



Foliar application of potassium nitrate outperformed PTS in mandarin in terms of number of fruits produced per tree

Different potassium forms (potassium nitrate, mono potassium phosphate and potassium thiosulphate) and their effect as foliar sprays on “Balady” mandarin trees were studied for two growing seasons. The experiment was done with 13 years old trees budded on sour orange rootstock and spaced at 4x4 meters apart. Trees were grown in sandy soil at Giza, Governorate, Egypt. All K treatments were supported with chelated zinc at 0,5% and sprays were applied on the trees either pre bloom (late May) or post bloom (late July). Treatments were: control (water sprays),  $\text{KNO}_3$  at 1%,  $\text{KNO}_3$  at 1,5%, MKP at 1%, MKP at 1,5%, PTS at 1% and PTS at 1,5%. The experiment was arranged in a randomized complete block design with three replications.

The obtained results showed that all potassium forms supported with Zn induced a remarked promotion in leaf mineral status. Regarding to the number of fruits, the highest number in both seasons was found with the 1,5%  $\text{KNO}_3$  sprays (436 and 441 fruits/tree) this was significantly higher compared with the other treatments. Control treatments recorded on average the lowest number of fruits per tree (380 fruits/tree). In the first season spraying  $\text{KNO}_3$  and PTS at 1,5% concentrations significantly increased the yield to 60,6 and 61,3 kg/tree. In the second season only  $\text{KNO}_3$  sprays at 1,5% significantly increased the yield to 64,2 kg per tree compared to all other treatments. Lowest yields were observed for the control treatment with 44,0 kg/tree in the first season and 46,5 kg/tree in the second season. All fruit physical characteristics (fruit length, diameter, weight, volume and specific gravity) and fruit chemical characteristics (TSS, acidity, TSS/acidity ratio and vitamin C content) were significantly increased for all treatments compared to the control. Foliar K applications



were beneficial for fruit yield and quality of mandarin trees with the highest yields obtained for the 1,5%  $\text{KNO}_3$  treatment.