

Rapeseed Crop Evolution in Spain

Dr. Eduardo SOBRINO VESPERINAS

C.E.C.O.S.A., Madrid, Espana

I - BACKGROUND

Previously to the introduction of rapeseed crop in Spain in 1977 (Sobrino, 1978), a number of experimental work was performed to know its agronomic requirements, and to regionally determine the adaptability of the different varieties of a world collection. Fundamentally, the experiments were carried out by the INIA (Cordoba's Centre) and by two private Companies with the backing of the Ministry of Agriculture.

There was a notable interest in this crop, since on the one hand, it could improve the shortage of oil and vegetable protein that existed (at present, the deficit only affects this latter product) and furthermore helped in finding solutions, to increase the number of species of the present crop rotation, almost exclusively based in cereals, which is followed in vast extensions of dryland areas in Spain.

The characteristic cycle of rainfall in the Mediterranean region, which shows peaks in autumn and spring, also appeared to be suitable.

In a first phase, growth in the crop area was fast and corresponded to the forecast expansion and in 1980-81, the maximum area was reached, approximately 35.000 ha. Later on, however, there was a sharp reduction, and the figure remained at around 7.000 ha and has failed to reach the expectations it had aroused. Following this drastic reduction, the area is mainly distributed in the Northern part of the Iberian Peninsula.

The absence of expansion has been due to external factors to rapeseed, rather than lack of adaptation of this crop. One of the factors that notably influenced this situation was the appearance of a series of 6 years of drought, which notably hindered the crop works, and reduced strongly the yield-average. The farmers' lack of experi-

ence with the crop did not allow them to relate correctly low production and poor rainfall, and their interest in this new crop fell.

The low rainfall and a tardy appearance in autumn added to the characteristics of the Mediterranean climate, caused an excessive delay in sowing, and the crop was destroyed with the winter frost because the plants had not yet reached the rosette phase.

II - VARIETY STRUCTURE

The numerous tests performed regionally, showed that for the Northern area, winter varieties were recommended, using in principle the Quinta Variety for this zone. It was later substituted by Rafal, when it was observed that the shorter cycles normally proved more productive, as a consequence of its partial escape to drought at the beginning of the summer.

In the South Central zones, below the Central System, spring varieties were recommended, although always used with autumn sowing, and it would therefore perhaps be advisable to use the term alternative varieties.

From the start, exclusively zero erucic varieties were used, and even some double zero varieties, such as Librador and Liraspa, with which good results were obtained.

Actually, most used varieties are 00-types, and those we consider most used are shown in Table 1. Replacement, in a near future, by 00-varieties, may present additional problems, as a consequence of the notable attraction, which this type of varieties has on wild herbivores, especially rabbits. This aspect must be considered for Spain, in respect of the dates when the differential premiums for 00-varieties come into force.

Table 1: Rapeseed Varieties sown in Spain

Variety	Type
Rafal	Winter
Brink	Winter
Malpa	Alternative
Gulliver	Alternative

III - DISEASES AND PLAGUES

Various diseases in rapeseed have been detected: *Alternaria* spp., *Phoma lingam*, *Verticillium albo-atrum* and *Sclerotinia sclerotiorum*, and also attacks by parasite plant like *Orobanche ramosa* (Sobrino, 1982). However, *Phoma lingam* is the main problem and it is therefore necessary to use varieties offering a certain resistance against it.

Generally, the plagues can be controlled by treatments. The main pests are aphids (*Brevicoryne brassicae*), *Phyllotreta* spp., *Meligethes aeneus*, *Ceuthorrhynchus napi*, *C. assimilis*, *Plutella maculipennis*, *Pieris rapae*, *Heliothis armigera*, *Dasyneura brassicae* (Sabariego and Alonso, 1981).

IV - LAST SEASON'S RESULTS

The area of rapeseed has gone up to 7.000 ha with a total production of 12.000 Tm., which represents an average yield of 1,700 kg/ha. This satisfactory result is because most of this surface corresponds to the pre-Pyrenean Navarra area, where autumn implantation of the crop was correct and ripening conditions were good. The results of the Central Zone are inferior, as consequence of a smaller pluviometry and a more insufficient performance of the different farming works.

V - FUTURE POTENTIAL

Rainfall has now returned to its normal rate, and the drought cycle has finished. All this, added

to the good output that was obtained the last season makes us hope that the area under rapeseed will increase next season above 20%, although it will still be restricted in the Northern areas.

At present, the difficulties for a future expansion, so that Spain may join the other rapeseed-producing countries in Europe, are basically of economic policy.

The Treaty of Adhesion by Spain to the E.E.C. conditions Community-help for rapeseed and implies that production does not exceed 12,500 Tm/year. This low figure restricts any rational attempt at extending the crop until the year 1996.

Without doubt, this strong limitation is a detrimental aspect for Spanish agriculture, and also probably for the Community interests. Therefore, it must be reconsidered, in order to increase this figure as soon as possible.

There are other problems to be resolved, for a final introduction of rapeseed. One of them is the obtention of new varieties, with a greater resistance to frost in the preliminary stages before the winter rosette is formed. The irregularity of autumn rain of the Mediterranean climate on many occasions means that sowing is performed too late. This difficulty however affects the North and Centre, and scanty Andalucía. As far as this problem is concerned, we have conducted some experiments, incorporating a number of chemical products in the seeds, by semi-pelleting; Polyethylenglycol-6000 improved the behaviour of the plantules against frost whilst other products such as Cycocel and Dimethylsulfoxide had no effect. (Duran and Sobrino, unpublished data), although these are still initial results which need to be completed.

Another problem is the reintroduction in certain areas, where the technological packet was not known sufficiently by farmers, and which will be precised by a laborious and conscientious work by the Services of Agricultural Extension.

References

SABARIEGO E. and ALONSO L.C., 1981. - Pests of Rapeseed in Southwestern Spain. - *Cruciferae Newsletter*, (6:63).

SOBRINO E., 1978. - The Introduction of Rapeseed Cultivation in Spain. - *Cruciferae Newsletter*, (3:7).

SOBRINO E., 1982. - *Orobanche ramosa*, a New Rapeseed Parasite in Southern Spain. - *Cruciferae Newsletter*, (7:76-77).