ECHA
EUROPEAN CHEMICALS AGENCY

Terrestrial

OECD 226: PREDATORY MITE (*HYPOASPIS (GEOLAELAPS) ACULEIFER*) REPRODUCTION TEST IN SOIL

TITLE OF THE TEST GUIDELINES (YEAR OF APPROVAL)

OECD 226: Predatory mite (*Hypoaspis (Geolaelaps) aculeifer*) reproduction test in soil, 2008

Keywords: effects on terrestrial organisms; reproduction test; predatory mite

LINK TO THE OECD SITE

- http://www.oecd-ilibrary.org/environment/test-no-226-predatory-mite-hypoaspis-geolaelaps-aculeifer-reproduction-test-in-soil_9789264067455-en

WHICH OF THE REACH INFORMATION REQUIREMENTS MAY BE MET WITH THE TEST(S)

Related to Annex X Point 9.4.4. This test should be used only as a complement to other long-term toxicity tests on soil invertebrates, e.g., for higher tier assessment based on Species Sensitivity Distributions, or in a weight of evidence approach.

STATUS OF THE VALIDATION BY EURL ECVAM

Not relevant, since this is an *in vivo* non-vertebrate test.

HOW TO USE THIS METHOD

This predator-prey test is mentioned in the Guidance on information requirements and chemical safety assessment (IR&CSA), Chapter R.7c: Endpoint specific guidance: Krogh & Axelson (1998). Test on the predatory mite *Hypoaspis Aculieifer* preying on the Collembolan Folsomia Fimetaria. In "Handbook of Soil Invertebrates" (Eds. Hans Løkke & Cornelis A.M. Van Gestel). John Wiley & Sons: Chichester, UK.

THE SPECIFIC SCOPE OF THE TG, E.G. LIMITATION ON CHEMICAL CATEGORIES COVERED, IF ANY, AND LIMITATION ON CLASSIFICATION AND LABELLING

This test guideline assesses the effects of chemical substances in soil on the reproductive output of the soil mite species *Hypoaspis (Geolaelaps) aculeifer* Canestrini (*Acari: Laelapidae*), allowing the estimation of the inhibition of the specific population growth rate. Adult females of similar age are exposed in artificial soil 28-35 days after the start of the egg laying period. Depending on the endpoint (ECx, NOEC or both), five to twelve concentrations should be tested. At 20° C, the test lasts 14 days after introducing the females, which usually allows the control offspring to reach the deutonymph stage. The number of surviving females and the number of juveniles per test vessel are determined. The fecundity of the mites exposed to the test substance is compared to that of controls in order to determine the ECx (e.g. EC10, EC50) or the No Observed Effect Concentration (NOEC). Any observed differences between the behaviour and the morphology of the mites in the control and the treated vessels should be recorded.

This test was specifically designed as a complementary assay for testing pesticides and it is not considered adequate, as a stand-alone test, for covering the effects on long-term soil invertebrates under REACH. Dietary exposure for this organism is regulated by a very selective feeding behaviour on prey organisms such as collembolans and the available information is insufficient for accepting it as the only information on soil invertebrates unless a specific justification is provided.

It is considered one of the non-mammalian Level 4 test (Level 4 covers in vivo assays providing data on adverse effects on endocrine relevant endpoints) described in the OECD Conceptual Framework: http://www.oecd.org/env/ehs/testing/OECD%20Conceptual%20Framework%20for%20Testing%20and%20Assessment%20of%20Endocrine%20Disrupters%20for%20the%20public%20website.pdf.

OECD 232: COLLEMBOLAN REPRODUCTION TEST IN SOIL

TITLE OF THE TEST GUIDELINES (YEAR OF APPROVAL)

OECD 232: Collembolan Reproduction Test in Soil, 2009

Keywords: effects on terrestrial organisms, reproduction test, collembolan

LINK TO THE OECD SITE

- http://www.oecd-ilibrary.org/environment/test-no-232-collembolan-reproduction-test-in-soil_9789264076273-en;jsessionid=469lcs4c862cn.x-oecd-live-02

WHICH OF THE REACH INFORMATION REQUIREMENTS MAY BE MET WITH THE TEST(S)

Covers Annex X Point 9.4.4. This test may be used as stand alone test for covering the information requirements for soil invertebrates as well as in higher tier assessments, e.g., those based on Species Sensitivity Distributions.

STATUS OF THE VALIDATION BY EURL ECVAM

Not relevant, since this is an in vivo non-vertebrate test.

HOW TO USE THIS METHOD

The ISO 11267 Soil Quality –Inhibition of reproduction of Collembola (*Folsomia candida*) is described in the Guidance on information requirements and chemical safety assessment (IR&CSA), Chapter R.7c: Endpoint specific guidance as one of the confirmatory tests for covering soil invertebrates. The references to the ISO test should be considered as replaced by this OECD guideline.

THE SPECIFIC SCOPE OF THE TG, E.G. LIMITATION ON CHEMICAL CATEGORIES COVERED, IF ANY, AND LIMITATION ON CLASSIFICATION AND LABELLING

This assay is designed for assessing the effects of chemicals on the reproduction of collembolans in soil. The parthenogenetic *Folsomia candida* is the recommended species for use, but an alternative species such as sexually reproducing Folsomia fimetaria could also be used, and the procedure is extensible also to other species of Collembola if they are able to fulfil the validity criteria. The Guideline aims to determine toxic effects of the test substance on adult mortality and reproductive output expressed as LCx and ECx respectively, or NOEC/LOEC value. The duration of a definitive reproduction test is 4 weeks for *F. candida* or 3 weeks for *F. fimetaria*. The feeding behaviour and potential sensitivity should be considered when selecting the appropriate soil invertebrate species. More than one species may be required in certain cases for a proper assessment. Especially, this guideline should be considered when arthropods are expected to be particularly sensitive.

It is considered one of the non-mammalian Level 4 test (Level 4 covers in vivo assays providing data on adverse effects on endocrine relevant endpoints) described in the OECD Conceptual Framework: http://www.oecd.org/env/ehs/testing/OECD%20Conceptual%20Framework%20for%20Testing%20and%20Assessment%20of%20Endocrine%20Disrupters%20for%20the%20public%20website.pdf. The use of a parthenogenetic or a sexually reproducing species shall be specifically considered according to the endocrine mechanism to be addressed.

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