

MICROBIAL CONTROL OF THE GYPSY MOTH IN RECENTLY INFESTED STATES: EXPERIENCES AND EXPECTATIONS

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Experiences and expectations concerning microbial control of the gypsy moth in recently infested states are summarized. Initial experience included mixed results, but expectations remain optimistic. Public sentiment assures continued pressure for improvement in microbial control technology.

In states where the gypsy moth is a recent arrival, experience with microbial control is, of course, limited. But interest and expectations are high. Results of a survey in December, 1983, show that nine of sixteen recently infested states have already used microbials at least once, although only three have ever sustained heavy gypsy moth defoliation (Table 1).

have used Bt where the gypsy moth is a relatively new problem, opinions of its efficacy and reliability range from approbation to deprecation. This divergence corresponds to the diversity of circumstances under which Bt has been applied--from attempts at eradication of incipient infestations to the suppression of outbreak populations.

Perceived environmental impact is a major consideration in gypsy moth suppression programs because of increasing public concern about the hazards of pesticide use. Public perceptions of the materials currently registered for gypsy moth control clearly place microbials in a preferential position, especially in comparison with broad spectrum insecticides. But efficacy, cost and consistency of performance are also important attributes, and the record for microbials in these areas has been erratic. Recent advances in the formulation of Bt, a concomitant reduction in application costs and apparent improvement in performance have maintained optimism about its usefulness; but reservations remain. Concern about efficacy and predictability of performance was mentioned repeatedly in survey responses. Most recently infested states are still dealing with incipient populations,

TABLE I: Gypsy Moth Control In Recently Infested States^{a/}

| State | Has had Heavy Defoliation | Control Materials Applied | | | |
|----------------|---------------------------|---------------------------|------------------|-----------|-----------|
| | | Broad Spectrum | Growth Regulator | Pheromone | Microbial |
| Arkansas | - | + | - | - | - |
| Delaware | + | - | + | - | + |
| Georgia | - | - | - | - | - |
| Illinois | - | + | - | + | + |
| Maryland | + | + | + | - | + |
| Michigan | + | + | + | + | + |
| Minnesota | - | + | - | - | - |
| Missouri | - | - | - | - | - |
| North Carolina | - | + | + | + | + |
| Ohio | - | + | - | - | - |
| South Carolina | - | + | - | + | - |
| Tennessee | - | - | - | - | - |
| Virginia | - | + | + | + | + |
| Washington | - | + | - | + | + |
| West Virginia | - | - | + | - | + |
| Wisconsin | - | + | - | + | + |

^{a/} Responses to a survey in December, 1983; + = yes, - = no.

Most conventional and experimental approaches to gypsy moth control have been used or tested in recently infested states. Microbials, especially *Bacillus thuringiensis* (Bt), are expected to constitute an important component of all future suppression programs. This apparent predilection for Bt reportedly stems more from reaction to public pressure than from absolute preference for its characteristics and performance. Among those who

and the primary objective is gypsy moth mortality, rather than foliage protection or nuisance abatement.

Experience with gypsy moth nucleopolyhedrosis virus (NPV) was reported only from Michigan, Virginia, and Wisconsin. Even in these cases it was used on a very limited scale. In Virginia, a recent test of NPV applied to shade trees from the ground produced

encouraging results. Little consideration has been given to NPV by most states presumably because of its very restricted availability and uncertain performance record.

Microbial control is certain to remain an important issue as the gypsy moth extends its range. Expectations in recently infested states include increased use and improvement of microbial formulations. The prevailing attitude is generally one of optimism.