

## Phelipanche Ramosa (L. - Pomel) Control in Field Tomato Crop

**Authors :** G. Disciglio, F. Lops, A. Carlucci, G. Gatta, A. Tarantino, L. Frabboni, F. Carriero, F. Cibelli, M. L. Raimondo, E. Tarantino

**Abstract :** The Phelipanche ramosa is an important crop whose cultivation in the Mediterranean basin is severely contained the phitoparasitic weed Phelipanche ramosa. The semiarid regions of the world are considered the main center of this parasitic weed, where heavy infestation is due to the ability to produce high numbers of seeds (up to 500,000 per plant), that remain viable for extended period (more than 19 years). In this paper 12 treatments of parasitic weed control including chemical, agronomic, biological and biotechnological methods have been carried out. In 2014 a trial was performed at Foggia (southern Italy). on processing tomato (cv Docet), grown in field infested by Phelipanche ramosa, Tomato seedlings were transplant on May 5, 2014 on a clay-loam soil (USDA) fertilized by 100 kg ha<sup>-1</sup> of N; 60 kg ha<sup>-1</sup> of P<sub>2</sub>O<sub>5</sub> and 20 kg ha<sup>-1</sup> of S. Afterwards, top dressing was performed with 70 kg ha<sup>-1</sup> of N. The randomized block design with 3 replicates was adopted. During the growing cycle of the tomato, at 56-78 and 92 days after transplantation, the number of parasitic shoots emerged in each pot was detected. At harvesting, on August 18, the major quantity-quality yield parameters were determined (marketable yield, mean weight, dry matter, pH, soluble solids and color of fruits). All data were subjected to analysis of variance (ANOVA), using the JMP software (SAS Institute Inc., Cary, NC, USA), and for comparison of means was used Tukey's test. Each treatment studied did not provide complete control against Phelipanche ramosa. However among the 12 tested methods, Fusarium, glyphosate, radicon biostimulant and Red Setter tomato cv (improved genotypes obtained by Tilling technology) proved to mitigate the virulence of the attacks of Phelipanche ramosa. It is assumed that these effects can be improved by combining some of these treatments each other, especially for a gradual and continuing reduction of the "seed bank" of the parasite in the soil.

**Keywords :** control methods, Phelipanche ramosa, tomato crop, mediterranean basin

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