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## Aphthona spp. flea beetle movement along railroad right-of-ways

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Leafy spurge is often found in long narrow corridors such as railroad right-of-ways where it is difficult to treat. Two experiments were conducted to determine the establishment, population increase, and movement of *Aphthona* species flea beetles on a railroad right-of-way.

*A. nigriscutis* was released on June 28, 1993 in a dense stand of leafy spurge along a 2.5 mile stretch of the Burlington Northern railroad right-of-way near Buffalo, ND. There were five treatments consisting of 100, 200, 300, 400 and 500 adult insects distributed per release point. Release points were 260 feet apart and replicated three times. Stem density and adult flea beetle population were monitored in the spring and summer, respectively, at the release point and at distances 10, 25 and 40 feet in a semi-circle pattern from the release point.

*A. nigriscutis* flea beetles were found in all treatments each year after release and leafy spurge stem density began to decline in 1995. The stem density decreased from an average of 18 stem/ $0.25 \text{ m}^2$  in 1993 to 7 stems/ $0.25 \text{ m}^2$  in 1996. The greatest stem density decrease was 72% when 500 beetles/treatment were released. This decrease occurred 10 feet from the release point for all treatments where beetle populations were the highest. *A.nigriscutis* population in the 300 and 400 insects/release point treatments averaged 8 beetles/m<sup>2</sup> compared to 2 beetles/m<sup>2</sup> for all other treatments.

A similar experiment was established on July 10, 1995 with A. *czwalinae* along the Red River Valley and Western railroad right-of-way near Lisbon, ND. The number of insects used was increased to 500, 1000, 1500 and 2000 adults per treatment. Release points were 150 feet apart and replicated four times. Stem density and adult flea beetle population were monitored in the spring and summer, respectively, at the release point and at distances of 10, 30 and 50 feet in a circular pattern around the release point.

*A. czwalinae* were found at all release sites in 1996. The average stem density in the 2000 insects/release point declined from 21 stems/m<sup>2</sup> to 15 stems/m<sup>2</sup> 1 year following release while stem density in all other treatments was unchanged. Flea beetles will establish on industrial sites such as railroad right-of-ways. The larger the number of insects released the more rapid the leafy spurge stem density declined.