

CONTROL OF THE GREY GARDEN SLUG WITH BAITS

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Field Trial:

A field trial was established in a commercial field of perennial ryegrass, near Shedd, Oregon, in February 2000 to evaluate efficacy of metaldehyde, methiocarb, and iron phosphate for control of the gray garden slug (*Deroceras reticulatum*, Mueller). Treatments included Deadline MP[®] (4% metaldehyde) at 10 pounds of product per acre, Mesurol[®] (2% methiocarb) at 5 pounds of product per acre, and Sluggo[®] (1% iron phosphate) at 10 pounds of product per acre. An untreated check was included for comparison. Treatments were arranged in a randomized block experimental design with five replications. Each plot measured 50 x 50 ft. Treatments were applied (broadcast) on 2/9/00 with a hand-held dispenser.

Slug populations were determined using open bait stations; five bait stations within each treatment in each replicate. Number of slugs visiting each bait station was recorded 24 hours after each baiting episode. The number of dead slugs per plot reported for each date in the table below represents the average of five bait stations per plot and the average of five replicates.

Table 1. Effect of baits on slug mortality, Perennial ryegrass, Shedd, OR, 2000.

	Date of evaluation and number of dead slugs per plot										
	2/10	2/11	2/12	2/14	2/15	2/16	2/17	2/19	2/21	2/23	Total*
Deadline MP @ 10 lb./A	3.4	1.6	0.8	1.0	0.5	0.9	0.8	1.2	1.0	4.0	15.2 a**
Mesurol @ 5 lb./A	3.4	2.6	1.2	2.7	1.0	4.2	4.3	4.4	5.1	10.6	39.5 b
Sluggo @ 10 lb./A	2.9	2.8	2.1	5.7	2.4	3.2	3.7	3.4	4.2	9.5	39.1 b
Untreated Check	7.0	8.3	5.2	7.9	3.5	6.7	7.7	6.7	7.0	14.3	74.3 c

* Total mean numbers of dead slugs counted per bait station during evaluation period (2/10/00 through 2/23/00). Treatments with fewest slugs/bait station are the best. Few slugs are a reflection of the reduced number of slugs per plot as a result of the broadcast bait treatments. Compared to UTC.

** Means followed by the same letter within a column do not differ significantly at $P \leq 0.05$

On any given day, there were no statistically significant differences in slug mortality between treatments. However, differences between treatments occurred when total slug mortality was evaluated at the end of the trial period (Table 1). All bait treatments provided better control than the untreated check. Deadline MP[®] provided the best control while Mesurol[®] and Sluggo[®] were comparable to each other.

Laboratory Trial:

A laboratory trial was conducted at Oregon State University to observe the responses of the gray garden slug, *Deroceras reticulatum*, Mueller, to two commercial molluscidal baits and an herbicide.

Cages consisted of plastic buckets (2.5-gallon capacity, 10-inch diameter) that were fitted with screened lids. Moist paper towels placed on the bottom of each cage provided high relative humidity. In addition, a small plastic card, shaped into a tent, was put in each cage to provide shelter. Cages were kept indoors at ambient temperatures. Treatments were arranged in a completely randomized experimental design with five replicates.

Adult and large juvenile slugs were collected from a commercial field of perennial ryegrass and confined with lettuce for 48 hours. Food was then withheld for 48 hours prior to the onset of the experiment. Each cage contained 10 live slugs at the time treatments were introduced. Baits were applied at 1.0 gram of product per cage on December 13, 1999 and remained in the cages until termination of the trial on December 22, 1999. Lettuce was added to each cage with the treatments to give slugs a “choice” between the slug bait and the lettuce. Bait treatments consisted of 1% iron phosphate (Sluggo®) and 4% metaldehyde (Deadline MP®). The herbicide Prowl 3.3EC® (pendimethalin) was sprayed onto moist soil in the cages on December 13, 1999, at a concentration equivalent to the field rate of six pints of Prowl 3.3EC per 20 gallons of water. Slugs (and lettuce) were introduced to the cages approximately 30 minutes after the Prowl application. An untreated control (no bait but including lettuce) was included in the trial for comparison. Fresh lettuce was added to all cages throughout the trial period, as needed.

Efficacy of the treatments was evaluated by recording the number of dead slugs at various intervals over a 9-day period; dead slugs were removed from each cage after each evaluation.

Table 2. Effects of pesticides on slug mortality, caged study, Corvallis, OR, 1999.

	% Slug Mortality*				
	1 DAT**	2 DAT	3 DAT	6 DAT	9 DAT
Deadline MP	0	6	6 a	10 a	28 b ***
Sluggo	0	2	6 a	86 c	86 d
Prowl 3.3EC	16	24	32 b	42 b	50 c
Untreated Check	0	0	0 a	0 a	0 a

* Cumulative

** DAT = days after treatment

*** Means followed by the same letter within a column do not differ significantly at $P \leq 0.05$

Immediately after introducing slugs to cages with Prowl, the slugs began to secrete mucus with 16% of the slug population dead within 24 hours. Feeding ceased in this treatment. The iron phosphate bait, Sluggo®, became swollen and sticky within hours after being added to the cages and remained in that state for the entire evaluation period. Although only 28% mortality occurred in the Deadline MP treatments, slug feeding also essentially ceased as did slug movement by 2 DAT. Slugs in the untreated cages remained healthy and active.