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Effect of Biostimulants to Control the Phelipanche ramosa L. Pomel in Processing Tomato Crop

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Abstract : The experimental trial was carried out in open field at Foggia district (Apulia Region, Southern Italy), during the spring-summer season 2014, in order to evaluate the effect of four biostimulant products (RadiconÒ, Viormon plusÒ, LysodinÒ and SiaptonÒ 10L), compared with a control (no biostimulant), on the infestation of processing tomato crop (cv Dres) by the chlorophyll-lacking root parasite Phelipanche ramosa. Biostimulants consist in different categories of products (microbial inoculants, humic and fulvic acids, hydrolyzed proteins and aminoacids, seaweed extracts) which play various roles in plant growing, including the improvement of crop resistance and quali-quantitative characteristics of yield. The experimental trial was arranged according to a complete randomized block design with five treatments, each of one replicated three times. The processing tomato seedlings were transplanted on 5 May 2014. Throughout the crop cycle, P. ramosa infestation was assessed according to the number of emerged shoots (branched plants) counted in each plot, at 66, 78 and 92 day after transplanting. The tomato fruits were harvested at full-stage of maturity on 8 August 2014. From each plot, the marketable yield was measured and the quali-quantitative yield parameters (mean weight, dry matter content, colour coordinate, colour index and soluble solids content of the fruits) were determined. The whole dataset was tested according to the basic assumptions for the analysis of variance (ANOVA) and the differences between the means were determined using Tukey's tests at the 5% probability level. The results of the study showed that none of the applied biostimulants provided a whole control of Phelipanche, although some positive effects were obtained from their application. To this respect, the RadiconÒ appeared to be the most effective in reducing the infestation of this root-parasite in tomato crop. This treatment also gave the higher tomato yield.

Keywords : biostimulant, control methods, Phelipanche ramosa, tomato crop
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