

**Effects of Nutriplant SD™**  
**on**  
**Seedling Development of Corn**

# Effects of Nutriplant SD™ on Seedling Development of Corn

## ABSTRACT

*Nutriplant SD was applied to seed of three different corn hybrids (Zea mays var. dentata). The experiment was conducted in the laboratory. The product proved to be beneficial by increasing shoot and root mass and length of seedlings. Root hairs were also increased substantially.*

## OBJECTIVE

To determine the benefits of Nutriplant SD on early seedling development of different corn hybrids.

## MATERIALS AND METHODS

Nutriplant SD and three corn hybrids (yellow dent) were used: Dekalb, 477, Pioneer 35N05, and an un-named hybrid “X”.

Two separate experiments were conducted. Each experiment consisted of an untreated control and Nutriplant SD.

Three filter paper discs were placed in each plastic, disposable, 9 cm inch diameter Petri dish, and 15 corn seeds were placed on the paper. Six ml of purified water were added to each dish. Seeds were covered with a single layer of filter paper. Two additional ml of water were added on top of the paper, and the lid placed on each Petri dish. The seeds were germinated in darkness, at room temperature (approximately 70<sup>E</sup> F). Each treatment was replicated four times. When germination began, the top filter paper and Petri dish lid were removed. After seven days, seedlings were removed from the Petri dishes and fresh weights of roots and shoots determined separately.

Differences between the control and treated means were determined using a Student’s t-test with significance set at p# 0.05.

## RESULTS AND DISCUSSION

The fresh shoot and fresh root weights were increased by the application of Nutriplant SD. The means are presented in Table 1 and illustrated in Figures 1-6.

Table 1. Fresh Shoot and Root Weights.

	Mean Fresh Shoot Weights Per Seedling (mg)			
	<u>Control</u>	<u>Treated</u>	<u>Control</u>	<u>Treated</u>
	Shoots		Roots	
Dekalb	230.2	362.2	234.7	373.0
Pioneer	127.4	184.6	152.4	282.0
Hybrid X	101.3	160.2	124.1	236.1

