MAJOR PESTS IN CRANBERRY PLANTATIONS IN LATVIA

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ABSTRACT

Species composition of harmful and potentially harmful insects and diseases of cranberry was studied in Latvia. The spread and economic importance of these organisms in cranberry plantations was evaluated.

Key words: cranberry, pests, pathogens

INTRODUCTION

In Latvia, commercial cultivation of the American large-fruited cranberry began in the 1990s. Climatic conditions are good and there are enough cultivated peat bogs for cranberry growing. The total area planted with cranberries reached 80 ha in 2004 and is increasing by 8 to 12 hectares a year. In all of the larger plantations, sprinkler irrigation protects against frost and heat, but flooding is still not carried out. Insect pests and pathogens were introduced together with plant material, usually imported from the USA.

For two years, the species composition of insect pests was systematically studied. The spread and development of the most harmful insects was regularly observed in the trial area.

No insecticide is currently approved for use in cranberry cultivation in Latvia.

Further studies are underway on the harmful and potentially harmful cranberry pests, species composition, spread, development, economic importance and possible control measures.

MATERIAL AND METHODS

- Trial site: regular observations were taken two weeks apart in the basic trial area Ltd "Lienama-Aluksne" in the Aluksne region of Northeastern Latvia (157 km from Riga).

- Cranberry cultivar: ‘Stevens’.
- Soil: peat bog.
- Plot size: 30 m^2, four replicates.
- Systematic studies of the species composition of insect pests were carried out.
- Counting of insects in 100 entomological net cuts (25 per plot).
- Analyzing the upper part of 20 plants per plot (uprights and fruits).
- The seven largest cranberry plantations were inspected once during the vegetative season.

Survey in Latvia

Basic trial area

The largest cranberry plantations inspected

Cranberry tipworm, *Dasineura vacinii*

RESULTS

In the eastern part of Latvia, including the trial area, the most widespread cranberry pest was the cranberry tipworm, *Dasineura vacinii* (*Diptera, Cecidomyidae*) (Gorlenko and Buga, 1996; Caruso and Ramsdell, 1995). From 62.5 to 68.9 uprights were damaged by this pest per 1 m^2 (Fig. 1).

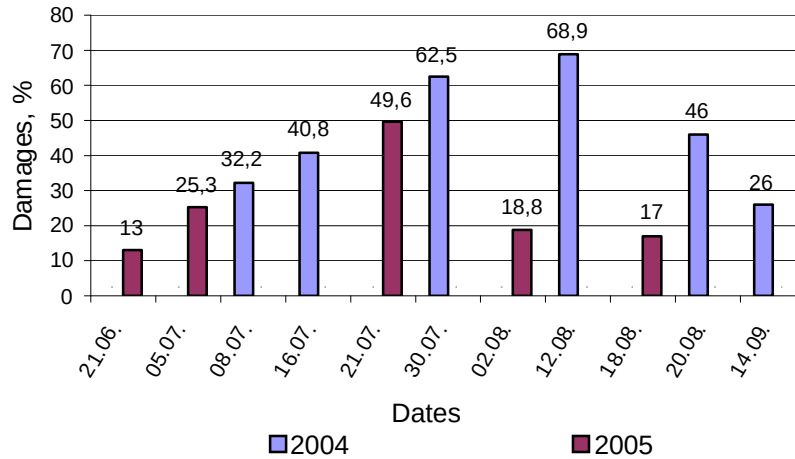

Figure 1. Cranberry tipworm *Dasineura vacinii* damages [%]

The cranberry tipworm was the main cause of yield loss at the trial farm (6.2 t ha^{-1} in 2002, 4.4 t ha^{-1} in 2003, and 1.75 t ha^{-1} in 2004).

In the western part of Latvia, which lays in the maritime zone, the chief insect pest was the vaporer moth *Orgyia antiqua* (L.) (*Lepidoptera, Lymantriidae*) (Gorlenko and Buga, 1996; Kuznetzov, 1995). Nine to twenty worms were detected per 1 m^2. At the farm "Piesaule" in the Talsu region, yield decreased from 8.0 t ha^{-1} in 2003 to 4.0 t ha^{-1} in 2004.

Other pests observed were:

- Blackheaded fireworm: *Rhopobota naevana* (Hübn.) (*Lepidoptera, Tortricidae*) (Gorlenko and Buga, 1996; Caruso and Ramsdell, 1995; Kuznetzov, 1995).
- Sparganothis fruitworm: *Sparganothis sulfureana* (Cl.) (*Lepidoptera, Tortricidae)* (Kuznetzov, 1995).
- Willow scale: *Chionaspis salicis* (L.) (*Homoptera, Diaspididae*) (Gorlenko and Buga, 1996).
- Willow lochmaea: *Lochmaea capreae* (L.) (*Coleoptera, Chrysomelidae*)*;*
- Pea moth, *Mamestra pisi* (= *Ceramica p.*, *Melanchra p.*) (L.) (*Lepidoptera, Noctuidae*) (Gorlenko and Buga, 1996; Kuznetzov, 1995).

DISCUSSION

The most destructive cranberry pest Latvia is currently ***Dasineura vacinii.***

No insecticide is currently approved for use in cranberry cultivation in Latvia. In 2005, an efficacy trial was begun with:

- Actara 25% WG, a.i. thiamethoxam 250 g l^{-1};
- Fastac 10% EC, a.i. alfa-cypermethrin; and
- Calipso 480 OD, a.i. thiachlopride.

Further studies are underway on the harmful and potentially harmful cranberry pests, species composition, spread, development, economic importance and possible control measures.

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GŁÓWNE SZKODNIKI I CHOROBY NA PLANTACJACH ŻURAWINY NA ŁOTWIE

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STRESZCZENIE

Na Łotwie komercyjną uprawę żurawiny rozpoczęto w latach 90. ubiegłego stulecia. W roku 2004 uprawiano ją na powierzchni 80 hektarów. W publikacji prezentowane są wyniki dwuletnich badań nad strukturą gatunkową szkodników oraz patogenów atakujących plantacje żurawiny w tym kraju. Szkodniki i patogeny były zawleczone z materiałem roślinnym importowanym z USA. Obecnie w uprawach żurawiny na Łotwie nie stosuje się żadnych insektycydów.

Słowa kluczowe: żurawina, szkodniki, patogeny