

Side-Effect Testing on beneficial arthropods

Biobest Green Lab

Specialized research facility for side-effect and compatibility testing of chemical and biological control agents





Green Lab side effect research on beneficial arthropods is mainly focusing on greenhouse semi-field and field testing. In a first step, products are screened on their compatibility with beneficial arthropods according to small scale greenhouse semi-field trials. Due to an optimal spraying technique, severe conditions are created for the beneficial arthropod tested. The outcome of such trials will indicate whether a compound is completely compatible or not.

When a compound turns out to be toxic, moderately toxic or slightly toxic, further steps towards greenhouse field trials might mitigate the impact of the compound on the beneficial arthropod tested. As such commercial conditions are mimicked whereby established populations of the target beneficial are created.

Information about the mode of action, the persistence, the efficacy, ... of the test compound is crucial to create a protocol that contributes to the intended results. Protocols are compiled and discussed in cooperation with the outsourcing company.



Characteristics of the different types of trials:

Greenhouse Semi Field Trials

- Small plants that are easy to manipulate are used and placed individually in the greenhouse
- The most suitable plant type for the target beneficial will be chosen
- All plant parts are treated in an optimal way (persistence tests are also possible)
- The introduction of the target beneficial will take place before or directly after the application
- The most sensitive stage of the target beneficial is tested
- Alternative food sources will be used if possible
- Test compounds are compared with a water treated control object, a toxic and a non-toxic reference
- A single and destructive assessment will be performed

Greenhouse Field Trials

- Bigger plants are used and the number of plants per plot is higher
- Because these plants are side by side, a microclimate will be maintained
- Commercial crop types, that suit for the target beneficial, will be used
- Introduction of the target beneficial according to commercial practice
- Creation of homogeneous, established populations that represent all stages of the target beneficial
- Alternative food sources will be used if possible
- Treatments according to commercial practice (persistence tests are also possible)
- Test compounds are compared with a water treated control object, a toxic and a non-toxic reference
- Assessments via sampling, multiple assessments possible