# Rapeseed in Italy

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The area devoted to rapeseed cultivation in Italy had a considerable increase in the course of the last six years (Schiff, 1998; Marzi, 1999), as showed in Fig. 1. The estimated crop cultivation area was around 100000 ha during the last two growing seasons, *i.e.*, 25 times more than the value recorded in 1993-1994 (4000 ha). This increase was more noticeable in some regions such as Puglia, Latium, Tuscany and Sardinia (Tab. 1), which contributed to the total national rapeseed cultivated area for the 70%.

In spite of the huge cultivation expansion, total production showed a modest increase, since the average yields recorded during the same period revealed a remarkable tendency to decrease (Fig. 2), from a peak of 2.1 t ha-1 achieved in the season 1994-1995 to the very low yield of the last season (0.4 t ha-1). Italian yields are therefore significantly lower that those registered in other European countries. For instance, France, Germany, United Kingdom (which account for 90% of total European rapeseed production) have mean yields higher than 3 t ha-1. Generally speaking, rapeseed crop finds more favourable soil an weather conditions in Central and Northern Europe than in the South, but this is certainly not sufficient to explain such a large discrepancy (Schiff, 1998). Indeed, an unknown but certainly not negligible part of farmers finds more convenient not to harvest the crop, since the only condition to access the EU supports is the documented area (Amendola, 1999).

The trend towards a progressive reduction of the European supports should adjust the reported distortions and stimulate strategies for increasing crop productivity, and may assure both a positive trend of rapeseed in Italy and a satisfying income to farmers. A number of experiments performed in the last years under diversified Italian conditions confirm the potentialities associated to rapeseed cultivation in the Italian environments, which appear much greater than those emerging from the statistics above mentioned.

Rapeseed is at the moment the most promising alternative to winter cereals continuous crops in Central and Southern inland sites, where it has demonstrated good adaptability, the main limiting factors being pathogenic adversities. In the districts where the nematode *Heterodera schachtii* is proliferating, it is recommended to keep rapeseed out of rotations including sugar beet, as both crops may host this parasite. Similarly, close attention must be paid when rapeseed follows soybean or sunflower, in order to prevent attacks by the pathogen *Sclerotinia sclerotiorum*.

As far as seedbed preparation, deep tillage is generally not required. Combined tools operating as deep as 25 cm are usually adopted. Disk harrowing up to 10-15 cm may be a valid alternative in medium-light soils. In any case, soil tillage is aimed at assuring an adequate retention of water, which will sustain the crop in the initial phases of the growth cycle. A 30-35 depth Chisel-type subsoil tillage may be successfully combined with surface tillage in rainy areas.

Due to different weather conditions from North to South Italy, careful attention must be focused on cultivar choice. Either autumn or spring cultivars are used in Italy. Autumn cultivars have great potentials in terms of production; they approach maturity in the late season, and they are appropriate for Central and Northern areas. They are usually sowed in the period between the last decade of September and the first decade of October. Spring cultivars are more indicated for the Southern areas, where they can

be sowed in autumn as well, given the relatively high temperatures registered during winter time in such places. For this particular characteristics they are also designated as Mediterranean (Tatini, 1999). Spring cultivars approach maturity earlier than the others, so they are able to avoid water shortage occurring late in spring. The most recent experiments highlight the best performances of such cultivars in the Southern environments (De Mastro et al., 1999).

Rapeseed sowing is commonly executed through common cereal seeders, distributing 5-8 kg ha-1 seed. By the use of properly arranged air-seeders (releasing seed at 2-2.5 cm in the row) it is possible to reach the target of 40-60 plant m-2 final density with a reduced seed amount. The inter-row spacing is not a limiting factor in the range 15-45 cm. However, the larger options allow to set up a low-impact management, combining row-localized chemical weed control with mechanical weeding in the inter-row.

As regards to fertilisation, one general rule is that sulphur-based fertilisers are preferable, given the specific requirements of this Crucifera. Nitrogen rates may vary from 80 to 120 kg ha-1 N, distributed either at once at the end of winter, or 50% at sowing and 50% at the end of winter. Phosphorous is applied only in poor soils, as basic dressing before sowing (about 70 kg ha-1), or localized at sowing (about 50 kg ha-1). Italian soils are, in general, rich of potassium, therefore such a nutrient is not supplied to crop via fertilization.

Harvest is a crucial stage for rapeseed cultivated in Italian environments and must be timely fulfilled (seed humidity lower than 12%) to avoid the occurrence of consistent losses due to pod shuttering. Pod shuttering is the major problem for rapeseed adaptation in Italy.

Many problems associated with rapeseed cultivation in Italy are still open, and the perspective of a future development will depend on the organised efforts of the operators and the institutions. The research must be oriented to the finding of cultivars adapted to Italian areas. Farmers will be required to set up fine management options. Industry should move on actions aimed to assure the fate of productions. The encouraging results coming out of experimentation allow to look trustingly at the future of rapeseed in Italy.

