Title Evaluation of various concentrations of nanosilver on downy mildew diseases in Mazandaran (North of Iran) green house cucumber plantations

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Abstract

Mazandaran province with seasonal and constantly green houses, is one of the green house products pole in Iran. Downey mildew of cucumber is the most important disease that have restricted the green house product in Mazandaran. Efforts to access the resistant cultivars have not been successful. To day, several kinds of fungicides is produced and used for plant fungal diseases production, but unfortunately, environmental pollutions were established to the fungicides applications. Discovery and application of nanotechnology products was opened a new window to control of plant pests and disease without or minimum environmental pollution effects. In this study, we evaluated a new nano products, nanosilver solution (colloidal nanosIver particles) against of the major disease on green house cucumber plantings. We used randomized complete block design with four treatments, mancozeb fungicide (2/1000 conc.) and nanosilver (5/1000 and 10/1000 conc.) solution in water, and distilled water check. We set five replicates for the each treatment sprayings were done with the first disease symptoms expression, and, sampling was done seven days after the spray and extended in the same periods. The each sampling was included six leaves from the bottom of each plants and infection index was determined. The results shown that there was significant difference on control of the downy mildew disease in 50/1000 concentration of nanosilver the other treatments. In mancozeb (2/1000 conc.) treatment, we have not observed any significantly difference.