Figure 1. Dekalb Hybrid Shoot Weights

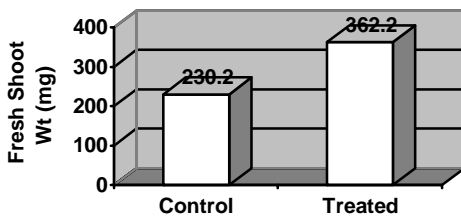


Figure 2. Dekalb Hybrid Root Weights

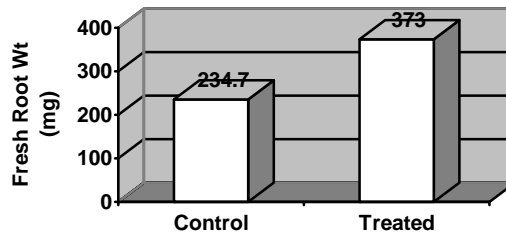


Figure 3. Pioneer Hybrid Shoot Weights

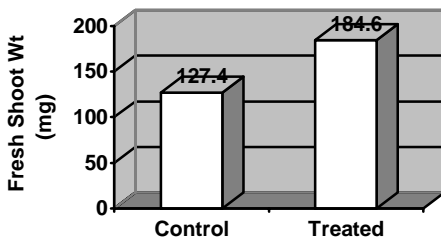


Figure 4. Pioneer Hybrid Root Weights

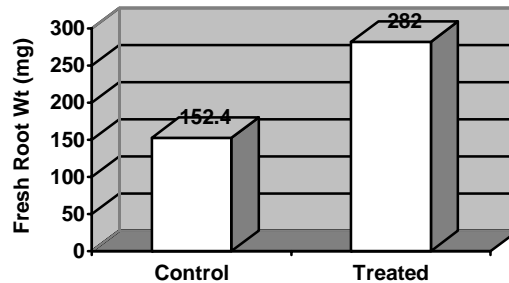


Figure 5. Hybrid X Shoot Weights

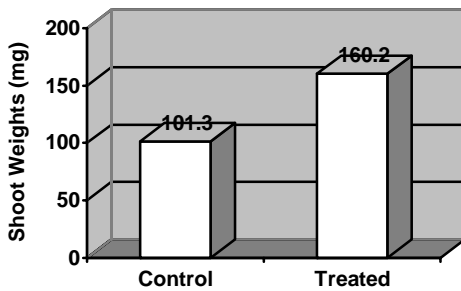


Figure 6. Hybrid X Root Weights

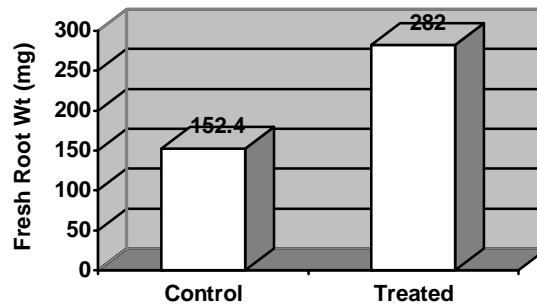
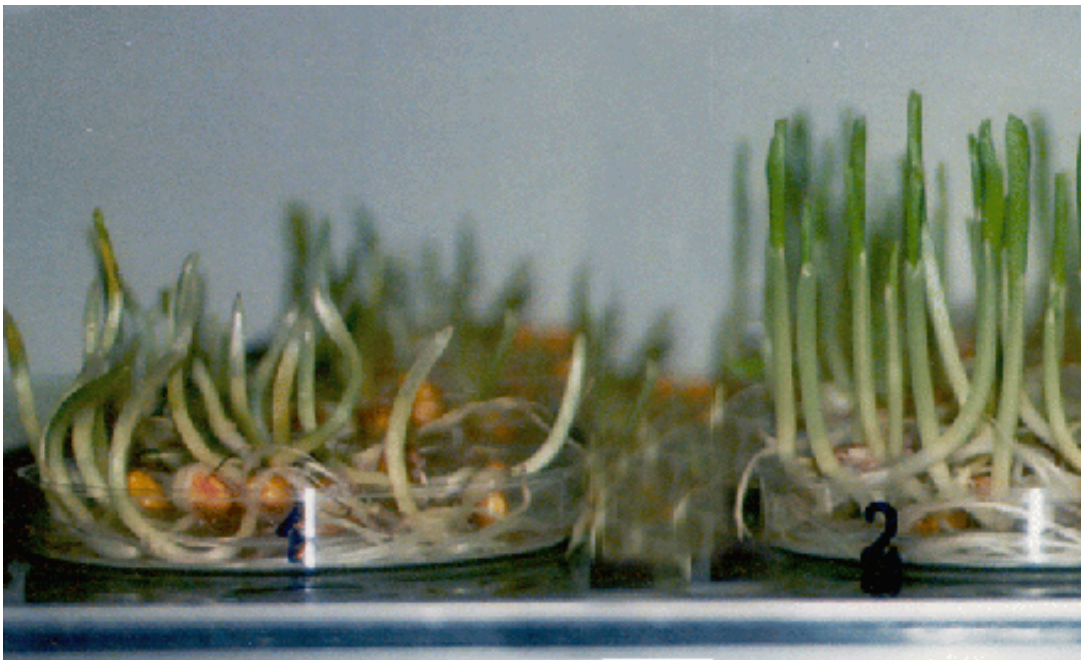


Figure 7. Visible differences in shoot size.



**Untreated**

**Treated**

Figure 8. Visible differences in root hairs.



**Untreated**

**Treated**

## **Summary**

1. Nutriplant SD increased both the shoot and root weights on all three corn hybrids tested. These differences were statistically significant.
2. With the Dekalb hybrid, shoot weights increased by 57% root weights by 60%. These differences were statistically significant.
3. With the Pioneer hybrid, shoot weights increased by 45% and root weights by 85%. These differences were statistically significant.
3. With Hybrid X, shoot weights increased by 58% and root weights by 89%. These differences were statistically significant.

## **Conclusion:**

**Nutriplant SD improves corn seedling growth by increasing both shoot and root development.**