Enhanced potato yield by foliar application of potassium nitrate

A field experiment was conducted to evaluate the response of potato crop to foliar applied potassium nitrate in terms of vegetative growth, tuber yield and tuber size of potatoes grown on a loam-sandy soil in the semi-arid environment of Central East of Tunisia. The experimental layout was a randomized complete block design with 4 treatments and 3 replications. The four treatments were 0, 0,5, 1 and 2 g KNO_3/L and were supplied as a foliar spray at 45, 55 and 70 days after planting. Increasing potassium nitrate rates resulted in a significant increase ($P<0,05$) in plant height, leaves number, leaf area, leaf relative water content and chlorophyll a concentration.

All potassium nitrate treatments showed significant increases in mean tuber weight and tuber diameter (Table 1). The foliar KNO_3 sprays increased the tuber yield compared to the control, although statistically non-significant (Table 1). The treatments were applied early in the growing season, so possible more pronounced effects on yield may be obtained with later applications during the tuber-bulking or tuber maturating stages.

Table 1. Effect of foliar potassium nitrate applications on tuber quality and tuber yield

of potato.

Treatments g KNO_3/L	Mean tuber weight g	Tuber diamenter cm	Tuber yield	
			g/plant	
0	110 a	4,0 a	1246 a	-
0,5	129 ab	4,5 ab	1405 a	+ 13%
1,0	139 ab	5,1 b	1405 a	+ 13%
2,0	155 b	5,4 b	1454 a	+ 17%

Mean values with same letter are not significantly different from each other, Duncan test (α = 0,05).