Table 2. Main data gaps for earthworms in the context of this workshop on soil organism pesticide risk assessments and how filling them would improve ERA.

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| Data Gap | Needed for |
| Definition of realistic worst-case environmental scenarios for modeling (spatial and temporal scales, number of spatial dimensions, soil and climate variables) and establishing link to existing exposure models | Relevant data for FORESEE’s environment module |
| Intermediate measurements of survival, growth, and reproduction in chronic earthworm study | Time course data to parameterize GUTS or DEB-TKTD |
| Toxicity test results for different soils and chemicals with a range of Log Kow values | Proof of concept with a short term benefit to the existing risk assessment as it could be used to replace the arbitrary correction factor of 2 when log Kow > 2 |
| Measured dermal and oral uptake rate constants for a wide range of Log Kow values disentangled from experimental variables (e.g. soil type, water content) | Establishing the relationship between uptake rate constants and substance properties (e.g. log Kow) whilst accounting for bioavailability  |
| A few comprehensive studies with measurements of several state variables (e.g., concentrations in bulk soil, porewater and earthworms & toxicity, over time)  | Better system understanding and evaluation if model complexity is appropriate |
| Ecological studies | Data on movement differences among earthworm ecological categories |
| Tests of inherent toxicity in multiple worm species | Data needed for cross-species extrapolation and to distinguish sensitivity differences from exposure differences |