Insects in IBL-4 Pine Weevil Traps

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Abstract

Pipe traps (IBL-4) are used in Polish coniferous plantations to monitor and control the pine weevil (*Hylobius abietis* L.). This study was conducted in a one-year old pine plantation established on a reforested clear-cut area in order to evaluate the impact of these traps on non-target insects. Evaluation of the catches indicated that species of *Carabidae* were the most frequently captured group of non-target insects.

Key Words: *Hylobius abietis*, IBL-4 traps, non-target insects

Weevils of the genus *Hylobius* (*Coleoptera: Curculionidae*) are particularly important pests in European coniferous plantations. In Poland, the pine weevil (*Hylobius abietis* L.) has become the most harmful pest of 1-3-year old coniferous crops. To control the pine weevil, pipe traps IBL-4 baited with a mixture of a-pinene and ethanol (Hylodor ^{R}) were placed into coniferous plantations in order to monitor and control pine weevil populations. Hylodor ^{R}-baited traps often capture non-target insects in addition to pine weevils. This study was conducted to evaluate the species and numbers of non-target insects that are captured in pine weevil IBL-4 traps.

Materials and Methods

The observations were carried out in 1998 on one-year old plantation (1.5 ha) of Scots pine (*Pinus silvestris* L.) and Norway spruce (*Picea abies* L.) in the Celestynow Forest District (Central Poland). The plantation was established on a clear-cut area that resulted from harvesting a 100 year old Scots pine stand. In April, 15 IBL-4 traps were installed linearly (20 m apart) in the middle of the plantation. Captured insects were collected biweekly during the period April-September and identified as to species and family.

Results

IBL-4 traps caught in total 2839 the pine weevils, averaging from 1.18 ± 1.03 to 96.18 ± 15.83 beetles/trap and 284 non-target insects of 20 species that belonged to nine families (Table 1). The average number of non-target insects caught per trap was between 4 ± 1.67 and 8.82 ± 2.25 individuals.

The highest number of insects captured belonged to the family *Carabidae* (12 species from genera: *Carabus, Pterostichus* and *Harpalus*). Other individual species captured were from the families *Anobiidae, Byrrhidae, Cerambycidae, Cicindelidae, Dermestidae, Elateridae, Geotrupidae, Gryllidae, Lucanidae, Nitidulidae, Silphidae* and *Staphilinidae.*

Based on results obtained it appears that the most abundant group of non-target insects captured in IBL-4 traps resulted from their accidental walking into the traps or due to their search for shelter. This group includes species from the *Carabidae* and species from the *Anobiidae, Byrrhidae, Elateridae, Gryllidae, Lucanidae* and *Staphylinida*e. Representatives from the *Dermestidae* and *Silphidae* feeding on dead insects were probably attracted to the traps by the odor from decomposing insects inside the traps.

Table 1.—Number of non-target insects in IBL-4 traps

Species	Number of insects
Anobiidae:	
Anobium punctatum	1
Byrrhidae:	
Byrrhus pilula	1
Carabidae:	
Agonum sexpunctatum	3
Carabus arcensis	166
Carabus hortensis	22
Carabus violaceus	1
Chlenius nitidulus	1
Harpalus latus	1
Harpalus rufipes	15
Pterostichus angustatus	10
Pterostichus caerulescens	2
Pterostichus niger	20
Pterostichus oblongopunctatus	8
Pterostichus rufipes	2
Dermestidae:	
Dermestes laniarius	2
Elateridae:	
Melanotus erythropus	1
Gryllidae:	
Gryllus campestris	18
Lucanidae:	
Platycerus caprea	1
Silphidae:	
Necrophorus vespillo	1
Staphylinidae:	
Staphylinus erythropterus	8