STATUS REPORT: MILE-A-MINUTE WEED

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ABSTRACT

Mile-a-minute weed, *Persicaria perfoliata* (L.) H. Gross, is an invasive annual vine of Asian origin that has developed extensive monocultures, especially in disturbed open areas throughout the Mid-Atlantic region of the United States. A host-specific Asian weevil, *Rhinoncomimus latipes* Korotyaev, was approved in 2004 for release in North America. Weevils were released in three replicated arrays in southeastern Pennsylvania in 2005 and have been intensively monitored since then. Mile-a-minute weed populations decreased and weevil numbers increased at all three sites, but weevil populations were especially large at the site that initially had the most dense mile-a-minute weed population. At least three to four overlapping generations of weevils were produced between May and October each year. Studies of *P. persicaria* plants in field cages with and without weevils confirmed that weevil feeding delays and suppresses seed production and can cause plant mortality in the presence of competing plants.

R. latipes have been reared at the New Jersey Department of Agriculture Beneficial Insects Laboratory in Trenton since 2004. By the end of 2008, more than 137,000 weevils had been reared and released, mostly in New Jersey but also at sites in Delaware, Maryland, Pennsylvania, and West Virginia. The beetles overwintered and established populations at 54 out of 56 (96.4 percent) of sites where they were released between 2004 and 2007. Standardized monitoring of fixed quadrats was conducted for at least 3 years in paired release and control sites in New Jersey (two sites), Delaware (two sites), Maryland (one site), and West Virginia (three sites). However, only one control site in New Jersey remained "weevil free" for 3 years; this site had significantly higher mile-a-minute weed populations compared with its paired release site. All other control sites were colonized by the weevils within 1 or 2 years, indicating excellent dispersal and host-finding ability by *R. latipes*. Monitored release sites in Delaware and New Jersey showed large increases in weevil populations and reductions in mile-a-minute weed populations over time, while monitored quadrats in West Virginia and Maryland sites experienced reductions in mile-a-minute weed populations at all sites without weevil population outbreaks, probably due at least in part to environmental factors.