PERIODICITY OF BASIDIOSPORE RELEASE IN *PUCCINIA MALVACEARUM**

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Puccinia malvacearum Mont. is a microcyclic rust, with a world-wide distribution, which attacks representatives of most genera of the family Malvaceae.

During a study of *Mycosphaerella pinodes* in a pea field at the Waite Institute in 1962, abundant basidiospores of *P. malvacearum* appeared on Hirst trap slides exposed near rusted plants of *Malva parviflora* L. in July. Therefore, we have taken the opportunity of re-examining these slides for *P. malvacearum* and one of us (R.J.B.) has made 2-hourly estimates of the airborne concentration of *P. malvacearum* basidiospores throughout the period July 5–August 7, 1962.

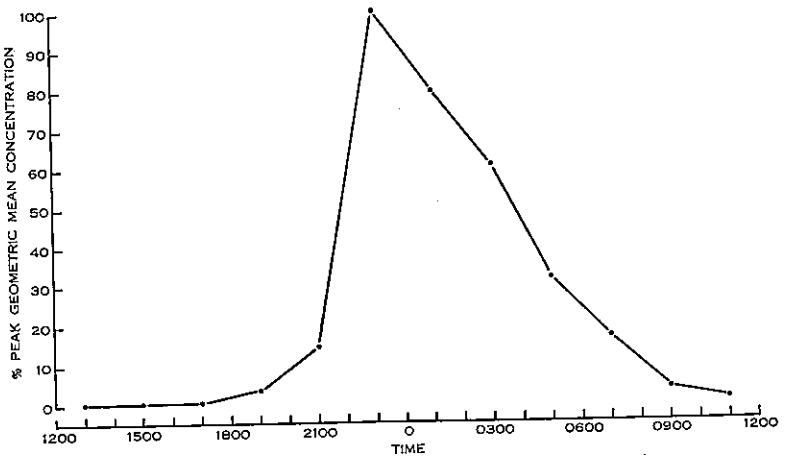

Fig. 1.—Periodicity curve for release of *P. malvacearum* basidiospores.

In Figure 1, the 2-hourly estimates of basidiospore concentration for 21 days are plotted as percentages of the peak geometric mean concentration according to the method of Hirst (1953). A well-defined peak occurred at 2300 hr, and very few basidiospores were detected between 1100 and 1700 hr. Although there were insufficient data for us to correlate spore release with specific weather factors, there was a suggestion that release may only occur during times when the foliage is wet as a result of rain or dew. This, together with a nocturnal periodicity, may have survival value in the case of an organism whose only dispersal spore is a hyaline basidiospore.

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Gregory (1952), Hirst (1953), and Gregory and Hirst (1957), in their studies of the air spora at Rothamsted Experimental Station, England, have shown that the release of basidiospores is predominantly nocturnal. There are, however, few reports of such studies having been applied to individual species of Basidiomycetes, for which reason we submit these data as a contribution to the scant literature of basidiospore dispersal.

References

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