ALTERNATIVES TO METHYL BROMIDE FOR SOIL DISINFESTATION: RESULTS IN NORTHERN ITALY

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Soilborne pathogens are the cause of major losses in intensive vegetable and ornamental crop production in Italy. Methyl bromide (MB) has been and still is a vital fumigant for soil disinfestation. Meeting the mandate challenge of progressively reducing the quantities of MB applied, also in order to curb its emission into the atmosphere, as imposed by national and international regulation, requires a fully integrated approach, based on the combination of different currently available soil disinfestation methods, aimed at finding long-term solutions.

The results obtained in trials carried out in Northern Italy at the Centro Regionale di Sperimentazione e Assistenza Agricola of Albenga during the years 1995 and 1996 will be presented.
Soil solarization, particularly when conducted for 4 weeks under greenhouse conditions, represents a possible alternative to the use of MB for a number of crops (i.e. tomato, lettuce, basil), providing a satisfactory control of most soilborne fungi, also significantly and consistently reducing the presence of weeds. However, soil solarization did not always provide a sufficient disease control in the open field, at Northern Italy latitude. In order to improve its efficacy and also, in some cases, to reduce its duration (from 4 to 2-3 weeks), solarization was applied in combination with reduced dosages of MB or other fumigants (metham-sodium and dazomet).
Moreover, the use of biocontrol agents, applied as seed coating, was combined with the application of solarization or with usage of fumigants. Antagonistic *Fusarium oxysporum*, isolated from Fusarium-suppressive soils and known for their activity against Fusarium wilts, were used against *Fusarium oxysporum* f. sp. *basilici* on basil. *Trichoderma* isolates were used against *Rhizoctonia solani*.
The results so far obtained provide a number of options available to growers. They need to be furtherly exploited in order to be transferred to different crops and/or situations.
The results obtained will be critically reviewed and the possibility of transferring them under practical conditions will be discussed

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