

AN INDEPTH LOOK AT NEW VIRAL STRAINS FOR USE IN GYPCHEK

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ABSTRACT

Gypchek is a baculovirus-based insecticide produced by the U.S. Forest Service. This biopesticide is species-specific to the gypsy moth (*Lymantria dispar*) and contains as an active ingredient the *Lymantria dispar* nucleopolyhedrovirus, also known as the gypsy moth virus or LdMNPV. Currently, Gypchek is a mixture of many strains of LdMNPV, produced in vivo and refined into a usable product at our facility in Ansonia, CT. From 2003 to 2006, we conducted a number of field experiments designed to determine if a single strain of LdMNPV might be a suitable replacement for the current mixture. Additionally, research has been conducted in Delaware, OH (J. Slavicek²) toward producing the virus in vitro.

Central to our testing methodology was the bugs-in-bags experiment. In these experiments, virus was applied to branches as infected first-instar larvae OR as a sprayed product. Branches with approximately 40 leaves were selected on oak trees in the Cedar Swamp State Wildlife Management Area near Smyrna, DE. These branches were then enclosed in mesh bags with 25 third-instar test larvae, representing bugs that would be eating contaminated foliage in the field. After 1 week in the field, branches were cut off trees, returned to the lab, and test larvae were removed to individual diet cups. They were reared in the cups for 3 weeks and necropsied if they died. See below for numbers of larvae used in each experiment.

