LIFE HISTORY AND LABORATORY REARING OF *Leptoglossus occidentalis*

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INTRODUCTION

The conifer seed bug, *Leptoglossus occidentalis* Heidemann (Heteroptera: Coreidae), was first found in northern Italy in 1999 (Tescari, 2001).

This species rapidly spread all over Italy,and it was found also in Switrzerland (Wittenberg, 2005), Slovenja (Gogala, 2003) and Croatia (Tescari, 2004).

This insect is native of Northern and Central America, where it completes one (Jacobs and Emmen, 1995) to three generations Cibriàn-Tovar *et al*., 1986).

Adults and nymphs of this species feed on cones of different plant of the Pinaceae family causing damage to the seeds. One seed bug per tree early in the season will result in an expected seed loss of more than 300 seeds (Bates and Borden, 2005).

OBJECTIVES

- Study of the developmental rate of *Leptoglossus occidentalis* at three different temperatures to calculate Day Degrees needed for its development.
- Study of life history of *Leptoglossus occidentalis* in Friuli Venezia Giulia (North-eastern Italy) to test Day Degree predictions.

MATERIALS and METHODS

Rearing in controlled conditions to study the developmental rate

Insects were reared, from lied egg, in a climatic chamber with 16:8 h (light:dark) photoperiod and 70% RH.

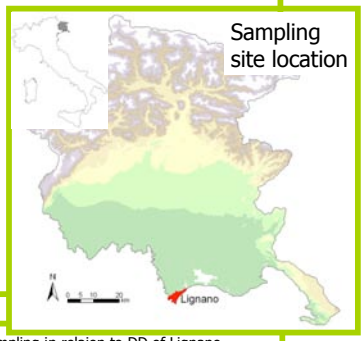
The developmental time was studied at three different temperatures: 18°C, 24°C and 30°C. Two to five replications were carried out for each temperature with at least 25 eggs each replication.

Field sampling to study life history

Sampling sites: two sites in Lignano (UD) - the first within 200 meters from the sea shore and - the second in a park of the town centre.

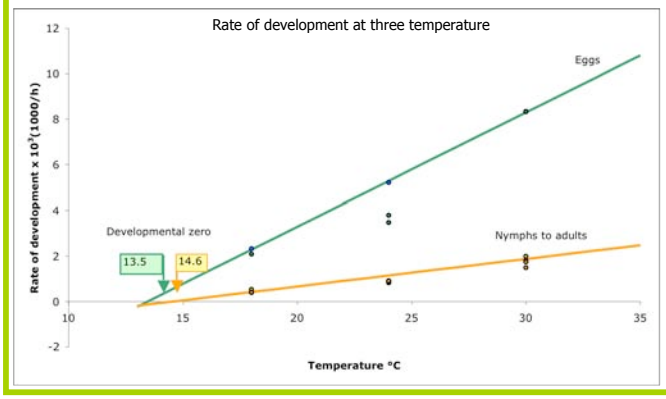
Sampling period: from May to October every two weeks.

Sampling method: in each site a total of 30 plants (buds, cones and needles) were observed for five minutes per tree, collecting all the specimens of *Leptoglossus occidentalis* which can be found on the lower branches (max height 2 m). For each specimen collected its life instar was determined and all the insects were counted.

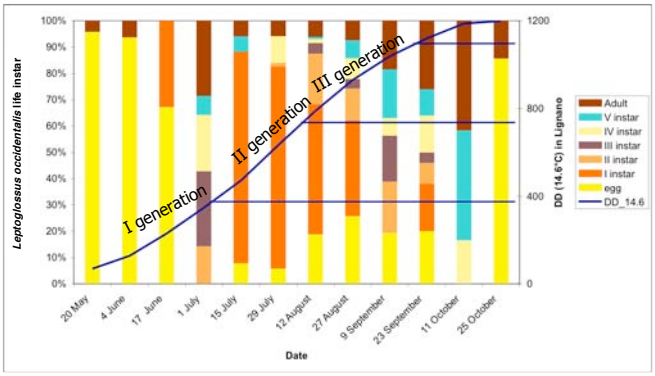


RESULTS and CONCLUSIONS

Eggs hatch after a minimum of 81 Day Degrees (range 81-126 DD).
From 1st instar nymph to adult is necessary a minimum of 287 Day Degrees (range 287-460 DD).



Percentage of different instars collected during field sampling in relaion to DD of Lignano



Three generations were observed and three generations were predicted by the Day Degrees method.

Day Degrees can be a useful method to predict the number of generations in different climatic conditions even if further researches are necessary to confirm these data.

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