



Foliar potassium nitrate applications increased fruit quality of table olives

The effect of foliar applied potassium nitrate on some quality properties of olives was studied in Turkey. The 23-years old experimental trees (cv 'Memecik') were grown on a slightly alkaline loamy soil and severely afflicted to alternate bearing. Treatments in this study were: control + foliar water spray, control (untreated), NPK (soil application), NPK (soil) + 4% KNO_3 (foliar) and 4% KNO_3 (foliar). NPK fertilization consisted of 1,75 kg $(\text{NH}_4)_2\text{SO}_4$, 0,8 kg $(\text{NH}_4)_2\text{HPO}_4$ and 1,0 kg K_2SO_4 per tree. Foliar KNO_3 at 4% concentration was applied twice at 20 days of interval, first after fruit set and second after pit hardening. Experimental plots were arranged in randomized parcel design with 5 replicates per treatment. The study was performed on two bearing years. The potassium nitrate treatment positively affected the fruit size, hundred fruit weight, fresh weight and pulp/pit ratio for table olives (Table 1). Especially during the pit hardening (August) and green ripeness (October) stages statistically significant increases for the potassium nitrate treatments were found on the parameters mentioned before. Although increases were observed at maturity stage (December), they were not statistically significant (Table 1). A slight increase was measured in oil percentage. No effect on yield was determined. Fruit K content increased by foliar KNO_3 , compared to the control.

Table 1. The effect of foliar application of KNO_3 on some olive fruit quality



characteristics averaged for two bearing years.

Treatments	Fruit width (cm)	Weight of 100 fruit (g)	Pulp/pit ratio
Control + water spray	13,2	210,3	3,0
Control (untreated)	13,1	206,6	3,0
NPK (S)	13,1	216,0	3,0
NPK (S) + 4% KNO ₃ (F)	13,6	275,1	3,3
4% KNO ₃ (F)	14,0	261,2	3,6

Note: S = soil applied, F = foliar applied