**References**

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Tab. 1 – Distribution of rapeseed areas and yields among the Italian regions.

| Region | season 1998-1999 | | season1997-1998 | | season 1996-1997 | | season 1995-1996 | | season 1994-1995 | | season 1993-1994 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | area (ha) | yield (t ha$^{-1}$) | area (ha) | yield (t ha$^{-1}$) | area (ha) | yield (t ha$^{-1}$) | area (ha) | yield (t ha$^{-1}$) | area (ha) | yield (t ha$^{-1}$) | area (ha) | yield (t ha$^{-1}$ |
| Piemonte | 4256 | 1.01 | 3343 | 1.38 | 2575 | 1.87 | 1182 | 2.07 | 415 | 2.48 | 1031 | 1.71 |
| Lombardia | 5301 | 0.52 | 7377 | 1.75 | 6956 | 2.22 | 3625 | 2.33 | 177 | 2.61 | 4 | 1.25 |
| Trentino-Alto Adige | 0 | 0 | 0 | - | 5 | 1.40 | - | - | 3 | 2.00 | - | - |
| Veneto | 774 | 1.05 | 1066 | 1.71 | 1535 | 2.22 | 695 | 2.22 | 109 | 2.72 | 18 | 2.78 |
| Friuli-Venezia Giulia | 595 | 0.40 | 1141 | 1.80 | 1717 | 1.38 | 875 | 1.99 | 180 | 2.67 | 140 | 1.44 |
| Emilia-Romagna | 1053 | 1.42 | 748 | 1.34 | 1856 | 1.85 | 1663 | 2.31 | 377 | 2.58 | 28 | 1.50 |
| Marche | 281 | 0.90 | 129 | 1.55 | 347 | 1.75 | 171 | 2.10 | 107 | 2.49 | 252 | 1.70 |
| Tuscany | 21633 | 0.31 | 18994 | 0.52 | 14387 | 0.89 | 10705 | 1.10 | 2128 | 2.23 | 532 | 1.10 |
| Umbria | 2022 | 0.80 | 1841 | 1.00 | 1792 | 1.68 | 1490 | 2.47 | 641 | 2.45 | 132 | 1.76 |
| Lazio | 15443 | 0.47 | 18901 | 1.07 | 20802 | 1.15 | 14242 | 1.90 | 6053 | 2.10 | 1352 | 1.42 |
| Campania | 58 | 0.29 | 44 | 0.70 | 189 | 0.88 | 44 | 1.23 | 43 | 1.49 | 5 | 1.40 |
| Abruzzo | 323 | 0.30 | 198 | 0.75 | 319 | 0.93 | 228 | 1.20 | 68 | 1.50 | 26 | 0.77 |
| Molise | 119 | 0.60 | 132 | 0.70 | 136 | 1.00 | 61 | 1.49 | 11 | 1.45 | - | - |
| Puglia | 24483 | 0.22 | 23513 | 0.84 | 16610 | 0.69 | 7181 | 1.82 | 1473 | 1.90 | 73 | 1.75 |
| Basilicata | 4420 | 0.30 | 2908 | 1.00 | 2124 | 1.00 | 480 | 1.50 | 90 | 1.50 | 66 | 1.50 |
| Calabria | 1874 | 1.41 | 1146 | 0.49 | 55 | 0.60 | 1 | 1.00 | 14 | 1.43 | 4 | 1.50 |
| Sicily | 3223 | 0.02 | 3092 | 0.40 | 873 | 0.60 | 5 | 1.20 | 144 | 1.20 | 65 | 1.83 |
| Sardinia | 13646 | 0.35 | 16743 | 0.50 | 13010 | 0.50 | 849 | 1.20 | 261 | 1.20 | 286 | 0.91 |
| Not attributed | 109 | - | - | - | - | - | 97 | 1.75 | - | | 20 | 2.20 |

Source: AISO (Oil Seeds Interprofessional Association).

Fig. 1 - Evolution of sowing areas of rapeseed in Italy in the last years.

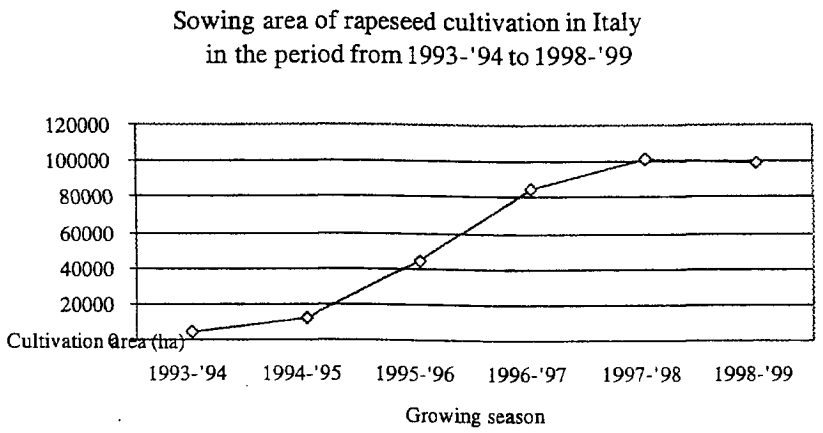


Fig. 2 - Evolution of rapeseed productions in Italy in the last years.