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ROSE BLACKSPOT CONTROL DEMONSTRATION
USING MICROMAX SPRAY HEADS
Smith County, 1982

George Philley and Lynn Brandenberger*

INTRODUCTION

Rose blackspot has conventionally been controlled with regular fungicide applications using hydraulic sprayers delivering 50-300 gallons of spray mixture per acre. With this technique, the foliage in most cases is sprayed to run off. Controlled droplet application (CDA) is relatively new to modern agriculture even though the concepts of CDA have been known for many years. Only in recent years have spray units been developed that deliver droplets of uniform size, which is the key component. Uniform size droplets enhance deposition and allow adequate coverage with very low volumes per acre (1-3 gallons). It is easy to visualize the advantages these sprayer units would have over conventional sprayers if both performed equally well. The CDA units used in this demonstration sell under the tradename "Micromax". This demonstration was established to determine the effectiveness of Micromax spray heads in applying fungicides for blackspot control.

PROCEDURES

Four Micromax spray heads were mounted on a tool bar and spaced on 48" centers so that each unit sprayed one row. The spray heads were set to run approximately six inches above the bushes. From May 27 to July 14, #35 orifice plates were used to deliver a total spray volume of 4.2 gallons/acre when traveling 4 mph and running the spray

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units at 3500 rpm with 20 lbs. pressure (Table I). Beginning with the July 21 application, the orifice plate was changed to a #20 and tractor speed reduced to 3.5 mph which lowered the spray volume per acre to 1.9 gallons. In addition, Bravo 500 was used instead of flowable Dithane M-45. Dithane was applied to 'Chicago Peace' on 7-day intervals except for June 17 when no application was made because of rainy weather while Bravo was applied on 10-day intervals.

In another location, 'Peace' was sprayed with Bravo 500 at 2 pints/acre the entire season. From June 10 - July 7, three applications were made 14 days apart. Beginning July 21, applications were made on 10-day intervals as listed in Table I for 'Chicago Peace'.

Table I. Fungicide spray schedule for blackspot control on Chicago Peace roses using Micromax spray heads.

<u>Spray Date</u>	<u>Chemical</u>	<u>Rate/Acre</u>	<u>Pressure</u>	<u>Spray Volume Per Acre</u>
May 27	Dithane M-45 (F)	3 pts.	20 lbs.	4.2 gal.
June 3	Dithane M-45 (F)	3 pts.	20 lbs.	4.2 gal.
June 10	Dithane M-45 (F)	3 pts.	20 lbs.	4.2 gal.
June 17	Didn't Spray	-----	-----	-----
June 23	Dithane M-45 (F)	3 pts.	20 lbs.	4.2 gal.
June 30	Dithane M-45 (F)	3 pts.	20 lbs.	4.2 gal.
July 7	Dithane M-45 (F)	5 pts.	20 lbs.	4.2 gal.
July 14	Dithane M-45 (F)	5 pts.	20 lbs.	4.2 gal.
July 21	Bravo 500	2 pts.	20 lbs.	1.9 gal.
July 30	Bravo 500	2 pts.	20 lbs.	1.9 gal.
August 10	Bravo 500	2 pts.	20 lbs.	1.9 gal.
August 19	Bravo 500	2 pts.	20 lbs.	1.9 gal.
August 30	Bravo 500	2 pts.	20 lbs.	1.9 gal.
September 9	Bravo 500	2 pts.	20 lbs.	1.9 gal.
September 20	Bravo 500	2 pts.	20 lbs.	1.9 gal.

RESULTS

Weather conditions in 1982 were not ideal for blackspot development. One major outbreak occurred in mid-June. Rainfall in August and September was lower than normal which prevented a late

season problem.

Flowable Dithane M-45 would probably have given respectable control with weekly applications if the June 17 application had been made and higher rates used. We intended to use the lower rate when plants were small and the higher rate as more foliage was produced. Because rainy weather prevented the June 17 spraying, considerable blackspot was noticed on June 30th. By July 6th, defoliation was evident.

Where Bravo 500 was applied to 'Peace' every 14 days, blackspot was controlled during the mid-June blackspot buildup. Since Bravo 500 was giving the best control, the decision was made to switch to this chemical for the remainder of the year. To obtain optimum control, both 'Peace' and 'Chicago Peace' were sprayed on 10-day intervals. By July 21, blackspot development was low, due to hot weather. Most infected leaves on 'Chicago Peace' had fallen off.

As previously stated, August and September were dry months and no blackspot developed on the treated rows. The last fungicide application was made on September 20. By October 26, some blackspot lesions were noticeable on 'Chicago Peace' but there was not enough to cause alarm. Cool to cold night temperatures prevented rapid disease buildup. Fairly good foliage was maintained until digging which was done the first week in December.

Favorable conditions for disease development would have allowed for more stringent testing of the application methods and chemicals used. However, the disease control that was observed appeared promising so that future trials of low volume application of fungicides for blackspot control in roses would be warranted.