SESSION II
PHYSIOLOGY, ETHOLOGY AND INTERACTIONS

Investigation on seasonal movements of the woolly aphid in the aerial part of the plant and its parasitoid *Aphelinus mali*

Serena Giorgia Chiesa, Cristina Tomasi, Mario Baldessari, Gino Angeli

Edmund Mach Foundation, Italy

Eriosoma lanigerum represents one of species of aphid complex threatening the apple cultivation and it is considered one of the apple key pests. As a result of aphid trophic action the tree suffers from altered growing of the tissues, desiccation of the branches and roots, damages on wood and the honeydew drips onto fruit. The woolly aphid management is based on pre and post-bloom insecticide treatments and resistant rootstock available on the market, howewer it is the contribution of the biological control by its specific parasitoid *Aphelinus mali* that is generally decisive for solve summer infestations.
The woolly aphid overwinters as nymph on the roots under the soil and, also due to the higher frequency of mild winter events, in the trunk cracks and branches in the aerial part of plants.
Its parasitoid mainly overwinters in the stage of diapausing mature larva, it has a high mortality induced by low winter temperatures; from the mummies present in the field at the end of summer, only a small percentage can generate live individuals that will emerge in early spring and can thus be able to begin the parasitation phase.
Populations of *E. lanigerum* vary over the years depending on biotic and abiotic factors but in recent years there has been a significant increase in populations in all apple orchards in Northern Italy.
In order to understanding how climatic factors can influence populations of *E. lanigerum* and its movements on the aerial part of plant, a monitoring was carried out in apple orchards in the province of Trento. This work shows a study on movements dynamics in the aerial part of plant of E. lanigerum and the differences from what was recorded in the past at the same latitudes.
The movements of the aphid were monitored from spring to winter with adhesive trap bands in several points of the trunk and on branches identified as overwintering points. It was observed that in the dynamics highlighted, as reported in the bibliography, are prevailing upward movements in spring and downward movements in autumn. Also due to the mild climate, the stopping of movements in the upper part of the canopy was noted late in the season (11/23/2022) while the migratory activity detected in the area closest to rootstoks continued until late winter.
Moreover, the monitoring of *A. mali* was supported by means of yellow chromotropic traps and adhesive bands placed on trunks and branches.

KEY WORDS: *Eriosoma lanigerum*, migration.

POSTER