

# BLOCKER® AND POTATO SEED PIECE TREATMENTS

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## Introduction

Fungicide treatments are commonly used on potato seed. There is no current information on the efficacy of these treatments under Malheur County environmental conditions. Local growers, seeking information about Blocker, a soil treatment applied at planting for the control of rhizoctonia, asked for a local trial under Malheur County environmental conditions. This is the second year of the study. Even though in 1999 Blocker was applied following label directions, there were questions about whether the method of application was as effective as it should have been. The study was repeated, carefully following the application guidelines set forth by the manufacturer's representative.

## Materials and Methods

The trial was established on the Roberts' farm near Ontario, OR. A small portion of the field was flagged, treated, and hand planted. The Blocker and Ridomil treatments were made just prior to planting by pulling an empty potato planter through the trial area. The liquid applicator was attached to the planter shoe and powered by a CO<sub>2</sub> sprayer. The Blocker and Ridomil treatments were applied with water as a carrier at a rate of 17.3 gal/acre. No seed was planted, but the planter opened up the soil to make a hill. Blocker and Ridimil were compared with standard products.

The seed was hand cut into approximately 2-oz pieces. The seed treatments were applied by putting the cut seed and the fungicide in a plastic bag and mixing the seed with the treatment. Each plot was 50 ft long by one row wide. The trial was a randomized complete block design with four replications. The seed were planted on April 24th. Planting depth was 6-8 inches below the top of the hill, and the seed was spaced 12 inches apart. The trial was planted using a trenching shovel to open the soil so the seed piece could be placed at the proper depth. Rhizoctonia severity was measured on September 26. Twenty ft of row was hand dug and graded. Five plants per plot were evaluated to determine the amount and severity of rhizoctonia infection.

## Results

The two Maxim treatments had significantly lower levels of rhizoctonia infection than most of the other treatments except the Blocker + Tops MZ and the Tops 5.0 (Table 1). The two Maxim treatments also had among the highest yield of 4-8 oz tubers and the Maxim alone had the lowest yield of tubers >12 oz (Table 2).

Since rhizoctonia stem infection can reduce tuber set, it is possible that the healthier stems in the Maxim treatments produced a heavier set, which would reduce tuber size. There were no significant differences in overall yield between any of the treatments.

### Conclusions

Maxim may have more potential for higher yields than the other treatments because of the low incidence of rhizoctonia compared to the other treatments. There must, however, be a long enough growing season to allow the heavier set to reach maturity at an acceptable size level. An application of maleic hydrazide might be helpful in limiting set. It would appear that under normal conditions in Malheur County, all of the seed treatments produced acceptable and similar yields.

Table 1. Stem number and rhizoctonia infection in Russet Burbank potato stems as influenced by seed and soil fungicide treatments, Ontario, OR, 2000.

Treatment	Application rate	Average stem number/hill	Rhizoctonia rating*
Blocker	10 pint/acre	2.8	5.2
Blocker + Tops MZ	10 pint/acre + 1.0 lb/100 lb cut seed	2.4	4.2
Blocker + Maxim	10 pint/acre + 0.5 lb/100 lb cut seed	2.4	1.7
Tops 5.0	0.5 lb/100 lb cut seed	3.2	4.2
Untreated Check		2.8	7.0
Maxim	0.5 lb/100 lb cut seed	2.0	1.9
Tops MZ	1.0 lb/100 lb cut seed	2.0	5.1
Blocker + Ridomil Gold	10 pint/acre + 2.5 lb/acre	2.2	6.2
LSD (0.05)		NS	2.6

\*Based on a scale of 1 -10 with 1 = no infection and 10 = whole stem infection.

Table 2. Yield of 'Russet Burbank' potatoes as influenced by seed and soil fungicide treatments, Ontario, OR, 2000.

Treatment	U.S. No. 1			Total	Total No. 2	Total yield
	>12 oz	8-12 oz	4-8 oz			
	-----cwt/acre-----					
Blocker	139.5	84.8	85.9	310.2	109.5	419.7
Blocker + Tops MZ	120.8	111.5	109.8	342.1	107.2	449.3
Blocker + Maxim	119.7	89.9	137.6	347.2	77.5	424.7
Tops 5.0	108.1	92.2	110.3	310.6	93.6	404.2
Untreated Check	140.7	80.0	77.3	298.0	139.0	437.0
Maxim	68.3	86.5	123.4	278.2	79.4	357.6
Tops MZ	137.0	86.8	97.6	321.4	151.1	472.5
Blocker + Ridomil Gold	111.5	104.7	105.2	321.4	99.6	421.0
LSD (0.5)	44.1	NS	31.9	NS	NS	NS