

SUMMARY

Effect of fertilizers supplemented with silica in tomato (*Lycopersicon esculentum* Mill.) on resistance to *Fusarium oxysporum* Schldl.

The tomato (*Lycopersicon esculentum* Mill.) is native of the Andean region of South America and Mexico, and it is grown mainly in Asia. Mexico was considered among the largest exporters of tomato and during the year of 2014, with 48,387.12 tons of this fruit produced in the state of Veracruz (SIAP, 2015). This fruit is widely used in Mexican cuisine; in addition, lycopene from tomato presents great antioxidative properties. Tomato crop presents different diseases, one of which is caused by *Fusarium oxysporum*, which diminishes yields and fruit quality, and finally causes death of the plant. In order to improve disease resistance, among other beneficiaries, Silicon has been mainly studied in monocotyledonous plants. Therefore, the objective of this study was to evaluate the effect of fertilizers supplemented with silica on tomato resistance to *F. oxysporum*. Three sources of fertilizer were tested and Pony Express and Cid F1 varieties of tomato were compared. Significant differences were found in the sources of fertilizer and the dose applied. Best plant growth characteristics were observed when fertilizers were applied with the highest percentage of silica. In the same way, source effects were observed. Silifertidol Ultra showed the best results on Pony express variety. While, Cid F1 variety growth characteristics were enhanced when Fosfosilidol was applied. For plant resistance to *F. oxysporum*, significant differences were found between varieties. The variety Cid F1 presented high susceptibility; however, PSD was the fertilizer with best effects on diminishing severity and incidence of the fungus; on the contrary, plant showed the lower results for growth. So, it is concluded that the combination of fertilizers supplemented with silicon, may result in improved growth and resistance to the fungus. However, more studies are needed for each variety and doses to be applied should be refined.

Key words: fertilization, Silica, tomatoes, *Fusarium oxysporum*.