

# How is Your Spraying Technique?\*

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Periodically the acaricide used in the spray program failed to provide adequate control yet on other occasions it provided excellent control. As far as could be determined the spray operation was carried on the same way on all occasions and no noticeable climatic conditions could be pinned down as the blameworthy cause of the difficulty. The situation resulted in a more careful look at spraying operations with particular reference to distribution and coverage of the spray. To do this we incorporated a fluorescent powder in the spray mixture without the knowledge of the men that were spraying. After the spray had dried leaf samples were collected from the bottom, middle, and top of the sprayed plants. These samples were examined under ultra violet light where the spray deposit fluoresced providing a graphic picture of the coverage and distribution of the spray. A leaf demonstrating "minimum acceptable coverage" was then chosen to serve as a standard and all the other leaves were then compared to this standard. The data thus obtained are presented in table 1 as the per cent of leaves demonstrating acceptable coverage. Both the upper and lower surface of the plants were thus evaluated. As can be seen in table 1 not all the leaves were adequately covered particularly in house B-9-E (Better Times) on the lower leaf surface, bottom of the plant. This is even more dramatically seen in house B-3-W (Garnett) where the coverage on the middle and bottom of the plants was totally inadequate. The difference in coverage between these two houses is mostly varietal but is also due to personnel and equipment. In order to determine the

**Table 1.** Spray Coverage on Two Rose Benches Treated with Fluorescent Powder. A. N. Pierson Co., Cromwell, Connecticut.<sup>a</sup> 1959.

House and Bench	% Leaves with Adequate Coverage	
	Upper Surface	Lower Surface
B9E—bench 6—top	53	66
B9E—bench 6—center	48	48
B9E—bench 6—bottom	47	26
B3W—bench 1—top	70	77
B3W—bench 1—center	.1	.1
B3W—bench 1—bottom	.1	.05

<sup>a</sup> Courtesy of the A. N. Pierson Co.

coverage variability due to equipment we tested several nozzles on one variety of plants with one man doing all the spraying. The leaves were examined in the same manner as before and the data presented in table 2. While these data must be interpreted as applying particularly to one variety of a given age they do demonstrate some startling differences between nozzles. The differences between these nozzles was not obvious when the spraying operation

\* Reprinted from "Current Status of Resistant Red Spider Studies at Cornell University." A Report to Roses Inc., September 1959.

**Table 2.** Percentage of Dubonett Leaves Demonstrating Adequate Coverage When Sprayed with Various Nozzles. A. N. Pierson Co., Cromwell, Connecticut.<sup>a</sup> 1959

Nozzle	Leaf Surface	Location on Plant	
		Top	Bottom
Foggitt	Upper	92	92
	Lower	92	69
Twin (No. 4 disc)	Upper	100	92
	Lower	83	46
Hardie "Carwash" (No. 4 disc)	Upper	0	20
	Lower	46	10
No. 6 disc	Upper	36	80
	Lower	72	53

<sup>a</sup> Courtesy of the A. N. Pierson Co.

was in progress. It is interesting to notice that the nozzles that produced the best coverage are also designed to provide the most breakup particularly the "Fogg-itt."

It seems apparent then that an important ingredient in control failure is the equipment and technique used in spraying. Consequently, time spent in evaluating equipment and personnel concerned with the spraying operation is time well spent.