عنوان مقاله:

Rootzone Temperature on N Absorption and Physiology of Cucumber

محل انتشار:

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خلاصه مقاله:

Increasing nitrogen absorption efficiency reduces use of excessive application of N. The effect of rootzone temperature on nitrogen absorption needs clarification. The experiment was conducted to investigate low (۱۵°C, RTZ۱), high (۳۵°C, RTZ۲) and optimum (۲۵°C, RTZ۳) root zone temperatures and nitrogen ۵۲.۵ (ND۱), ۷۸.۷۵ (ND۲) and ۱۰۵ (ND۰) mg·L-۱ levels on cucumber (Cucumis sativus L.), cv. Super N۳, cultured in Johnson nutrient solution. Shoot and root fresh and dry weights, chlorophyll content, maximum photochemical quenching)Fv/Fm(, antioxidant activity, total phenol and nitrate reductase (NR) activity increased with N. Shoot fresh and dry weights, chlorophyll content, total phenol, antioxidant and NR activity was reduced at high and low root zone temperature compared to the optimum temperature. Shoot fresh and dry weights increased in RTZ۱ and RTZ۲ for the ND۲ and ND۰ treatments. The SPAD value increased in RZT۲ at all nitrogen levels. The highest Fv/Fm occurred at ND۰ at all temperature levels. Antioxidant activity increased for the ND۰ and ND۲ treatments with increasing root zone temperature. Total phenol content increased in ND۱ and ND۲ at low and high temperatures compared to the optimum temperature, and increased with increasing temperature level in ND۰ treatment. The NR activity increased at the high root zone temperature in ND۲ and ND۰ treatments. The ND۰ and ND۲ treatments alleviated the root zone temperature effect on .cucumber grown in hydroponic culture

کلمات کلیدی:

Cucumis sativus, Antioxidant activity, Fv/Fm, Hydroponic, Nutrient fertilizer