

**9th International Conference on
Agricultural Biotechnology: Ten Years After**

organized by the:

**International Consortium on Agricultural Biotechnology Research
(ICABR)**

and the:

**Catholic University of Leuven
CEIS - University of Rome "Tor Vergata"
Centre of Sustainable Resource Development, University of California at Berkeley
Economic Growth Centre, Yale University**

Ravello (Italy), July 6-10, 2005

**“Socio-economic implications of GM and non GM crops coexistence
in Tuscany”**

(G. Brunori, M. Rovai, S. Gorelli)

Department of Agronomy and agro-ecosystem management – University of Pisa

ABSTRACT

The D.L. n.279 of the 22 November 2004 defines the dispositions of the coexistence between all form of agriculture: conventional, organic or agriculture that using GMOs. ARSIA (Agenzia Regionale per lo Sviluppo e l'Innovazione nel settore Agro-forestale) of the Tuscany, supported a project for analyse the socio-economic implications of GM and non GM crops coexistence in the Region.

Agriculture in the Region of Tuscany is based on a network of farms with an average extension of 6 ha, a value common to Italy as a whole. Also due to the limited extension of farms, to high labor and management costs and on the ground of cultural traditions and skills competitiveness, Tuscany agriculture is based on high quality, typical products a significant part of which is exported at good prices. In 2003 around 5% of the farms was organic, 10% were in protected areas, at least 15% were based on quality labeled products and another estimated 10% were involved in “integrated management” practices. On a cultivated area basis the estimates for these categories is higher than 30% of the total agricultural area and certainly their production yields a large part of the total agricultural added value. It should also be recalled that in the last two years agriculture has been in Tuscany the only productive sector showing a significant increase in gross product and in jobs particularly in the skilled area.

A coexistence situation has been considered in this study, based on a safety area of only 100 meters between GMO and non GMO fields cultivated with extensive crops and the costs of coexistence itself have been calculated on the basis of a series of parameters.

They include:

- The loss of non GMO cultivated area due to the safety surface;
- The costs of safety measures including cleaning of sowing and harvesting machines, elimination of “volunteer” seed, transport, monitoring of “escapes” other possible rotation practices etc.

- The loss due to lower prices of the product
- Costs of insurance.
- All these additional costs were calculated using present day values for practices, underestimates for prices and gene flows and excluding possible costs for molecular monitoring of putative pollution. A reduction of costs of 4% was also considered to be putatively due to the use of GMO in terms of reduction of chemical inputs to the cultivation.

We underline, that all the farms included in the aforementioned categories are by definition GMO free and would therefore suffer from pollution by GMO in terms of price reduction of the final product. In this study, however we assumed, on the ground of rather old EU data a reduction of price of GMO products vs. GMO free of only 4%, a number which is a strong underestimation of the real value. It should be recalled that a farm cannot be classified as organic if it grows GMO for all its products and not only for the specific putatively polluted one. The same is essentially true for the other categories of GMO free agriculture.