DEVELOPMENTS IN THE POLLINATOR RISK ASSESSMENT

Following the New EFSA GD and ICPPR

Helena Crosland[1#], Gabe Weyman[2.]
[1]Cambridge Environmental Assessments, Boxworth, UK; [#]Corresponding author: helena.crosland@cea-res.co.uk.
[2]Gabe Weyman Consulting Ltd. Frome, UK.

In July 2022 the EFSA released a draft updated guidance on the risk of plant protection products to bees for public commenting. In October 2022 the 15th International Symposium on the Hazards of Pesticides to Bees (organized by the International Commission for Plant-Pollinator Relationships (ICPPR)) was held in the UK. This poster aims to summarise key concerns raised in the public commenting period of the new draft guidance, and the clarifications (if any) provided on these topics at the ICPPR conference.

CALCULATOR TOOL

What is it? A calculator tool allows easier and faster calculation of risk by entering base data. It would also aid understanding of the (now very complicated) risk assessment.

Problems? 1) No tool currently available. 2) The guidance doc (GD) is large, and it is hard to dig out relevant information for performing the risk assessment (RA) (and some given eqns. are wrong). 3) Difficult to assess viability/impact of new RA approaches.

Answers? A calculator tool is under development by the working group (WG) – no timeline but hope to release in line with finalized GD [too late?]. EFSA will be running workshops when guidance released.

TEST GUIDELINES

What is it? Guidelines facilitate standardized testing of species. Ideally these are ring tested and adopted by the OECD. Some bee test guidelines are now old, others are still under development and not adopted.

Problems? 1) Attendees at ICPPR highlighted the on-going issue of acquiring toxic reference item for non-lab studies (these need to be formulated, registered products, in large quantities). Historically, dimethoate products used (but difficult to acquire legitimately now). 2) No ring-tested/Adopted guidelines available for several study types required by the draft guidance. Several also need updating. 3) New endpoints are required from some studies.

Answers? Representative from OECD at ICPPR said they were aware of toxic reference issue but said any suggested changes to guidelines need to be led by MS – so stakeholders should discuss them with regulators so they can be brought to the OECD. It is also an issue for non-target arthropods (NTAs), so needs coordination.
Working groups developing/improving study methodologies. Oomen *et al*., 1992 test useful if effects on brood/persistent substances - statistically robust, but not a replacement for full field studies. Semi-field (EPPO 170) is being updated to include requirements of new GD. Bumble bee (BB) chronic study protocol has finished ring-testing (2019) – but they are missing OECD submission support. Submission of an update to OECD 75 (brood study) has been sponsored by Germany and Switzerland. Microbials: Aiming to develop test methods based on OECD 245 – ring-testing planned in 2023.

TRT (TIME-REINFORCED TOXICITY)

What is it? Increasing toxic effects over increasing duration of exposure. An assessment is required by the draft GD - based on results of 10-day honey bee feeding study (OECD 245).

Problems? 1) New endpoints required from OECD 245 (daily LD50 and regression slope thereof); 2) Low toxicity substances penalized – if no effects observed in 10 days, triggers cannot be calculated and have to assume worst case TRT or perform more testing at higher conc./longer duration. Limited practicality due to solubility limits in food and keeping adult bees alive in lab. 3) No viability assessment conducted. 4) The triggered winter bee assessment may be extremely harsh and possibly based on invalid assumptions (e.g. long extrapolation from summer bee data).

Answers? ICPPR discussions – Diet supplements (pollen) help to keep adult bees alive for longer in lab. Noted that higher tier studies covering whole lifespan (e.g. field studies) would cover TRT risk. EFSA WG stated they are aware of these concerns from commenting on GD and are working on them, but no apparent solution yet.

NON-*APIS* SPECIES RA

What is it? The GD specifically states covering "risk assessment of plant protection products on bees (*Apis mellifera*, *Bombus* spp. and solitary bees)", not just honey bees.

Problems? 1) It has been unclear what risk assessments/studies are required to be performed for the protection of *non-Apis* species. 2) No protection goals for *non-Apis* species were set (no risk assessment triggers). Although extensive calculations for exposure and hazard quotients are given, there seems to be no use for them. Honeybees are therefore the focus, despite primarily being a managed species (arguably could be considered livestock and possibly detrimental to wild bees, which may need protection from honey bees).

Answers? A lot of research comparing relative sensitivities of honey bees and other bee species was presented at ICPPR. The question of whether honey bees could cover other spp. was however open. EFSA stated that they would only consider species comparison arguments on a case-by-case basis. Worth noting that some species (including those not mentioned in regulation) can have very different exposure routes (e.g. soil nesting bees, leaf-cutting bees). Until release of the calculator tool/final GD (expected May 2023) it is not clear what is required for *non-Apis*, nor potential impact of this.

Photos courtesy of Gabe Weyman and Helena Crosland.

References:
1 EFSA Revised guidance on the risk assessment of plant protection products on bees (*Apis mellifera, Bombus* spp. and solitary bees). Draft released for publ consultation (2022).
2 Abstract book for the 15th international Symposium on hazard of pesticides to bees can be found via this link: https://bpg-meeting.julius-kuehn.de/