Technical Data Report

Researcher: Scott Nissen, Ph.D.
Prepared by J.R. Martineau, Ph.D.
Director of Technical Services

Effects of NUTRIPLANT™ AG on Potato Production

Objective

The objective of the trial was to determine the effects of three applications of Nutriplant AG on production of potatoes.

Materials and Methods

A field trial was conducted on potatoes (*Solanum tuberosum* cv. Russet Burbank) at the independently owned and operated agricultural research facility, Irrigation Research Foundation, at Yuma, Colorado, USA, under the supervision of Colorado State University. The test design was a complete block with three replications. Test plot consisted of 4 rows; each 76 cm (30 inches) wide and 15 meters (50 feet) long. The planting population was 52,000 plants/ha (21,000 plants/acre). Nutriplant AG was applied three times: at the 6-8 leaf stage, four weeks later and at bulking. Each application was done at a rate of 1,040 ml/ha (14 fl oz/acre), through a ground spray applicator. Control plots were left untreated. Six weeks before planting, all plots were fertilized with urea applied at a rate of 344 kg/ha (306 lb/acre) treated with Agrotain urease inhibitor at a rate of 4 ml/kg (1 gallon per 2000 lb). The plots were treated three times with herbicides during duration of the trial. Dual was applied at a rate of 1407 ml/ha (1 pint/acre) with Spartan at 147 ml/ha (2 fl oz/acre) at the same time as the first application of Nutriplant AG. One month later, Quadris was applied at a rate of 586 ml/ha (8 fl oz/acre). Twenty days before harvest, Diquat was applied at a rate of 586 ml/ha (8 fl oz/acre) with non-ionic surfactant at a concentration of 1% by volume. All other cultural practices followed local practices and were the same for the treated and the control plots. At harvest time, the potato yield was measured and the potatoes graded into two categories according to their weight: less than 113 g (<4 oz) and greater than 113 g (>4 oz). The data were analyzed using standard statistical procedures.

Results

Nutriplant AG applied three times during growing season significantly increased total potato yield by 6,899 kg/ha (6,140 lb/acre) a 35.9% over the untreated control (Table 1). Treatment also increased the percent of bigger tubers from 16.7 to 23.6%, reducing the percent of smaller tubers from 83.3 to 76.4%.

Table 1. Effects of three applications of Nutriplant AG on potato production. Irrigation Research Foundation, Yuma, Colorado, USA.

Treatment	Yield				Tuber Size Distribution (%)	
	Yield (kg/ha)	Difference (kg/ha)	Yield (lb/acre)	Difference (lb/acre)	< 113 g (4 oz)	> 113 g (4 oz)
Control	19,224a	-	17,110a	-	83.3	16.7
Nutriplant AG	26,123b	6,899	23,250b	6,140	76.4	23.6

Numbers followed by different letters are statistically significant ($p<0.05$).

Conclusions

Nutriplant AG, applied three times during growing season increased potato yield by 35.9% over the untreated control. Nutriplant AG also increased the percent of large size tubers and decreased the percent of the small tubers.