

Anthocoris-System

***Anthocoris nemoralis*: predatory insect of the pear psylla!**

PEAR PSYLLA (*Psylla pyri*)

Twigs on which a sticky fluid drips and turns black, staining pears with honeydew is a nightmare for a lot of pear growers. Honeydew is caused by a little insect, the pear psylla, *Psylla pyri*, which is closely related to aphids. In the past, it was rarely seen and it was systematically removed after each treatment. However, during the eighties it became resistant to a variety of sprays. This pest becomes active very early in the year. Before and during the bloom, young leaves and flowers become infested. Immediate damage is minimal, but the honeydew stains the fruit and the branches black. The solution is not to spray more, but less and to spray selectively. The other solution is *Anthocoris nemoralis*, a predatory bug that mainly eats pear psylla.

ANTHOCORIS NEMORALIS

This small bug hibernates in hedges and leaf litter. During springtime they become active. The first meal is pollen grains and small insects such as psyllae, aphids, etc. ... After the flowers' bloom however, *Anthocoris* is attracted by the honeydew secreted by the first summer generation of pear psylla. Naturally occurring *Anthocoris* will migrate to areas with pear psylla. *Anthocoris* immediately begin to eat and the females lay their eggs on the underside of leaves. The presence of eggs is visible to the fruit growers because of the red discolouration on the leaf around the egg. The larvae immediately reveal themselves to be as voracious as the adults and feed on eggs and young larvae of the pear psylla.

A typical orchard can sometimes get through a season without any noticeable problems caused by pear psylla.

However, there are some years when most of the growers still have a lot of crop damage. The reason for that is not always very obvious. In some years, the natural population of *Anthocoris* is very low in early summer. This could be due to severe frost when the *Anthocoris* nymphs have emerged or by a lack of food in the spring. It is also possible that a lot of rain washes away a number of nymphs on the trees and shrubs. Geographical factors can influence the poor natural control of pear psylla by *Anthocoris*. Large orchards of multiple hectares are too large for naturally occurring *Anthocoris* to reach the centre. In the centre of these orchards, pear psylla populations can quickly increase without the presence of *Anthocoris*. Isolated orchards are often surrounded by crops which are not suitable for use as refuge by *Anthocoris*. Small orchards located in the centre

of communities exist with micro-climates which allows early development of the pear psylla.

ARTIFICIAL INTRODUCTION

Biobest has succeeded in mass rearing these useful predatory bugs as a solution to these problem orchards. It is possible to obtain a natural balance between the psylla and the predatory bug by introducing the adult *Anthocoris* early in the season. This early release allows the bugs to acclimatize to the lower temperatures and heavier rain of the spring season.

Repetitive introductions of *Anthocoris* in parcels which are regularly infested by pear psylla can help prevent early crop damage.

Anthocoris is delivered in plastic tubes which contain at least 200 adult predatory bugs.

In most cases, 1000 adult predatory bugs per ha are enough. In problem orchards or when the naturally occurring population is low, 1500 adults per ha are advisable.

The first introduction of a limited number of *Anthocoris* can take place right before the bloom of the pears, when the first nymphs of the pear psylla are developing. A second, larger introduction can take place at the beginning of May when there is a little chance of frost.

It is advisable to choose multiple introduction sites per ha, at least 5, that have pear psylla present for the introduction of the predatory bugs.

Introduce the *Anthocoris* by gently pouring a thin layer of bugs into a Delta trap, without the glue bottom. Another method of introduction is to pour the predatory bugs on a clean spot under the trees, weather permitting. The adult bugs will fly away almost immediately to hunt for their prey.

WARNING

As long as adults and/or eggs of the predatory bugs are present, it is still possible to intervene chemically with amitraz. Once young larvae have come out, amitraz cannot be applied anymore because the nymphs are moderately sensitive to this product. Insect growth regulators such as chitin-synthesis inhibitor, diflubenzuron, flucycloxon and flufenoxuron are harmless to the adult insects, but can have a toxic effect on larvae. Entirely excluded are synthetic pyrethroids, organic phosphates and endosulphan. Pyrethroids have a residual effect on *Anthocoris*, from several weeks to months.