26/06/2023

# Subject │ Minutes of the Joint WG 3-4 meeting of COST Action CA18221: “PEsticide RIsk AssessMent for Amphibians and Reptiles”

1. **Welcome to participants**

The participants (**Annex 1**) were welcomed by the Local Organiser, Olga-Jovanovic Glavas, the WG 3 co-leader, Valentin Mingo, and the WG4 leader, Silvia Pieper.

1. **Presentation of the meeting objectives**

The Action chair, Manuel Ortiz, reviewed the objectives of the COST Action CA18221 to frame the objectives of this joint meeting within the tasks of Working Groups 3 and 4. In particular, the meeting should serve to review information addressing the choice of indicator and focal species and information on toxicological sensitivity of amphibians and reptiles to pesticides to progress in the determination of extrapolation and assessment factors.

1. **Presentation of life history trait data**

The life history trait database progress was presented. The first step was the analysis of amphibian and reptilian species distribution in agricultural areas in Europe, which served to select those taxa more relevant as species of concern. Several STSMs had been conducted to compile life history traits of relevant species of amphibians and lizards. Ana Marques, holder of an STSM conducted during this Grant Period to complete the life history trait database with snake and turtle data, presented her results.

1. **Presentation of ecotoxicological data**

Anamarija Zagar and Besta Dimitrova presented the results of their work, funded through two STSMs, on compilation and review of toxicological literature data for reptiles. A question came up relative to the possibility of analysing the test protocols in the reviewed literature to elaborate a toxicity test method for reptiles. It was agreed that this question would be addressed during the Third General Meeting.

Isabel Lopes presented the results of an STSM hosted by her team and conducted by John Howieson on the evaluation of behavioural endpoints as potential non-destructive surrogates for chronic toxicity effects of pesticides on aquatic amphibian stages.

1. **Identify links and needs with fit-of-purpose risk assessment**

Peter van Vliet presented the fit-for-purpose risk assessment proposal that was elaborated by Emily McVey and presented originally at the Second General Meeting in Krakow (September 2022). The parts of the risk assessment scheme where the topics under evaluation in this meeting were identified.

1. **Focused discussion links and needs with fit-of-purpose risk assessment**

Two discussion groups were created, one focused on the choice of indicator and focal species and another one on the integration of ecotoxicological data into the risk assessment scheme.

The focal species group reviewed the different traits in the database to explore the direction in which each of those traits could influence a higher or lower susceptibility to acute and chronic pesticides. The proposal was shown in the following table, referred to the type of toxicity (acute or chronic) and the protection goal (individual or population):

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Susceptibility (acute)** | **Susceptibility (chronic)** |
| Survival rate | - | Pop: inverse |
| Time to metamorphosis | - | Indiv (aquatic): directRest: unsure |
| Surface to volume ratio (from mass and length dana) | Indiv: direct | Indiv: direct |
| Time to sexual maturity | - | Pop: direct |
| Lifespan | - | Pop: inverse |
| Egg biometry | - | - |
| Clutch size | - | Pop: inverse |
| Daily egg laying rate | (see time of permanence in breeding sites) |  |
| Clutches per year | - | Pop: inverse |
| Ovarian mass | (related to body condition) | (related to body condition) |
| Reproductive effort and investment | - | Pop and Indiv: inverse |
| Time of permanence in breeding sites | Indiv (aquatic): direct | Indiv (aquatic): direct |
| Home range | Pop and Indiv: inverse | Pop and Indiv: inverse |
| Migration and dispersal distance | Indiv: direct | Indiv: direct |
| Distance travelled per day | Indiv: inverse | Indiv: inverse |
| Migrating / dispersing time | Indiv: direct | Indiv: direct |
| Daily FIR / Daily energetic expenditure | Indiv: direct | Indiv: direct |
| Metabolic rate | Depends on the product |  |
| Assimilation efficiency | Indiv: direct | Indiv: direct |
| Dermal absorption rate | Indiv: direct | Indiv: direct |
| Phenology (early/late breeders, time of emergence) | Case by case, depends on the region, crop, etc. |  |

This list should be used to build the indicator species (an unreal species that combines those traits leading to highest susceptibility), to be used in the low tiers of the risk assessment. For the focal species, fields studies should support the choice, as the focal species needs to be present in the fields of relevance. Then, the traits should serve to choose among those species that occur in the crops. In general, it is encouraged to focus on traits rather than on species.

The ecotoxicology group went through the different steps of the fit-for-purpose risk assessment. It was agreed that Specific Protection Goals proposed by the EFSA Scientific Opinion (individual survival and population persistence) could be adopted. The exposure assessment was discussed in relation to routes whose consideration has not been sufficiently addressed, including sediment uptake (for hydrophobic substances) and maternal transfer. The extrapolation of toxicological data for terrestrial stages leads to two different outcomes; the review work by Ortiz-Santaliestra et al. (2018) suggests that at least an assessment factor of 100 would be needed to cover those substance like pyrethroid insecticides that are much more toxic to amphibians or reptiles than to birds of mammals. The work by Crane et al. (2017) suggests that the current assessment factor of 10 would be enough. It is agreed that a deeper analysis of the data is necessary to conclude on the assessment factors for terrestrial stages.

1. **Closing**

The contribution of all participants is acknowledged. The participants thank Olga Jovanovic-Glavas and the University of Osijek for hosting the meeting.

## LIST OF ANNEXES

**Annex 1 – Attendance List**

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