Technical Data Report

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Evaluation of NUTRIPLANT™ SD and APSA-80 Applications on Production of Irrigated Corn

Objective

The objective of the study was to determine the effects of Nutriplant SD and APSA-80 applications on production of irrigated corn.

Materials and Methods

The field trial was conducted on irrigated corn (*Zea mays* L., var DeKalb DKC 6297) at the independently owned and operated agricultural research facility, Irrigation Research Foundation (IRF) at Yuma, Colorado, USA under the supervision of Colorado State University. Two uniform plots were selected for the trial. Two treatments were tested: 1) Control and 2) Nutriplant SD applied to seeds after APSA-80 broadcast applications prior to planting. Corn was planted at 83,980 seeds/ha (34,000 seeds/acre) on 5 May 2014. APSA-80 was applied at 1.1 l/ha (15 fl oz/acre) on April 8. Seeds were treated with Nutriplant SD at 0.5 kg/100 kg (8 oz/100 lb). Fertilizer 23-0-3-5.7S was applied at 94 l/ha (10 gal/acre) 10 cm (4 inch) deep and 122 l/ha (13 gal/acre) 25 cm (10 inch) deep using a strip-till implement on April 1 prior to planting the corn. At planting, IRF starter fertilizer 22.7-9.1-1.9-1.3S-0.05Zn was applied 5 cm to the side and 5 cm deep (2x2 inches) at 168 l/ha (18 gal/acre). Additionally, all plots were fertilized with 32-0-0 at 94 l/ha (10 gal/acre) through the irrigation system on 2 June, 1, 14 and 21 July. Weed control included application of Lumax EZ at 6.3 l/ha (2.7 qt/acre) with Touchdown Total at 2.3 l/ha (32 fl oz/acre) and Ammonium Sulfate (AMS) at 1 kg/100 l (8.5 lb/100 gal) of water and a non-ionic surfactant (NIS) at 0.25 l/100 l (1 qt/100 gal) of water on 5 May 2014. The crop was irrigated with a total water amount of 20.3 cm (8 inches) and received 40.6 cm (16 inches) of rainfall during the season. Other cultural practices followed local practices and were the same for treated and control plots. Corn was harvested on 2 November and yield was determined and adjusted to 15.5% moisture.

Results

Application of Nutriplant SD following application of APSA increased corn production (Table 1). Nutriplant SD applied to seeds at 0.5 kg/100 kg (8 oz/100 lb), after previous broadcast application of APSA-80 to the experimental area at 1.1 l/ha (15 fl oz/acre), improved corn yields by 2,126 kg/ha (33.9 bu/acre) or 18.3% increase over the control.

Table 1. Effects of Nutriplant SD and APSA-80 on corn yields. Irrigation Research Foundation, Yuma, Colorado, USA.

Treatment	Corn Yield		Difference		Difference (%)
	(kg/ha)	(bu*/acre)	(kg/ha)	(bu/acre)	
Control	11,603	185.0	-	-	-
Nutriplant SD at 0.5 kg/100 kg (8 oz/100 lb) seeds after APSA-80 broadcast application at 1.1 l/ha (15 fl oz/acre) prior to planting	13,729	218.9	2,126	33.9	18.3

**One bushel (bu) of corn equals 56 lb at 15.5% grain moisture*

Conclusions

Compared to the control, application of Nutriplant SD at 0.5 kg/100 kg (8 oz/100 lb) to seeds after broadcast application of APSA-80 at 1.1 l/ha (15 fl oz/acre) improved corn yields by 18.3%.