

Technical Data Report

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Effects of NUTRIPLANT™ AG on Potato Production

Objective

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

Materials and Methods

A field trial was conducted on potatoes (*Solanum tuberosum* cv. Yukon Gold) 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 randomized 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 two times: at the 6-8 leaf stage (about two months after planting) and four weeks later. 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. All plots were fertilized with dry spread of 14-27-0-S10.8-Zn 5.6 at a rate of 187 kg/ha (166 lb/acre) early in the season. Two weeks before planting, liquid fertilizer 5-50-5 at a rate of 169 liter/ha (18 gallon/acre) was applied using Strip-Till Orthman unit. One month after planting, all plots received herbicide treatments of Outlook at a rate of 1,172 ml/ha (16 fl oz/acre) and Lexone at 293 ml/ha (4 fl oz/acre), followed by application of Select at 586 ml/ha (8 fl oz/acre) with crop oil at a concentration of 1% by volume one week later. One week after second application of Nutriplant AG, all plots were treated with fungicides Manzate applied at 2.25 kg/ha (2 lb/acre). Two weeks later, fungicide Tanos at a rate of 440 ml/ha (6 fl oz/acre) was applied with a non-ionic surfactant at a rate of 2.34 liter per 378 liter (1 quart per 100 gallon) of spray solution. Three weeks later, fungicide Manzate was applied at a rate of 2.25 kg/ha (2 lb/acre) combined with Kocide 200 at 1.69 kg/ha (1.5 lb/acre) and non-ionic surfactant at a rate of 2.34 liter per 378 liter (1 quart per 100 gallon). 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 were graded into three categories according to their weight: less than 227 g (<8 oz), 227 to 397 g (8-14 oz) and greater than 397 g (>14 oz).

Results

Nutriplant AG applied twice during growing season increased total potato yields by 5,724 kg/ha (5,095 lb/acre), a 15.6% over the untreated control. In a similar trial on potatoes, Nutriplant AG applied three times during growing season increased yield by 35.9% (*POTAUSCO0402*). The treatment also increased the percent of large tubers from 13 to 15%, and medium from 46 to 50% and decreased the number of small tubers from 41 to 35%, which confirmed previous findings with three applications of Nutriplant AG.

Table 1. Effects of two 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)	<355 g (<8 oz)	235-411 g (8-14 oz)	>411 g (>14 oz)
Control	36,633	-	32,604	-	41	46	13
Nutriplant AG	42,357	5,724	37,699	5,095	35	50	15

Conclusions

Nutriplant AG applied twice during growing season increased potato yield by 15.6% over the untreated control.

Nutriplant AG also increased the percent of large and medium tubers and decreased the percent of small tubers.