

## Improved fruit yield in olive with foliar applied potassium nitrate

This study was conducted in an orchard located at Cairo-Alexandria, Egypt, during two successive seasons in 2009 and 2010. The aim was to study the effect of foliar application with potassium nitrate at different concentrations and timing on vegetative growth, yield and fruit quality of Picual olive (*Olea europaea* L.). The trees were 15 years old and planted at 5 m x 8 m in a sandy soil with a high pH of 8,5 and poor in nutrients. Potassium nitrate was applied as foliar spray at two dosages: 2% and 4%. Both dosages were applied at two timings: 1) after final fruit set (mid-May) and 2) after pit hardening (first week of August). The control treatment was sprayed with water.

Potassium nitrate foliar sprays at 4% after final fruit set gave the highest number of new shoots per twig in both seasons. Yield was affected by potassium nitrate foliar applications in both seasons. The highest – statistically significant ( $p < 0,05$ ) – yield was observed in both seasons when 4%  $\text{KNO}_3$  was applied as foliar spray after final fruit set: Yield increased with 15% in 2009 and 35% in 2010 compared to the control (Figure 1). Foliar application of  $\text{KNO}_3$  after pit hardening also increased the fruit length in both seasons. The highest fruit weight, flesh weight, flesh/fruit ratio and flesh oil content were obtained in both seasons with foliar application of 4%  $\text{KNO}_3$  after pit hardening. The timing of application determines which beneficial effects were observed: 4%  $\text{KNO}_3$  in foliar spray after final fruit set improved the vegetative growth and increased the yield. Foliar application of 4%  $\text{KNO}_3$  after pit hardening increased fruit quality and the oil content.

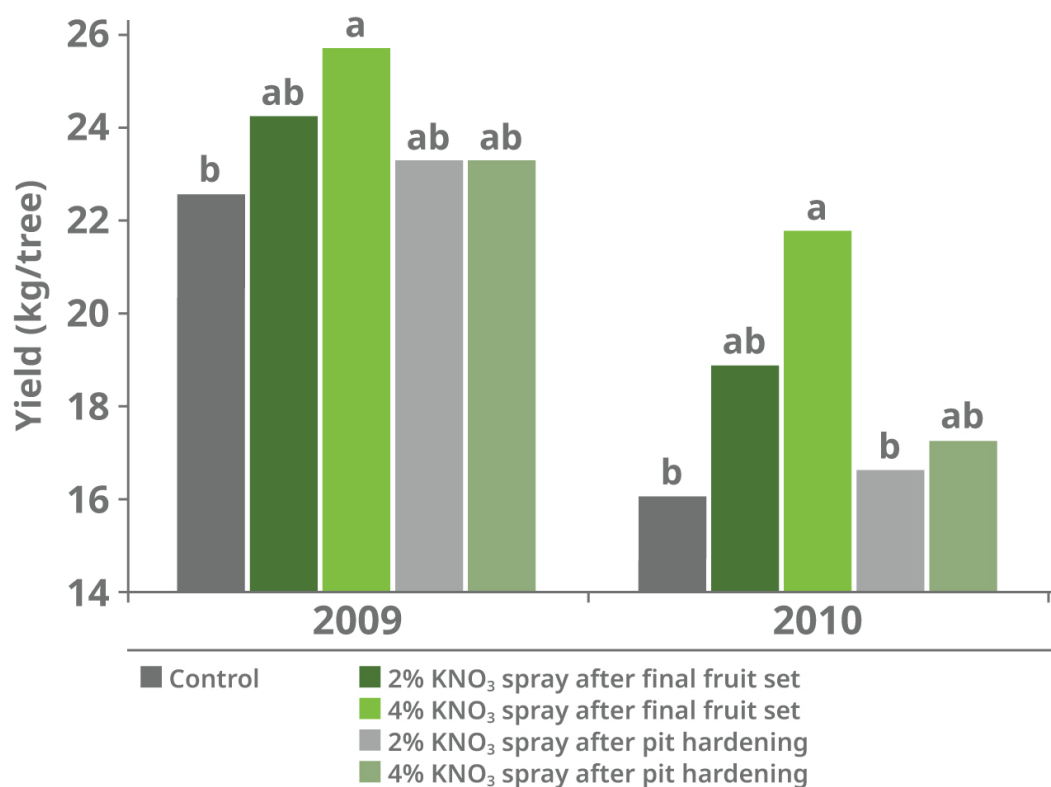
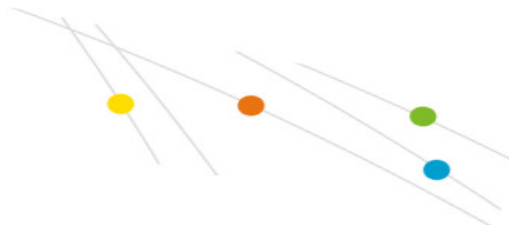


Figure 1. Effect of spraying potassium nitrate on fruit yield of Picual olive trees. Means with similar letters within each year are not significantly different at 5% level (Duncan).