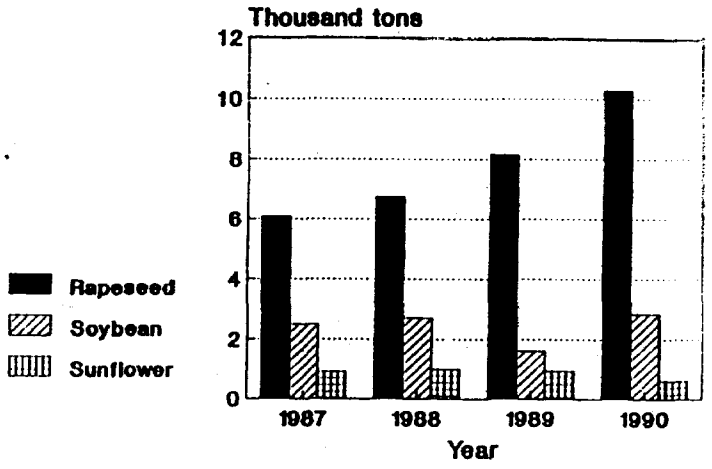

Fig. 3.
Retail Sales of Vegetable Oils 1987-1990

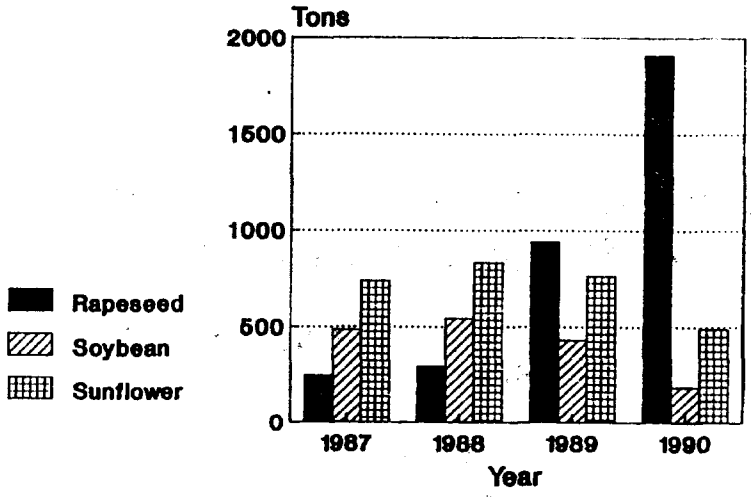

Fig. 4.
Rapeseed Oil in Retail Sales (%)