

Fosphite Onion Trial – 2004

Objective: To evaluate Fosphite for the control of downy mildew, *Peronospora destructor*, in onions compared to an industry standard treatment of Quadris.

Procedure: A trial site was established in a commercial field of yellow Danver variety onions near Brooks, Oregon on June 11, 2004. Onions were then in the 3 to 5 leaf growth stage and approximately 8 to 12 inches tall. Plot size was 13 ft X 42 ft. Treatments were applied with a 5 ft boom type plot sprayer in a total spray volume of 30 gallons per acre. Three applications were made at approximately 2 week intervals. The first application was made on 6/18, the second on 7/1, and the final on 7/18/04. On 7/15, Warrior was applied for thrip control. Observations were made frequently to detect potential development of downy mildew and/or blast in any of the treatments. On 8/17, all onions in an area 5 ft by 10 ft in the middle of each plot were harvested. Total weight and number of bulbs from each harvested plot was obtained and recorded. The treatments were as follows: 1) Untreated Check, 2) Fosphite @ 2 qts/ac, and 3) Quadris @ 10 oz/ac.

Results: Downy Mildew Infection on 7/28/04 (bulbs/plot).

Treatment	R1	R2	R3	R4	Total
1) UTC	0	0	0	7	7
2) Fosphite @ 2 qts/ac	0	0	0	3	3
3) Quadris @ 10 oz/ac	0	0	0	0	0

Results: Downy Mildew Infection on 8/3/04 (bulbs/plot).

Treatment	R1	R2	R3	R4	Total
1) UTC	9	11	0	15	35
2) Fosphite @ 2 qts/ac	3	5	0	4	12
3) Quadris @ 10 oz/ac	0	0	0	0	0

Results: Yield in total pounds of green weight per plot and number of bulbs per plot.

Treatment	R1	R2	R3	R4	Total	Ave./plot
1) UTC						
Weight	53.75	47.5	61.25	41.0	203.5	50.9
Bulbs	103	102	110	98	413	103.3
2) Fosphite @ 2 qts/ac						
Weight	58.50	40.75	57.25	50.25	206.8	51.7
Bulbs	90	96	95	82	363	90.8
3) Quadris @ 10 oz/ac						
Weight	50.50	62.50	47.75	54.50	215.3	53.8
Bulbs	80	96	100	89	365	91.3

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Discussion: The 2004 growing season was unusually warm and dry in the Willamette Valley and not conducive to early development of downy mildew in upland onions. When downy mildew finally appeared by the end of July, it was first seen in the wetter areas around sprinkler heads in the Untreated Check treatments and to a lesser degree in Treatment #2. The areas of infection increased in size and number in the Untreated Check treatments. Infections in Treatment #2 remained small and were limited to the area immediately around the sprinkler heads.

Conclusion: Results of this trial show significant downy mildew control in onions with three applications of Fosphite at the 2 qt/ac rate when compared to the Untreated Check. Data from this trial also suggest a slight yield increase over the untreated check with three applications of Fosphite @ 2 qts/ac.