Potassium nitrate sprays improved plant growth, yield and fruit storability of cucumber

The objective of this study was to evaluate the effects of sprays with calcium nitrate, potassium nitrate and Anfaton growth stimulator on plant growth, yield and fruit storability of soil grown cucumber cv. Al-Hytham in Iraq.

Three concentrations of Anfaton; 0, 600 and 1000 mg/L and five concentrations of spray solutions; 0 mM (control), 10 and 15 mM of calcium nitrate and 10 and 15 mM of potassium nitrate in addition to the combination of Anfaton and the two nutrients were used.

The experiment was set up in a silt clay soil in a Complete Randomized Block Design (CRBD) with three replications. Spraying was conducted three times; first spray was applied 20 days after transplanting and repeated every 15 days for the second and third spray. With respect to only potassium nitrate sprays, the foliar sprays with 15 mM KNO_3 (1,5 g KNO_3/L) resulted in statistically significantly higher values for plant height, leaf area, chlorophyll content, average fruit weight, total number of fruits and the total yield compared to the control (Table 1 & 2). KNO_3 sprays were also beneficial in controlling fruit weight loss and maintaining total soluble solids at higher level during storage.

Table 1. Effect of sprays with potassium nitrate on plant characteristics of cucumber cv. Al-Hytham.

Treatment	Plant height (cm)	Leaf area (dm^2 $planta^{-1}$)	Chlorophyll content (mg g^{-1} pf)
Control	161	70	0,432
10 mM KNO_3	170	77	0,552
15 mM KNO_3	170	78	0,592
LSD (P=0,05)	6,1	3,3	0,120

Table 2. Effect of sprays with potassium nitrate on yield characteristics of cucumber cv. Al-Hytham.

Treatment	Av. Fruit weight (g)	Total no. of fruist plant	Total yield (kg $plant^{-1}$)
Control	103,2	14,9	1,5
10 mM KNO_3	111,0	16,0	1,8
15 mM KNO_3	114,5	20,1	2,3
LSD (P=0,05)	6,5	3,3	0,4