

## PARASITES AND PARASITOIDS OF PAPER WASPS

### Summary

Paper wasps are hosts of social parasites, non-social parasites and of parasitoids from different families and orders. In Europe there are only three obligate social parasites belonging to genre *Polistes* and their hosts are another free-living species of paper wasps. There have been also reported cases of facultative social parasites, for example *Polistes nimphus* and its host *P. dominula*. General strategy of social parasites in this case is usurpation a colony of another species or sometimes of the same species (in the second case it is facultative parasitism only).

On the other hand, there is relatively large group of nonsocial parasites and parasitoids belonging to Lepidoptera, Strepsiptera and Hymenoptera. Strepsiptera are well known from South Europe, where they parasite on *Polistes dominulus* and *P. gallicus*, Lepidoptera from North America and Hymenoptera were recorded in North America, Europe and Asia. The overview shows that in specific circumstances the extent of infestation can be very high and leading to significant losses of brood, workers and reproductive generation..