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Use of spinosad in Swiss organic agriculture

History

Spinosad has been submitted for registration in Switzerland in 2000. When it was registered, it has been proposed for inclusion into the Swiss inputs list for organic agriculture in 2001. The private standard organizations Bio-Suisse and Migros-Bio concluded that, based on the current state of knowledge, spinosad was acceptable for use in organic agriculture (see below). As a result, it was permitted for selected vegetables and ornamental plants. In 2002, the use was extended to grapevine, and later to apples and pears.

The assessment concluded that

- Spinosad is compatible with the Swiss Organic Farming Ordinance, the FAO/WHO 'Codex Alimentarius' standards and the requirements of the American 'National Organic Program' (NOP). It also fulfils the requirements of the IFOAM criteria, as it is a substance produced by microorganisms (see IFOAM guidelines 2000).
- The microorganism is not a GMO (confirmed and signed by the submitting company) but a chemical mutant.
- The risk of impact to the environment was considered as acceptable, as the US EPA categorized spinosad as a 'reduced risk product' (see EPA fact sheet www.epa.gov/opprd001/factsheets/spinosad.pdf). The topical acute activity against honeybees is less than 1μg per bee, which places spinosad in the "highly toxic to bees" category of the EPA. Once residues have dried completely, toxicity for foraging bees is considered negligible. In addition, spinosad is relatively short-lived in the field and photodegrades rapidly, with half-lives less than one day.
- Spinosad was first regarded as an insecticide with a narrow activity spectrum (lepidopterans and some species of other orders) and low side-effects on beneficials. Therefore, it was considered an interesting alternative to broad spectrum insecticides like pyrethrum or rotenone. However, novel data show a broader range of activity. Therefore, each crop/application will have to be considered separately, to safeguard minimum environmental impact.
- Leaching data show that spinosad and its aged residues are unlikely to leach in most soils, are relatively immobile and pose little threat to ground water.
- The composition (e.g. additives) is compliant with the requirements for the Swiss inputs list (neither Swiss nor European organic legislation make restrictions in this respect).

Conclusions

Spinosad fits with the guidelines of the Swiss organic farmers' associations and with the Swiss organic legislation, and was therefore included in the FiBL inputs list. Its use is currently restricted to horticultural crops, grapevine and ornamentals, while allowance for use in arable crops is unlikely.
The inclusion in the inputs list is subject to an annual re-evaluation and depends on registration status at state level, new results on environmental toxicity, and on assessments of organic acceptability at national and international level.

International outlook

Since 2000, evaluations and discussions in other countries have intensified. The latest thorough assessment, which also includes a list of recent literature, has been provided by OMRI for the US (www.omri.org/spinosad_final.pdf). The assessment panel concluded that spinosad is compatible with organic agriculture and suggests inclusion into the NOSB list.
The discussion process in the EU is still ongoing. Once completed, its outcome will strongly influence the Swiss assessment as well.
In the course of the Concerted Action project 'ORGANIC INPUTS EVALUATION' (see www.organicinputs.org), an informal assessment of spinosad involving various international experts is planned for the near future.

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