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"RABBIT TRACKS" OF POINSETTIA

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"Rabbit tracks" is a term given several years ago by the late Professor D.C. Kiplinger of Ohio State University to a breakdown of tissue in the area between the axillary veins and along each side of the midrib of bracts of poinsettia (Figure 1). The disorder lowers the quality of the plant and if severe, makes the plant completely unsaleable.

The appearance of "rabbit tracks" has been reported more frequently the past year or two than in previous seasons. The cause of the problem is not known, at least not by the author. Quite a few causal factors have been suggested. The purpose of this article is to review and discuss them. As the 1980 season progresses, growers should be aware of the problem. Suggestions or clues as to the cause of "rabbit tracks" will be appreciated.

The following is a summary of information obtained by conversation and correspondence with about 20 commercial growers, researchers, and extension agents in several parts of the country after the 1979 season.

Cultivar

The problem has been seen on the following cultivars. Perhaps it has occurred on others.

1. 'Annette Hegg Supreme'
2. 'Annette Hegg Dark Red'
3. 'Annette Hegg White'
4. 'Annette Hegg Pink'
5. 'Annette Hegg Diva'
6. 'Mikkel Fantastic'
7. 'Mikkel Improved Rochford'
8. 'Mikkel Triumph'

The grower who observed the trouble in Improved Rochford reported no trouble on Rochford White and Pink. However, another reported no "rabbit tracks" on red, pink, and white Rochford cultivars. Similarly, several growers of the listed Annette Hegg cultivars reported no "rabbit tracks" in their crops. Apparently it can occur on various cultivars in some greenhouses but need not occur on the same cultivar grown in other establishments.

Seriousness of Injury

The amount of crop that was injured varied considerably. One grower reported 1% of his crop and another reported that 20% of his plants exhibited "rabbit tracks". Another said 15%.

One grower stated that 30% of his red Annette Hegg showed the trouble but only 5% of his pink. Another said 10% of his Annette Hegg Supreme pinched plants and 5% of his pinched pink and white were affected, but with unpinched ("straight up") plants, 30% of his pink and white and 40% of his red developed "rabbit tracks".

When was the problem first noticed?

Usually the latter half of November or very early December, so the problem appears late in the production time.

Type of greenhouse

"Rabbit tracks" have been observed in glass houses, glasshouses with single poly cover, glasshouses with double poly, fiberglass houses, single poly and double poly houses. One grower said that he had injured plants in his glass, single poly and double poly houses.

In one report, the writers stated that since the problem may be more serious in plastic houses or those with poor light intensity, they grew plants in a shaded house but no "rabbit tracks" appeared, perhaps due to a very bright fall in 1979.

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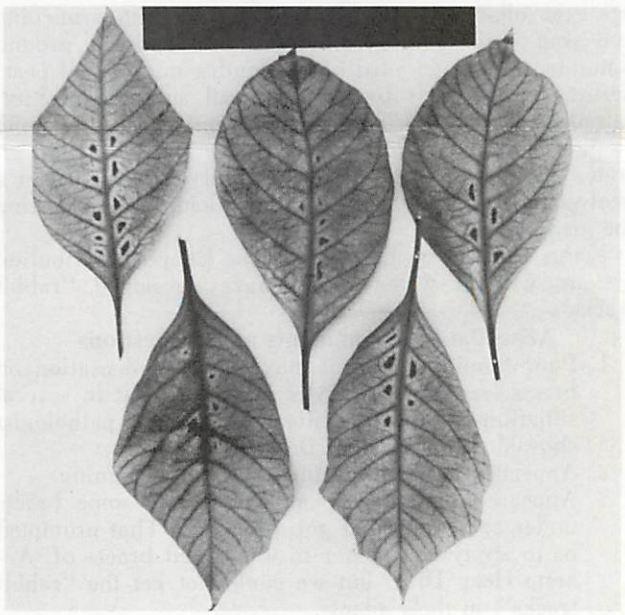

Figure 1. Typical "rabbit tracks" observed in the 1979 season.

