A069 AGSC

Do Day-Neutral Strawberry plants respond differently to Nitrate (NO3) versus Ammonium (NH4) forms of Nitrogen?

Abstract

Cultivation of day-neutral strawberry is gaining interest among growers but information concerning the right nitrogen form/source is lacking. Therefore, a study was conducted in a glass greenhouse at the Tennessee State University to investigate the response of day-neutral strawberry runners to nitrate (NO3) versus ammonium (NH4) forms of nitrogen. Day-neutral strawberry variety runners ('Seascape' and 'Royal Sovereign') were rooted in agar medium containing complete macro and micronutrients with two different nitrogen forms/source (NO3 versus NH4). A rapid response of shoot and root growth was noted in both strawberry varieties grown in 100% NO3, and NH nitrogen forms. A significant difference in shoot and root response to N03 and NH4 form of nitrogen was noted within four days. Both varieties treated with 100% NH4 developed light chlorosis, and necrosis along the margins of matured leaves. Within ten days, the growth of the growing points was halted. Overall, the plants' response to NO3-nitrogen was normal with healthy shoot and root growth in both varieties. This indicates that NO3- nitrogen form/source promotes growth in day-neutral strawberry, compared to NH4-nitrogen. Thus, right nitrogen form/source can be a critical factor for optimal growth of day-neutral strawberry plants.