



Potassium application increased fruit weight and diameter in nectarines

A field trial with three sources of K (KNO_3 , K_2SO_4 and KCl) applied at 300 kg K_2O per hectare, was carried out for 4 years to evaluate responses of early nectarines cv. Fairlane. The orchard with four-year-old nectarines was located in the Coltauco Valley (Chile). The soil was a deep Mollisol, medium textured (loamy sand) and with a slight drainage limitation. Next to the three K treatments all treatments received nitrogen as urea at a rate of 200 kg/ha, with the control treatment receiving only urea. Fertilizers were applied yearly during early spring at the bottom of the first, second and third irrigation furrow. The treatments were arranged according to a randomized complete block design with four replicates.

All three K sources were equally effective in increasing leaf K levels. Leaf K concentrations increased from 10 g kg^{-1} in the control to 15 g kg^{-1} . All K treatments significantly increased fruit weight and diameter in the years 1998, 1999 and 2000 (Table 1). The incremental effect in diameter was closely related to internal K requirements rates. Fruit yield was increased by potassium fertilizers in a dry year. This was caused by the largest fruit set (natural set, without thinning) observed in K-treated trees. Fruit firmness at harvest or after 30 days storage at 0°C was little affected by the treatments, but KNO_3 and KCl increased fruit firmness in some seasons.

Table 1. Effect of K source (300 kg K_2O per hectare per year) on average fruit weight of nectarine.



Treatment	Fruit weight (g)		
	1998	1999	2000
Control	135 b	108 b	138 b
KNO ₃	147 a	120 a	147 a
K ₂ SO ₄	144 a	117 a	146 a
KCl	143 a	118 a	145 a