

Technical Data Report

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Evaluation of NUTRIPLANT™ SL and AG on Production of Irrigated Corn

Objective

The objective of the study was to determine the effects of Nutriplant SL and Nutriplant AG on production of irrigated corn.

Materials and Methods

The field trial was conducted on irrigated corn (*Zea mays* L., var. Golden Harvest G07B39-3111A) at the independently owned and operated agricultural research facility, Irrigation Research Foundation (IRF) at 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 and 2) Nutriplant SL at 0.6 l/ha (8 fl oz/acre) with 37 l/ha (4 gal/acre) of water applied in-furrow at planting with starter fertilizer followed up by foliar application of Nutriplant AG at 1.2 l/ha (16 fl oz/acre) at 6-8 leaf stage on 2 July. Glyphosate herbicide was applied together with Nutriplant AG. On 30 March, 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 using strip-till implement. Corn was planted at 83,980 seeds/ha (34,000 seeds/acre) on 13 May. At planting, starter fertilizer 15.7-8.9-2.6-2.6S-0.1Zn was applied 5 cm to the side and 5 cm deep (2x2 inches) at 168 l/ha (18 gal/acre) to all plots. The 28-0-0-5 fertilizer was applied at 56.1 l/ha (6 gal/acre) on 11, 16 and 24 June, 93.5 l/ha (10 gal/acre) on 3 and 12 July through sprinkler irrigation system. Weed control included application of Lumax EZ at 5.6 l/ha (2.4 qt/acre) with Touchdown Total at 2.3 l/ha (32 fl oz/acre) and Ammonium-sulfate (AMS) at 0.25 l/100 l (32 fl oz/100 gal) of water and nonionic surfactant (NIS) at 0.25 l/100 l (1 qt/100 gal) of water on 15 May. The crop received 37.3 cm (14.7 inches) of rainfall and 25.3 cm (9.96 inches) of water from irrigation during the season. Other cultural practices followed local practices and were the same for treated and control plots. Corn was harvested on 31 October and yield was determined and adjusted to 15.5% moisture.

Results

Application of seed and foliar treatments improved corn yields (Table 1). Nutriplant SL applied at 0.6 l/ha (8 fl oz/acre) in-furrow at planting with starter fertilizer and followed by Nutriplant AG at 1.2 l/ha (16 fl oz/acre) at 6-8 leaf stage increased yields by 1,351 kg/ha (21.6 bu/acre) compared to control with starter fertilizer alone.

Table 1. Effects of Nutriplant SL and Nutriplant AG on irrigated corn yields. Irrigation Research Foundation, Yuma, Colorado, USA.

| Treatment | Corn Yield | | Difference | | Difference (%) |
|--|------------|------------|------------|-----------|----------------|
| | (kg/ha) | (bu*/acre) | (kg/ha) | (bu/acre) | |
| Control with starter fertilizer | 12,785 | 203.8 | - | - | - |
| Nutriplant SL at 0.6 l/ha (8 fl oz/acre) in-furrow at planting with starter fertilizer and Nutriplant AG at 1.2 l/ha (16 fl oz/acre) at 6-8 leaf stage | 14,136 | 225.4 | 1,351 | 21.6 | 10.6 |

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

Conclusions

Compared to the control with starter fertilizer, application of Nutriplant SL applied at 0.6 l/ha (8 fl oz/acre) in-furrow with starter fertilizer and followed up by Nutriplant AG application at 1.2 l/ha (16 fl oz/acre) at 6-8 leaf stage improved yield of irrigated corn by 10.6%.