

BRIEF ARTICLES

EFFECT OF POSTHARVEST INFECTION OF POWDERY MILDEW ON YIELD OF THE STRAWBERRY CULTIVAR NORTHWEST

Jack A. Freeman¹ and H. S. Pepin²

Powdery mildew caused by *Sphaerotheca macularis* (Wallr. ex Fr.) P. Magn. is usually present during the months of August and September on strawberry plants grown in the Pacific Northwest. 'Northwest', the most important cultivar grown in the area, is particularly susceptible to the disease.

There are no published data on the effect of postharvest mildew on the following year's yield and hence no real evidence that postharvest mildew is harmful. Growers, following current recommendations (1), carry out a rigorous and expensive control scheme involving the application of sulfur at intervals of 14 days throughout the period of most severe infection. The purpose of this investigation was to determine whether postharvest spraying for powdery mildew control in 'Northwest' strawberries is necessary.

Methods

Various fungicide treatments were evaluated at Abbotsford, B.C., in 1967 for the control of postharvest infection of powdery mildew on the Northwest cultivar (2). The experiment was laid out in a randomized block designed with six replicates. Each plot consisted of a single 30-ft row. The 1967 season was particularly favorable for the development of this disease, with unsprayed foliage showing over 90% infection (Table 1). The most effective treatment of those tested was benomyl at 0.25 lb/acre applied five times at 14-day intervals beginning July 21. This treatment reduced the average mildew infection, based on percentage of leaf area affected, to as low as 19%. The other treatments gave control somewhere between the two extremes. Therefore, the 1967 treatments provided an ideal set of plots with plants showing a full range of infection.

Results

Since the sprays usually recommended for mildew and fruit rot control were applied in

the spring, it was felt that any yield reduction in the plots would be due to mildew infection the previous summer. Since these reductions did not occur (Table 1), the results suggest that spraying for postharvest powdery mildew control on 'Northwest' strawberries is an unnecessary practice in the Pacific Northwest.

Table 1. Effect of postharvest infection of powdery mildew in the strawberry cultivar 'Northwest' on the following year's crop

Fungicide applied in 1967	Rate (lb/acre)	Number of sprays*	Powdery mildew rating Sept. 20, 1967 (%)**	Total yield 1968 (lb/plot)
Unsprayed			91 a [†]	38.6 a
Benomyl	0.25	1	90 a	38.1 a
Benomyl	0.25	3	65 b	34.1 a
Benomyl	0.25	5	19 c	36.9 a
Sulfur	3.6	3	73 ab	39.3 a
Sulfur	3.6	5	25 c	39.0 a
Dinocap	0.75	3	61 b	34.4 a
Dinocap	0.75	5	32 c	36.9 a

* Sprays applied as follows in 1967:

1 - July 21;

3 - July 21, Aug. 3, Aug. 18;

5 - July 21, Aug. 3, Aug. 18, Sept. 1, Sept. 15.

** Percentages were transformed for statistical analysis.

[†] Means not followed by the same letter are significantly different at the 5% level (Duncan's Multiple Range Test).

Literature cited

¹ Plant Physiologist, Research Station, Canada Department of Agriculture, Agassiz, British Columbia.

² Plant Pathologist, Research Station, Canada Department of Agriculture, Vancouver 8, British Columbia.

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2. Freeman, J.A. and H.S. Pepin, 1967. A systemic fungicide (Fungicide 1991) for the control of gray mold and powdery mildew in strawberries and raspberries. Can. Plant Dis. Surv. 47:104-107.