

# EVALUATION OF FERROXX<sup>®</sup> SLUG BAIT FOR CONTROL OF GRAY FIELD SLUGS IN WESTERN OREGON

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## Introduction

Slugs continue to be a pest of economic importance in western Oregon crop production. Several types of materials including metaldehyde and iron phosphate containing baits and sprays are currently used for control. However, damaging slug populations continue to be observed in many fields, especially in no-till seeding and high residue situations.

The new Ferroxx<sup>®</sup> (Neudorff North America) bait contains the active ingredient sodium ferric EDTA. Only recently did slug baits containing this compound become commercially available in the United States. However, EDTA baits have been used in other parts of the world since the mid 1990's. Like other iron materials, EDTA baits need to be consumed by the slug before death can occur, which usually takes place away from the bait or underground. The objective of this study was to evaluate a new commercially available bait for control of slugs in western Oregon.

## Materials and Methods

The study was conducted in a Washington County red clover seed field during October and November, 2011. The field was in its second year of production and had not received tillage for 5 years. At this site, 50 ft. x 50 ft. plots were established in a randomized complete block design and replicated 3 times. Four molluscicide treatments included: 1) untreated control; 2) Deadline MP<sup>®</sup> pellet bait applied at 10 lbs/acre; 3) Ferroxx pellet bait applied at 10 lbs/acre; and 4) Ferroxx pellet bait applied at 20 lbs/acre. Baits were applied with a rotary bait spreader. Treatments were established in an area of the field where heavy slug populations were documented prior to baiting. Baits were applied at dusk when temperatures were between 50-

55°F, soil moisture was present, and wind speed was less than 10 MPH.

Slug populations were evaluated prior to and post-application of test materials. Three 18 in. x 18 in. slug blankets (designed by Liphatec Inc.) were soaked in water and randomly placed and secured in each plot. The study began on October 13. Number of slugs per blanket was recorded 2 days prior to application of all treatments, 2 days post-application, and at 7, 10 and 14 days after treatment application. At each evaluation, slugs were removed and blankets were re-wetted and set out in a new location within the plot.

Data were statistically analyzed using ANOVA and LSD. Slug days were calculated by averaging the number of slugs counted per plot on a given evaluation day by the number of slugs counted in the same plot on the previous evaluation day. This average was then multiplied by the number of days between the two evaluation days.

## Results

Pre-bait evaluations revealed high numbers of gray field slugs (*Deroceras reticulatum*) present at the site. All treated plots significantly reduced slug numbers compared to the control plots ( $P \leq 0.10$ ). There was no significant difference between plots treated with Deadline MP and Ferroxx. Additionally, there was no significant difference between 10 lbs/acre and 20 lbs/acre Ferroxx treatments (Table 1). A sharp increase in slug numbers occurred in the untreated control plots (Figure 1). Weather events, including warm temperatures at night during that period, most likely influenced higher numbers of slugs found at the surface in the untreated plots.

Table 1. Slug days<sup>1</sup> per blanket in a 2 year old no-till red clover field in Washington County, OR.

Treatment	Rate	Slug Days / Blanket <sup>2,3</sup>
Control	0	183.7 a
Deadline MP	10 lbs/acre	96.6 b
Ferroxx	10 lbs/acre	120.7 b
Ferroxx	20 lbs/acre	121.1 b

<sup>1</sup> Slug days were calculated by averaging the number of slugs counted per plot on a given evaluation day by the number of slugs counted in the same plot on the previous evaluation day. This average was then multiplied by the number of days between the two evaluation days.

<sup>2</sup> Each plot contained 3 blankets per plot, totaling 9 blankets.

<sup>3</sup> Means were separated using LSD (0.10) test. Means followed by different letters are significantly different.

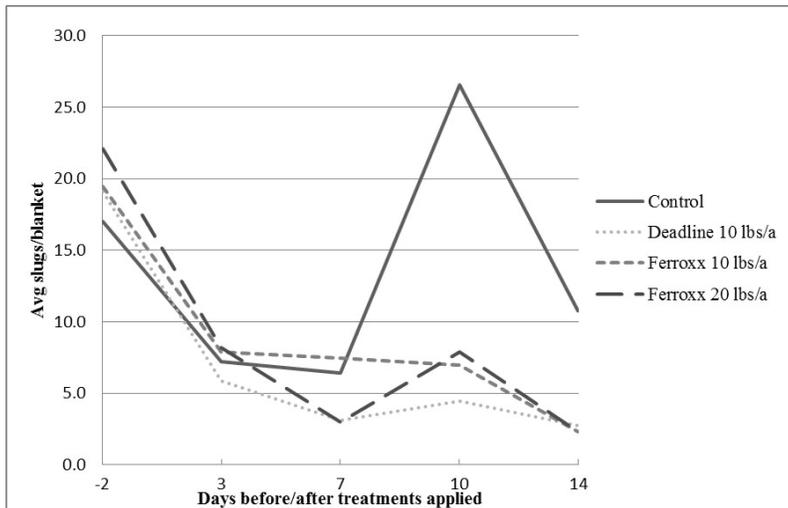


Figure 1. Slug counts (means) from monitoring blankets in Washington County, OR.

This study indicates that economic control of large slug populations continues to be a challenge in western Oregon. Results of this study indicate that Ferroxx, in addition to older metaldehyde and iron phosphate baits, can effectively reduce slug populations. The efficacy of each of these materials is likely to vary between fields, years, population age, and environmental conditions. No attempt was made to quantify differences between mixtures versus single product treatments.

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