Foliar applied potassium nitrate improved pomegranate fruit quality

The objective of the experiment was to study the effects of potassium nitrate on qualitative parameters of pomegranate. The trial was conducted at a seven year old orchard on a sandy loam soil with pH 7,2 in Iran. Treatments consisted of spraying potassium nitrate (0, 250 and 500 mg/L) early August when fruit size was about 30 mm in diameter. Five replications per treatment were carried out in a randomized block design. Carob moth (

Ectomyelois ceratoniae

) is a pernicious pest for pomegranate fruit that strongly reduces commercially fruit production. A significant decrease in calyx diameter and increase in calyx length with 250 mg/L KNO_3 spray are the main barriers against Carob moth a pest in pomegranate (Table 1). As the potassium nitrate level increased, aril diameter and length decreased (Table 1). Results showed that 250 mg/L potassium nitrate increased juice volume, juice weight and total soluble solids (TSS) statistically significantly compared to the control and the 500 mg/L treatments (Table 2). The Authors suggested that application of potassium as spraying in suitable time will be useful management practice improving fruit quality and reducing harmful effects of carob moth.

Table 1. Effects of foliar potassium nitrate application on calyx and aril characteristics

of pomegranate.

Tratamiento	D. Calicinal (mm)	L. Calicinal (mm)	D. Sarcotesta (mm)	L. Sarcotesta (mm)
Control	19.6 a	15,9 b	7,3 a	10,7 a
KNO_3 250 mg/L	14,4 b	22,2 a	6,6 b	10,7 ab
KNO_3 500 mg/L	19,7 a	16,2 b	6,3 b	10,2 b

Nota: D = diámetro, L = longitud

Table 2. Effects of foliar potassium nitrate application on juice characteristics of pomegranate.

Tratamiento	Volumen del jugo (mL)	Peso del jugo (g)	SST (°brix)
Control	60,3 b	64,0 b	15,6 ab
KNO_3 250 mg/L	84,7 a	87,1 a	16,2 a
KNO_3 500 mg/L	71,6 ab	77,2 ab	14,5 b