

Stakeholders' Perspective on Ecological Modeling in Environmental Risk Assessment of Pesticides: Challenges and Opportunities

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Abstract

The article closely examines the role of mechanistic effect models (e.g., population models) in the European environmental risk assessment (ERA) of pesticides. We studied perspectives of three stakeholder groups on population modeling in ERA of pesticides. Forty-three in-depth, semi-structured interviews were conducted with stakeholders from regulatory authorities, industry, and academia all over Europe. The key informant approach was employed in recruiting our participants. They were first identified as key stakeholders in the field and then sampled by means of a purposive sampling, where each stakeholder identified as important by others was interviewed and asked to suggest another potential participant for our study. Our results show that participants, although having different institutional backgrounds often presented similar perspectives and concerns about modeling. Analysis of repeating ideas and keywords revealed that all stakeholders had very high and often contradicting expectations from models. Still, all three groups expected effect models to become integrated in future ERA of pesticides. Main hopes associated with effect models were to reduce the amount of expensive and complex testing and field monitoring, both at the product development stage, and as an aid to develop mitigation measures. Our analysis suggests that, although the needs of stakeholders often overlapped, subtle differences and lack of trust hinder the process of introducing mechanistic effect models into ERA.

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