"Rabbit Tracks" of Poinsettia (continued)

Type of heating

"Rabbit tracks" of poinsettias has appeared on plants in greenhouses with forced air overhead, hot water heating under benches, overhead radiant heat, and steam heat on side walls. I have seen "rabbit tracks" on poinsettias growing on a porous concrete floor with heating tubes in the floor.

One respondent wrote that the most severe problem was in an environment that was warm at night as opposed to cool nights. He also wrote about a grower who had plants in four temperature regimes and had the problem only in the area of higher night temperature; but he added that he was not sure that the cultivars were the same in each of the four temperature zones.

Another respondent wrote that he observed that this particular problem occurred at temperatures above 65°F and the problem seldom occurred where the temperature was below 65°F at night.

However, some growers, who reported the occurrence of "rabbit tracks", grew the poinsettias at 60-62° night temperatures, with day temperatures 10 to 15 degrees higher during the day.

Location in greenhouse

Nearly all reports indicate that there appears to be no relationship between occurrence of "rabbit tracks" and location in the greenhouse. One grower reported that it seemed to be a little worse in the center of the house.

A researcher wrote that the markings seemed more important on plants that were in the path of fans, drafts from doors or anything else that exposed the bracts to air movement. But he could not get the problem when plants in full flower were placed in front of a large fan. He continued, "We were moving warm air however, and air temperature might be important in the development of the injury." He concluded, "The problem is like trying to get bud blasting on lilies—it doesn't happen when you want it to, and it happens when you don't want it."

Nutrition, Root Medium, and Watering

One suggestion has been that the "rabbit track" problem is due to low calcium in the plant. But the problem has been observed with plants grown in peat-vermiculite and peat-perlite mixes containing 5 pounds of ground limestone per cubic yard of mix and a mix of soil:peat:perlite (equal parts by volume), all subsequently fertilized at every watering with 300 ppm N and 250 ppm from a combination of calcium nitrate and potassium nitrate. The bract injury also was observed on plants in a peat-vermiculite mix fertilized with calcium nitrate during the growing period.

Plants watered by hand or by the Chapin distribution system, without water stress, have developed "rabbit tracks".

Miscellaneous comments and suggestions

1. Poor humidity control may cause condensation on bracts leading to Botrytis infection. But in several situations, plants examined by a plant pathologist showed no evidence of Botrytis.
2. Appeared in latest cuttings and latest panning.
3. Appeared a day after a heavy rain; some bracts under open roof vent got quite wet. That prompted us to apply cold water to unaffected bracts of 'Annette Hegg Diva' but we could not get the "rabbit tracks" on those plants.
4. Seemed to occur on smaller bracts, not the larger ones.
5. Off and on during the past 6 to 8 years, have worked on all aspects of inducing this problem by varying ecological factors, but simply cannot be consistent. The closest I can come is this high temperature matter (night temperatures above 65°F).

Conclusion

One should not assume that all poinsettia crops will exhibit "rabbit tracks" because many do not. It is questionable whether some cultivars are more susceptible than others. However, the factor (or combination of factors) causing "rabbit tracks" of poinsettia is elusive. The preceding presentation and discussion of observations do not give a definite answer as to why the problem occurs in some poinsettia crops but not in others. Perhaps some clue or observation during the 1980 season will provide the answer.

92 Years of Service to Cornell

Recently the Department of Floriculture and Ornamental Horticulture had an informal reception for Dorothy and Fred Horton on the occasion of their 50th wedding anniversary. Fred, the greenhouse experimentalist so well known to New York growers, retired in 1968 after 41 years of service. At the reception also were Sophia Wilkin, greenhouse technician, who retired in 1973 after 28 years and James Sherwood, field assistant who served 23 years, retiring in 1975. These three gave a total of 92 years in support of departmental research, teaching, and extension benefitting New York State industry. Congratulations!

John G. Seeley