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Utjecaj cijepljenja i koncentracije dušika na prinos rajčice i brojnost duhanovog štitastog moljca

Gvozden Dumičić[1], Katja Žanić[1], Branimir Urlić[1], Marisa Škaljac[1], Smiljana Goreta Ban[1], Dean Ban[2]

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Sažetak

Cilj istraživanja bio je utvrditi utjecaj cijepljenja i koncentracije dušika na prinos rajčice i brojnost štitastog moljca *Bemisia tabaci* u hidroponskom uzgoju. Pokus je postavljen u stakleniku, po principu slučajnog bloknog rasporeda, u četiri ponavljanja, od travnja do kolovoza. Rajčica cv. Belle je uzgajana na vlastitom korijenu (necijepljena) i cijepljena na podlogu Arnold, te posađena u blokove kamene vune. Prihranjivana je s tri koncentracije dušika (75, 140 i 205 mgL^{-1} N). Biljke su infestirane s *B. tabaci*. Kod ranog prinosa (prve tri berbe), najveći broj plodova i prinos po biljci utvrđen je na biljkama tretiranim sa 75 mgL^{-1} N, dok utjecaj podloge nije zabilježen. U ukupnom prinosu, najmanja masa ploda je zabilježena na biljkama tretiranim sa 75 mgL^{-1} N. Premda primijenjeni tretmani (N i podloga) nisu imali utjecaja na broj plodova i prinos, biljke tretirane sa 140 mgL^{-1} N ostvarile su 20 % veći ukupni prinos od ostalih. Brojnost preimaginalnih oblika štetnika (nimfe), izražena brojem jedinki po cm^2, utvrđena je 62 dana nakon infestacije. Najmanja brojnost je utvrđena na cijepljenim i necijepljenim biljkama tretiranim sa 75 mgL^{-1} N a najveća na necijepljenim biljkama tretiranim s 205 mgL^{-1} N. Morfološke karakteristike puparija štetnika bile su najslabije izražene na biljkama tretiranim sa 75 mgL^{-1}. Primjenom koncentracije od 140 mgL^{-1} N osigurava se veći prinos rajčice i manja brojnost štetnika u odnosu na standardnu koncentraciju (205 mgL^{-1} N).

Ključne riječi: *Bemisia tabaci*, *Lycopersicon esculentum* Mill., hidroponski uzgoj, podloga Arnold

The effect of grafting and nitrogen rate on tomato yield and tobaco whitefly populations

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Summary

The aim of the study was to determine the influence of grafting and nitrogen rate on tomato yield and population density of *Bemisia tabaci* under hydroponic cultivation. The greenhouse experiment was conducted according to completely randomized experimental design with four replications, from April to August. Tomato cv. Belle grown with its own root (ungrafted) or grafted onto the rootstock Arnold, was planted into rockwool cubes. The crop was fertigated with three N concentrations (75, 140 and 205 mgL^{-1} N). Infestation with *B. tabaci* was done. At the early yield (first three harvests), the highest number of fruits and the highest yield per plant were recorded on plants grown at 75 mgL^{-1} N, while the rootstock effect was not evidenced. Under the total yield, the lowest fruit weight was recorded on plants at 75 mgL^{-1} N. Although treatments (N and rootstock) did not influence on number of fruits and yield, tomatoes grown at 140 mgL^{-1} N had the 20 % higher yield than others. Density of nymphs, expresses as number of individuals per cm^2, was recorded 62 days after infestation. The lowest density was found on ungrafted or grafted plants at 75 mgL^{-1} N while the highest density was on ungrafted plants at 205 mgL^{-1} N. Morphological characteristics of pupal stage were weakest expressed on plants at 205 mgL^{-1} N. The plant treated with 140 mgL^{-1} N provides higher yield of tomato and lower *B. tabaci* density than standard (205 mgL^{-1} N).

Key words: *Bemisia tabaci*, *Lycopersicon esculentum* Mill., hydroponic cultivation, rootstock Arnold