



Original thinking... applied

Ladybird Beetle (*Coccinella septempunctata*)

For plant protection product registration data are required on non-target plant dwelling organisms, under EU Regulation (EC) No 1107/2009.

The ladybird beetle (*Coccinella septempunctata*) was chosen as a representative of non-target leaf dwelling insects due to its abundance in agricultural landscapes, its role as a predator of aphids, and its ease of handling.

LABORATORY TESTS

Fera offers standard laboratory tests with ladybird beetles following IOBC/WPRS guidelines.

How we carry out the tests

The ladybird beetle larvae are exposed to the test compound on treated glass surfaces or treated leaves (extended test) and mortality assessments are undertaken daily until adult ecdysis. In the case of control and test item treatment groups, where the corrected mortality is less than 50%, the reproduction performance of the adult ladybird beetles (for example the numbers of eggs laid and their viability as determined by larval hatch) is assessed over a two-week period.

Endpoints

Endpoints for the test are:

- Larval and pupal mortality
- LR50 (lethal rate producing 50% mortality), if possible
- Reproductive capacity of survived ladybird beetles
- ER₅₀ (dose rate causing 50% reduction in reproductive rate), and/or a (NOER) no observable effect rate

ADDITIONAL TESTING

Fera's studies are GLP-compliant and can be adapted to provide bespoke tests that meet your specific data requirements. Fera also offers in-house dose verification or residue analysis to validated methods.

Aged-residue tests

Fera can also carry out aged-residue tests to test the persistence of your products in a realistic environment. Whole plants are sprayed with the test substance to mimic field application. Residual toxicity is tested at set intervals to assess the time of ageing needed for the residues to cause effects below an acceptable threshold within the environment.

Test guidelines

Schmuck R, Candolfi M.P., Kleiner R., Mead-Briggs M., Moll M, Kemmeter F., Jans, D., Waltersdorfer A. & Wilhelmy H. 2000: A laboratory test system for assessing effects of plant protection products on the plant dwelling insect *Coccinella septempunctata* L. (Coleoptera: Coccinellidae). In M.P. Candolfi, S. Blümel, R. Forster, F.M. Bakker, C. Grimm, S.A. Hassan, U. Heimbach, M.A. Mead-Briggs, B. Reber, R. Schmuck and H. Vogt (eds.) 2000: Guidelines to evaluate side-effects of plant protection products to non-target arthropods. IOBC/WPRS.

MORE ABOUT FERA

Fera is based at the National Agri-Food Innovation Campus near York, UK. We have a long track record of developing and providing ecotoxicology services to support environmental risk assessments for companies developing plant-protection products.

Our scientists combine extensive expertise with Fera's advanced resources and GLP-compliant laboratories, to assess the impact of plant protection products on terrestrial non-target arthropods.

We'll work in partnership with you to devise and conduct the appropriate tests to provide the essential data you need for robust environmental risk assessments.

GET IN TOUCH

For more information and to book a test, call Fera on **+44 (0)300 100 0321**, email **sales@fera.co.uk** or visit **www.fera.co.uk/terrestrial-ecotoxicology**

