

Technical Data Report

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Effects of Nutriplant™ AG on Irrigated Soybeans

Objective

The objective of this study was to determine the effects of Nutriplant AG on irrigated soybeans.

Materials and Methods

The field trial was conducted on soybean (*Glycine Max* L. cv. Syngenta NK 24-K2) at the Irrigation Research Foundation located in Yuma, Colorado, USA under the supervision of Colorado State University in 2015. Two uniform plots were selected for the trial. Two treatments were tested: 1) Untreated control with starter fertilizer, 2) Nutriplant AG at 1.2 l/ha (16 fl oz/acre) applied at pre-bloom on 5 July and again at pod-set (R3-R4) stage on 9 August. Soybeans were planted at 444,600 seeds/ha (180,000 seeds/acre) with seed inoculant Vault SP on 27 May. Using strip-till, liquid 17-8-1-4.8S fertilizer 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 on 24 March. On 10 April, soil detoxifier Overhaul was applied at 4.7 l/ha (64 fl oz/acre). At planting, starter fertilizer 15.7-8.9-2.6-2.6S-0.047Zn was applied 5 cm to the side and 5 cm deep (2x2 inches) at 117 l/ha (12.5 gal/acre) to all plots. Additionally, 28-0-0-5 fertilizer was applied through the irrigation system at 75 l/ha (8 gal/acre) on 26 June, 2 and 8 July and 93 l/ha (10 gal/acre) on 28 July. Weeds were controlled with the following applications: Boundary at 1.75 l/ha (1.5 pt/acre) with Touchdown Total at 2.3 l/ha (32 fl oz/acre) and ammonium-sulfate (AMS) at 0.25 l/100 l (1 qt/100 gal) and nonionic surfactant (NIS) at 0.25 l/100 l (1 qt/100 gal) of water on 28 May; Fusilade DX at 0.4 l/ha (6 fl oz/acre) with Touchdown Total at 2.3 l/ha (32 fl oz/acre) and fertilizer 10-34-0 at 2.3 l/ha (2 pt/acre) and NIS at 0.25 l/100 l (1 qt/100 gal) of water on 24 June; and Fusilade DX at 0.4 l/ha (6 fl oz/acre) with fertilizer 10-34-0 at 2.3 l/ha (2 pt/acre) on 16 July. Soybeans were irrigated with 40.1 cm (15.8 inches) of water and received 32.5 cm (12.78 inches) from rainfall during the season. Other cultural practices followed local practices and were the same for treated and untreated plots. Soybeans were harvested on 23 September and grain yield was adjusted to 13% moisture.

Results

Foliar application of Nutriplant AG improved soybean yields (Table 1). Application of Nutriplant AG at 1.2 l/ha (16 fl oz/acre) at pre-bloom stage and pod-set (R3-R4) stage with starter fertilizer at planting increased soybean yields by 323 kg/ha (4.8 bu/acre) over control with starter fertilizer.

Table 1. Influence of Nutriplant AG on irrigated soybean grain yields at Irrigation Research Foundation, Yuma, Colorado, USA in 2015.

Treatment	Yield (kg/ha)	Yield (bu/acre)	Difference from control (kg/ha)	Difference from control (bu/acre)	Difference (%)
Control with starter fertilizer at planting	2,688	40.0	-	-	-
Starter fertilizer at planting and Nutriplant AG at 1.2 l/ha (16 fl oz/acre) at pre-bloom stage and pod-set (R3-R4) stage	3,011	44.8	323	4.8	12.0

Conclusions

Compared to untreated control with starter fertilizer, application of Nutriplant AG at 1.2 l/ha (16 fl oz/acre) at pre-bloom stage and pod-set (R3-R4) stage increased yield by 12.0%.