Potassium nitrate sprays increased dry fruit yields in plum trees and corrected K-deficiencies

‘French’ prune trees (

Prunus domestica

syn. ‘Petite d’Agen’) grown on a fine-textured Wyman loam soil were sprayed with KNO_3 in Gridley, California (USA). Spray applications (20-22 litres/tree, 43-48 kg/ha) of KNO_3 were compared with single annual soil applications of potassium chloride (1,4-2,3 kg/tree) or sprays of urea + KNO_3 with respect to leaf potassium and nitrogen concentrations, fruit size, drying ratio and dry yield. KNO_3 sprays were as effective or better than soil-applied potassium chloride at maintaining adequate levels of potassium throughout the season. Lowest leaf potassium values, below the adequate level of 1,3% potassium, were found in the trees where no potassium was applied. These trees developed potassium deficiency symptoms. Trees showing below optimum leaf-potassium levels showed a clear yield benefit following spraying. Trees deprived of potassium were the lowest yielding. It was concluded that foliar KNO_3 sprays applied four times throughout the growing season can correct relative potassium deficiency in ‘French’ prune an can obtain dry yields equivalent to those obtained with soil applications of KCl.