

# Technical Data Report

## Review

Prepared by Pawel Wiatrak, Ph.D.  
Director of Technical Services

### Evaluation of NUTRIPLANT™ SD on Production of Irrigated Sunflower

#### Objective

The objective of the study was to determine the effect of Nutriplant SD application on production of irrigated sunflower.

#### Materials and Methods

Field trials were conducted on irrigated sunflower (*Helianthus annuus* L.) at the independently owned and operated agricultural research facility, Irrigation Research Foundation, Yuma, Colorado, USA under the supervision of Colorado State University. Treatments consisted of 1) Untreated control and 2) Nutriplant SD at 250 gms/100 kg (4 oz/100 lb) seeds. Sunflower was planted on May 31, 2002 and May 28, 2003. Seeding density was 44,460 seeds/ha (18,000 seeds/acre) in 2002 and 54,240 seeds/ha (22,000 seeds/acre) in 2003. Test plots were 4 rows wide and 198 meters (650 feet) long. Two uniform plots were selected for each treatment. In the treated plot, Nutriplant SD was applied to seeds prior to planting. The control plot was left untreated. Starter fertilizer (10-34-0) was applied at 56 l/ha (6 gal/acre) with 12-0-26 fertilizer at 28 l/ha (3 gal/acre) and 32-0-0 fertilizer at 47 l/ha (5 gal/acre) on May 31, 2002. In 2003, starter fertilizer (Kugler 55) was applied at 75 l/ha (8 gal/acre) on May 28. Weed control included spraying of Sonolan at 4.1 l/ha (3.5 pt/acre) with Spartan 75 F at 0.2 l/ha (2.5 oz/acre) on May 28 in 2002, and Spartan 75 DF at 0.2 l/ha (2.5 oz/acre) with Dual Magnum at 1.2 l/ha (1.0 pt/acre) on May 23 in 2003. Other cultural practices, including fertilization, irrigation and pest management, followed local practices and were the same for treated and untreated plots. Sunflower was harvested on October 22, 2002 and October 7, 2003.

#### Results

Application of Nutriplant SD to sunflower seeds increased yield by 314.0 kg/ha (280.4 lb/acre) in 2002, which was an 18.2% increase over the untreated control (Table 1). In 2003, yield was 13.8 kg/ha (12.3 lb/acre) or 0.5% higher than the control. On average, Nutriplant SD application to seeds produced 163.9 kg/ha (146.4 lb/acre) or 9.4% higher yield than the untreated control.

Table 1. Effects of Nutriplant SD applied directly to the seeds at planting on sunflower yields. Irrigation Research Foundation, Yuma, Colorado, USA.

Year	Control		Nutriplant SD		Difference		Difference (%)
	(kg/ha)	(lb/acre)	(kg/ha)	(lb/acre)	(kg/ha)	(lb/acre)	
2002	1729.4	1544.1	2043.4	1824.5	314.0	280.4	18.2
2003	2781.6	2483.6	2795.4	2495.9	13.8	12.3	0.5
Average	2255.5	2013.9	2419.4	2160.2	163.9	146.4	9.4

#### Conclusions

Compared to the untreated control, application of Nutriplant SD to seeds increased sunflower yields by an average of 9.4%, with the yield increases reaching as high as 18.2% in 2003.

**References**

SUNFUSCO0201

SUNFUSCO0301