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The Effects of Foliar Gibberellic Acid Applications on Tuber Yield, Quality and Dormancy Period in Potato (*Solanum tuberosum* L.)

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Abstract

This study was carried out in order to determine the effects of different doses of Gibberellic acid (GA_3) applications on tuber yield, quality and dormancy period in potato. GA_3 applications (0, 50, 100 and 200 mg GA_3/L) were started 45 days after planting (pre-flowering period) and sprayed on leaves at 15-day intervals in 4 different periods. In the study, together with the GA_3 applications, an increase of 56% in the number of tubers and up to 36% in the tuber yield, while the average tuber weight and marketable tuber rates decreased significantly. The highest tuber yield was obtained from 100 and 200 mg/L GA_3 doses made 75 days after planting. GA_3 applications caused tuber disorders, and the rate of cracked tubers and secondary growing tubers increased with the increase in GA_3 dose. GA_3 applications caused a decrease in chlorophyll (SPAD value) content and tuber dry matter ratio. The dormancy period, which was broken 110 days in the control, was shortened to 80 days with 200 mg/L GA_3 applications made 90 days after planting. In the study, it was understood that the number and yield of tubers in potatoes can be increased significantly with foliar GA_3 applications in production for seed purposes, and the dormancy period of tubers in the post-harvest storage period can be shortened, and it can be advantageous especially for second potato productions.

Key Words: *Potato, Gibberellic acid, tuber yield and quality, dormancy period*