Poster Presentation

Evaluation of Potential Insect Baits for Red-Winged Blackbirds

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INTRODUCTION

When using DRC-1339 Concentrate, applicators have sometimes found that blackbirds will not feed on standard baits, such as poultry pellets and cracked corn. Although the search to discover more attractive baits has generally focused on finding alternate grain products, fruits, and occasionally processed foods, a first-rate candidate may be insects. We heard of a unique baiting situation involving European starlings (*Sturnus vulgaris*), in which dead crickets were used quite effectively.

European starlings are more omnivorous than red-winged blackbirds (*Agelaius phoeniceus*); however, during the reproductive period red-winged blackbirds will feed extensively on insects. To our knowledge, no feeding tests using red-winged blackbirds have been conducted that measure consumption rates among various commercially available insects.

METHODS

The experiment was conducted during summer (June and July) and fall (September and October) 2005 in Bismarck, ND. Each feeding trial used a group of 5 male red-winged blackbirds given a selection of waxworms (*Galleria mellonella* larvae), mealworms (*Tenebrio molitor* larvae), and crickets (*Acheta domesticus*). The foods were offered separately by type in 3 aluminum trays with each tray (41.9-cm diameter × 9.1-cm depth) holding 100 insects. All foods were kept at least 24 h in a freezer and completely thawed prior to the tests. Waxworms were replaced with mealworms of another size class in the fall trials.

We decoy-trapped wild birds and held them in captivity for a minimum of 14 days. During this time, free access to water and grain-based maintenance food was allowed. After the acclimation period, 5 birds were randomly selected from the holding pens and placed in a testing cage (2.4 × 2.4 × 2.4 m).

For 4 consecutive days, the maintenance food was removed from the cage at 0730 h. The 3 food types were placed 1 h later and left on the floor of the cage for 3 h, after which the birds' maintenance food was returned. The remaining quantities of test foods were counted and then weighed on a top-loading balance. To determine mass changes of foods due to changing daily environmental conditions, aluminum trays with samples of the foods were placed nearby. We used descriptive statistics (mean and SE) to illustrate differences in feeding rates among food types.

RESULTS & DISCUSSION

During preliminary trials in June, we discovered that a group of 5 red-winged blackbirds was capable of eating 50 mealworms and 50 crickets during a 3-h feeding period; waxworms were mostly avoided. To ensure that at least some of the food items would remain after the test, we used 100 of each food item in the formal experiments.

During the summer phase of the feeding experiment substantially more crickets were eaten than small-sized mealworms and waxworms (Figures 1, 2). We substituted large-sized mealworms in place of waxworms during the fall trials. In these trials, large mealworms seemed to be the most attractive food item by far (Figures 3, 4). Over both study periods the birds tended to eat comparable numbers of crickets.

The results indicated that large-sized mealworms were the best bait for red-winged blackbirds during fall, whereas crickets were favored over small-sized mealworms and waxworms in summer. Protein contents among the food items were similar (~20%), thus we speculate that choice was based to some extent on the quantity of fat available among the different foods. The fat content of mealworms (13%) is over twice that of crickets (6%). Feeding-rate efficiency may have caused the birds to select the large-sized mealworms over the smaller size class.

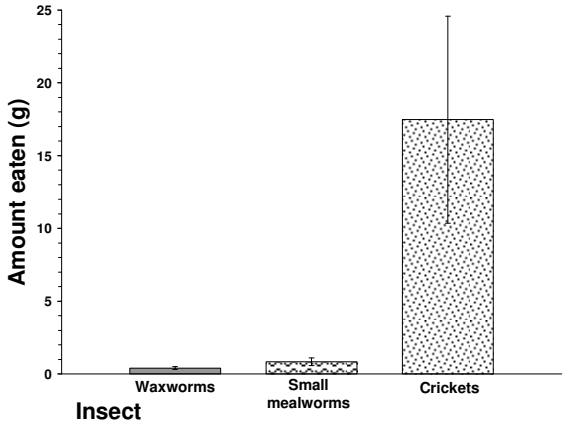

Figure 1. Amount (g) of each insect eaten by 5 red-winged blackbirds during 3-h trials in summer.

From the perspective of acquiring insect baits in volumes great enough for a large-scale baiting operation, mealworms seem to be substantially less expensive than crickets and perhaps more readily available in larger quantities.

We plan to conduct similar feeding trials with European starlings in 2006.

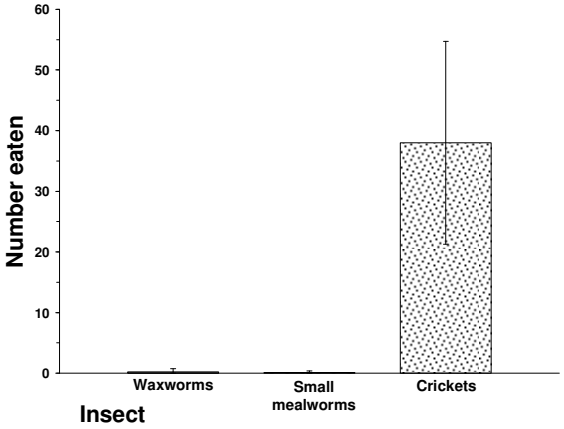

Figure 2. Number of each insect eaten by 5 red-winged blackbirds during 3-h trials in summer.

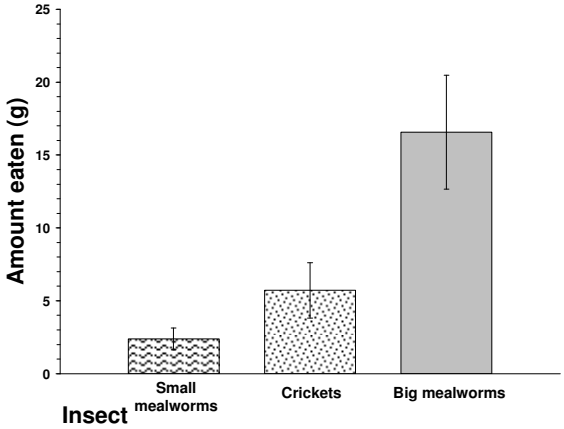

Figure 3. Amount (g) of each insect eaten by 5 red-winged blackbirds during 3-h trials in fall.

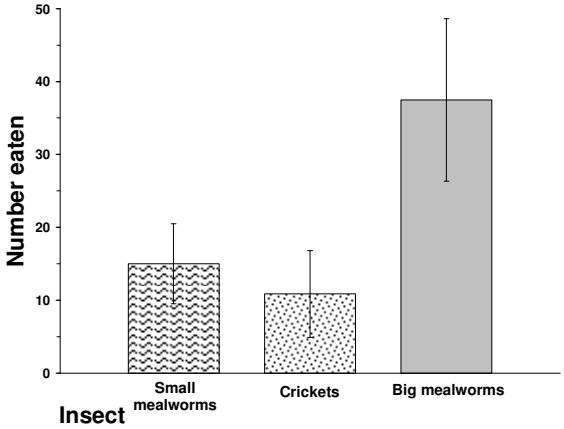

Figure 4. Number of each insect eaten by 5 red-winged blackbirds during 3-h trials in fall.