

About the recent re-evaluation of neonicotinoids regarding bee risks in the Netherlands

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Abstract

Background: This paper describes the re-evaluation of the risk to bees of four insecticidal substances authorised in the Netherlands, performed in 2011 at the request of the Dutch government.

Results/conclusion: All products retained their authorisation but some label revisions were necessary. Several risk mitigation issues were highlighted during the evaluation process.

Keywords: neonicotinoids, bees, pesticides, risk assessment

Introduction

The decline of bees is a worrying phenomenon in many areas of the world. Bees are nowadays getting a lot of publicity in the Netherlands as well as in many other countries. In the media, an often heard cause for the decline is the use of pesticides, notably neonicotinoids. In early 2011, stimulated by public pressure, the Dutch Government decided that a re-evaluation of the risk of neonicotinoids to bees should be performed by the competent authority, the Board for the Authorisation of Plant Protection Products and Biocides.

Methods

This re-evaluation deviated from normal re-registration procedures in which individual products are considered according to fixed timelines prescribed legally. Instead, all products containing the active substances in question were assessed together. Furthermore, industry was requested to immediately submit all studies relevant for the risk to bees which had not been submitted yet in the normal application processes. This yielded a large amount of new information as many of the products were up for re-evaluation at short notice and a lot of new studies had been already prepared for this.

Four systemic insecticidal substances were selected for the re-evaluation: the neonicotinoids imidacloprid, thiamethoxam and clothianidin, and the pyrazole fipronil. Other neonicotinoids allowed on the Dutch market are less acutely toxic to honeybees and were not included in the project. The re-evaluation included both plant protection products (spray applications and seed treatments) and biocides and concerned a total of 55 products. The risk was assessed in accordance with the most recent guidance, the EPPO guidelines of 2010^{1,2}. Exposure routes considered in the evaluation were: direct in- and off-field exposure, from spray drift but also from dust from treated seeds; indirect exposure from uptake in flowering organs of the crop itself, weeds and succeeding crops, via honeydew and guttation.

Next to the protected dossiers submitted by industry, public literature was also considered. A number of meetings with bee researchers, industry and the Food and Consumer Product Safety Authority were held during the evaluation process. The newly submitted studies, information from public literature and new options for risk mitigation were discussed in these meetings. Label mitigation measures were ensured to be enforceable and manageable in practice.

Results/discussion

Of the 55 products, none was eventually taken off the market. The label of 14 products was revised. It should be noted that many products already contained restrictions for risk mitigation for bees before the re-evaluation.

During the project, risk mitigation issues were identified which needed further consideration:

- The term 'flowering crop' needs to be defined for bee relevance to enable enforcement, both for one flower and for the percentage of flowers in a field.
- A list with crops attractive to bees needs to be determined and made easily available online.
- Risk mitigation for non-professional users may be used but should be formulated in a simple way.
- The risks to bees from succeeding crops and risks from re-sowing after crop failure for persistent substances were assessed in the Netherlands for the first time. In some cases, a minimum waiting period for bee-attractive succeeding crops may be necessary.
- It should be ensured that use restrictions are seen by the right person. Restrictions are mentioned on the product label, but for seed treatments they need to be taken to the seed bags; furthermore, for e.g. cabbages, seedlings are grown indoors and sold to a third party, so restrictions then may need to be taken to the buyer of the seedlings. If waiting periods are necessary, it should be considered that for some crops the user of the land may change from year to year.
- In the Netherlands there is a specific use as dipping treatment of flower bulbs. However, since the residue level in pollen and/or nectar in the flower and thus the exposure to bees after this type of treatment is unknown, it should be avoided that treated bulbs would flower.
- Spray or dust drift restrictions to protect bees in the off-field area may be necessary.

References

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