

THE EFFECT OF TWO GROWTH REGULATORS ON DRY-BULB ONION PRODUCTION

Lynn Jensen
Malheur County Extension Office
Ontario, OR, 1998

Introduction

There have been reports in trade magazines about the positive response of growth regulators in dry-bulb onion production. Reports claim greater yields and larger size bulbs from treated fields. This project examined the effect of two growth regulators on onion bulb yield and size.

Materials and Methods

The growth regulators evaluated were Triggrr, manufactured by Westbridge, and Propel, manufactured by Entek. Trials were established on four grower fields in three locations, Ontario, Vale, and Oregon Slope, OR. Plots were 4-beds wide by 50-ft long. The first Triggrr application was made at planting by injecting the material into the soil through the planter shoe so that it was in close proximity to the germinating seed. The second application was made at the early bulbing stage by sidedressing the material into the bed approximately 2 inches to the side of the row. Propel was applied as a foliar spray at about mid-bulbing. The at planting Triggrr (soil) was applied at a rate of 23.9 oz/acre. The sidedressed Triggrr (foliar) was applied at 24.6 oz/acre and the Propel was applied at 23.9 oz/acre. The carrier was water at 30.7, 90.1, and 30.7 gal/acre respectively.

The application sites and varieties were as follows:

Table 1. Application of growth regulators on three onion varieties by sites and dates, OR, 1998.

Site	Location	Variety	Planting date	Triggrr sidedress application date	Propel application date
1	Ontario	Viper	3/19/98	6/10/98	7/10/98
2	Ontario	Blanco Duro	3/30/98	6/10/98	7/10/98
3	Vale	Viper	3/30/98	6/11/98	7/20/98
4	Oregon Slope	Vision	4/20/98	6/11/98	-----

Results and Discussion

During the growing season no visible differences were noted in any of the plots. The two Ontario sites were decimated by a hail storm on July 4, which affected total size and yield. Twenty feet of the two center rows of each plot was harvested, and the onions were graded and weighed (Table 2).

Only one of the four trials had a significant response ($P \leq 0.05$) to the growth regulator. This was the Vale site (site 3) where the total yield was much less than at the Ontario site where the same variety was grown. The Ontario site also received hail, which reduced yields on all of the farms within the hail zone. Two of the sites had the untreated check as the highest yield, although this was not significantly different from the treatments. It is possible that the onions at site 3 were under stress during the growing season, and that stress may have enabled the growth regulators to stimulate additional growth. There may be some environmental conditions under which these materials enhance growth, but, if so, these conditions were not identified in these trials.

Table 2. The effects of Triggrr and Propel growth regulators on onion bulb yield and grade, 1998.

Location	Variety	Treatment	cwt/acre				Total yield
			Medium	Jumbo	Colossal	Jumbo & Colossal	
Site 1 (Ontario)	Viper	Triggrr at planting / sidedressed	111	551	41	592	704
		Triggrr as sidedress only	90	538	36	574	665
		Propel	125	513	32	545	671
		Untreated check	98	561	48	609	707
		LSD (0.05)	NS	NS	NS	NS	NS
Site 2 (Ontario)	Blanco Duro	Triggrr at planting and sidedressed	184	342	0	342	526
		Triggrr as sidedress only	172	316	0	316	488
		Propel	180	323	0	323	503
		Untreated check	196	269	0	269	466
		LSD (0.05)	NS	NS	NS	NS	NS
Site 3 (Vale)	Viper	Triggrr at planting and sidedressed	74	343	148	491	566
		Triggrr as sidedress only	65	404	145	549	614
		Propel	67	376	142	518	585
		Untreated check	84	316	152	468	552
		LSD (0.05)	NS	53.5	NS	NS	NS
Site 4 (Oregon Slope)	Vision	Triggrr at planting and sidedressed	53	490	277	767	820
		Triggrr as sidedress only	58	578	236	814	871
		Untreated check	42	602	214	816	858
		LSD (0.05)	NS	NS	NS	NS	NS