Researches Regarding the Tomatoe Culture in Biocomposit Mulching System

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ABSTRACT

The tomatoe culture was founded on autumn Vicea panonica mulch, mowed in the budding phase, on which was applied a thin coating of chemical mulch with microorganisms. In the experiment has been used the following scheme: V1 – chemical mulch without microorganisms, V2- chemical mulch + Azospirillum brasilense; V3 – chemical mulch + Bacillus subtilis, V4- chemical mulch + Azospirillum brasilense + Bacillus subtilis, V5- chemical mulch + Azospirillum brasilense + Bacillus subtilis + Beauveria bassiana, V6- control (without mulch). The results obtained proved the importance of biocomposit mulch on the growth and fructification of tomatoe, helped by the nutritive substances from the mulch decomposion. The flowers growth in inflourescence was satisfactory up to the fourth one, after which was registered a decrease due to the very high temperature. On each plant was formed between 27.2 flowers at control and 33.8 flowers at V5. This proves that the combination of microorganisms used in the biochemical film and Vicea panonica mulch had a great influence. The percentage of fruits binding was high at all variants with mulch. The values registered were between 59.5% at V4 and 68.2% at V3, 58.5% at control. Regarding the production of fruits, the values were of 10.4 kg at V2, followed by V3 and V5 with over 5km/mp. The production of fruits was smaller at control because it was cultivated without mulch and the results was of 6.4 kg/mp. The use of biocomposit mulch conducts to the decrease of weedy areas, which influnces the positive effects on the growth and fructification of tomatoes. The highest number of weeds was registered at control 244, which was cultivated without mulch and the lowest number at v1, 58 which was cultivated with chemical mulch without microorganisms addition. The abundance of pests in tomatoe culture proved diminished in what regards the non-vertebra species (with an abundance under 2%), showing the most damaging specie, Trialeurodes vaporariorum W., with an abundance of 93.53%.The biocomposit mulch, in combination with different species of bacteria and fungi (Azospirillum, Bacillus, Beauveria) troughtout the addition of nutrivite elements, fortifies the tomatoe plants which become more ressistent at different pests attacks. So, at variants cultivated with mulch the plants presented few symptoms specific for Alternaria sp. At the ones without mulch (control) there were symptoms of Phytophthora infestans, Septoria lycopersici and Alternaria sp.

REFERENCES