

## Advances on pre-plant application of soil fumigants on minor crops and preliminary results of chloropicrin against root knot nematodes on lettuce and tomato in Italy

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Since 2002 chloropicrin (Tripicrin<sup>TM</sup>) has been registered in Italy and primarily used on tomato, strawberry and cucurbits in order to control soilborne disease and root knot nematodes with the combination of 1,3 dichloropropene (1,3 D). During the last seven years new soilborne diseases become more and more destructive; moreover the evaluation of improved mode of application of registered fumigants made possible to collect efficacy data against soilborne pest and disease already well know. After is In spring 2002 plants of cultivated (*Eruca vesicaria*) and wild (*Diplotaxis tenuifolia*) rocket showing symptoms of a wilt disease were observed in several commercial plastic greenhouses in Lombardy (Northern Italy). Similarly to what observed on other crop such as lettuce, the simultaneous appearance of this disease in many farms was due to the transmission of the pathogen through seeds. Heavy Fusarium infections were observed in Center Italy in Battipaglia (SA) area too and, due to the difficulties to control this destructive wilt disease, during 2008 one trial aimed at evaluating the effects of chloropicrin applied drip or shank (400 kg/ha) compared with dazomet and metham sodium was organized. Other trials were carried out on lettuce crop: trials were aimed at evaluating the effects of chloropicrin (200 – 400 kg/ha) drip applied against *Sclerotinia* spp. and root knot nematodes, respectively in comparison with metham sodium and with the mixture of chloropicrin and 1,3 D. Finally preliminary trials were carried out on tomato and aimed at clarifying the potential effects of drip application of chloropicrin alone against root knot nematodes in comparison with the mixture of chloropicrin and 1,3 D.

The results collected on *Diplotaxis* sp. confirmed the good efficacy of chloropicrin particularly when drip applied against Fusarium wilt. However metham sodium gave similar results in term of yield, particularly during the early harvest, but did not fully controlled the wilt disease. On lettuce the application of chloropicrin alone significantly reduced the severity of root knot nematodes compared with the untreated control, nevertheless the mixture of chloropicrin and 1,3 D performed better. Similar data were preliminarily collected on protected tomatoes, nevertheless the effect of chloropicrin applied alone against root knot nematodes seems to be affected by several factors including the length of the crop cycle and the timing of soil fumigation and crop transplant.