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***Aphthona* spp. flea beetles movement along railroad right-of-ways 1997**

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Poster presentation abstract:

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

A. nigriscutis was released in a dense stand of leafy spurge along a railroad corridor on June 28, 1993. There were five treatments consisting of 100, 200, 300, 400, and 500 adult insects released per treatment, plots were 260 feet apart, and replicated three times along a 2.5 mile stretch of the Burlington Northern railroad right-of-way near Buffalo, ND. 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 stems/0.25m² in 1993 to 5 stems/0.25m² in 1997. The greatest stem density decrease was 72% when 500 beetles/plot were released. The maximum stem density decrease and highest beetle population occurred within 10 feet of the release point regardless of treatment. *A. nigriscutis* populations in the 100 and 400 insects/release treatments averaged 7 beetles/m² compared to 2 beetles/m² for the 500 insects/release treatment.

A similar experiment was established on July 10, 1995 with a mixed population of *A. czwalinae/lacertosa* along the Red River Valley and Western Railroad right-of-way near Lisbon, ND. The number of insects released was increased to 500, 1,000, 1,500, and 2,000 adults per treatment. Release points were 150 feet apart with four replications along a 3.5 mile stretch of the right-of-way. 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, 50, and 70 feet in a circular pattern around the release point.

A. czwalinae/lacertosa were found at all release sites in both 1996 and 1997. The average stem density in the 2,000 insects/release treatment declined by 71% 2 years after

release from 21 stems/m² to 6 stems/m² within 10 feet of the release point. The average stem density declined 48, 60, and 23% within 10 feet of the release point for the 1,500, 1,000, and 500 insect treatments, respectively. *A. czwalinae/lacertosa* were found up to 70 feet from the release point. Flea beetles will establish on industrial sites such as railroad right-of-ways. The larger the release number the more rapid the site stem density declines.