

EVALUATION OF THE ABINGTON ISOLATE OF THE GYPSY MOTH NUCLEAR POLYHEDROSIS VIRUS AGAINST A FORMULATION OF GYPCHEK IN SMALL FIELD PLOTS

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ABSTRACT

The "Abington" isolate of the nuclear polyhedrosis virus (NPV) of the gypsy moth (*Lymantria dispar* L.) was compared with a formulation of Gypchek against a natural gypsy moth population in the Swallow Falls State Forest in Garrett County, MD. The materials were applied from the ground using hydraulic equipment to 1/100 ha (5-8 trees) plots. Thirty-five such plots were spaced at least 100 m apart along roads in forests with moderately high (500-2000 egg masses per ha), healthy (large egg masses) populations of gypsy moths. Each material was applied at three dosages: 2.5×10^{10} , 2.5×10^{11} , and 2.5×10^{12} polyhedral inclusion bodies (PIB's) per ha, each to five replicate blocks, and there were five untreated control blocks. Rhoplex B-60A sticker (Rohm and Haas, Philadelphia, PA) was added (2% vol./vol.). Twenty larvae were taken from each plot one day pretreatment and one, four, and seven days posttreatment. Larvae were returned to the laboratory and held, ten to a cup, until death or pupation. All dead larvae were examined by light microscopy and the cause of death was determined. The presence of PIB's in the cadavers was taken as evidence of death due to NPV.

Mortality from NPV (combined for the three posttreatment dates) indicated that the Abington isolate killed more larvae at all doses than the Gypchek formulation (36%, 38%, and 58% versus 13%, 17%, and 31%, respectively, low to high dose). Mortality from NPV in the control plots was less than 1%. Interpretation of these data is confounded by high levels of larval mortality due to spore-forming and nonspore-forming bacteria that affect the results in unknown ways.