

Estimating the exposure of pesticide residues in nectar and pollen to bee pollinators

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What

- > Develop a global nectar and pollen residue database
- > Develop user interface to calculate pesticide residue unit dose (RUD) values
- > Propose updates to Tier 1 bee pesticide risk assessment using default values based on pollen and nectar residue values

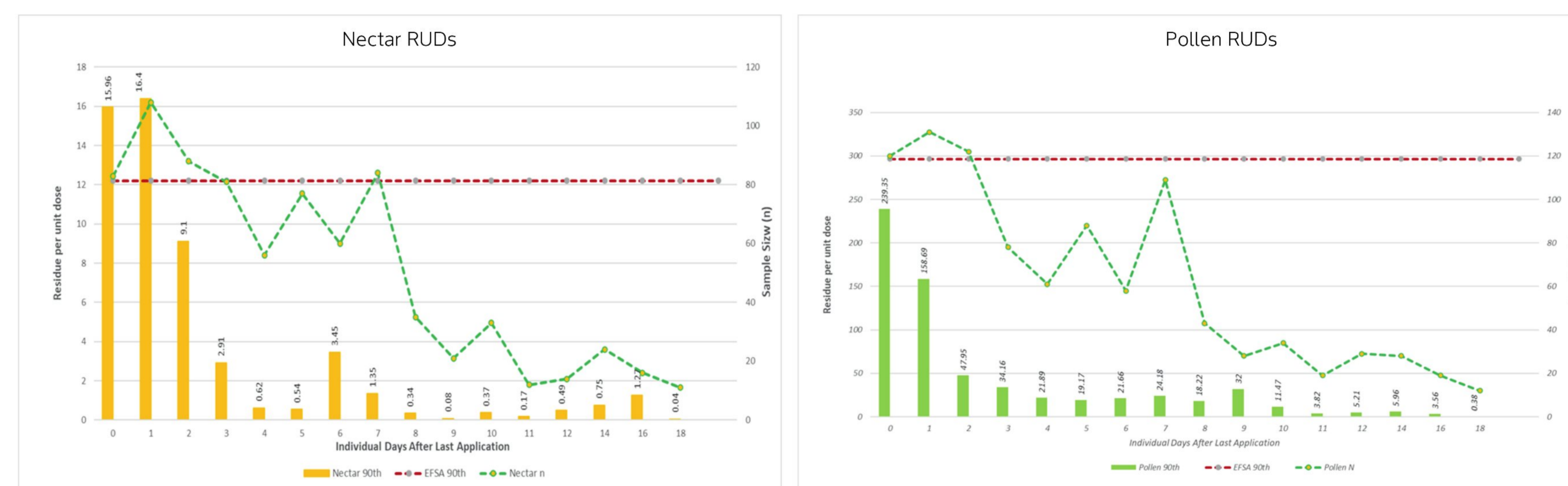


Why

- > Exposure to pollen and nectar are main components of the bee risk assessment
- > USEPA uses default RUD estimates are currently based on non-bee relevant matrices
- > Study data was available on a diversity of chemistries and application methods in the US and EU
- > Known application rate and use pattern connected to residue values
- > Residue studies are expensive and logistically complicated to conduct to refine all bee risk assessments

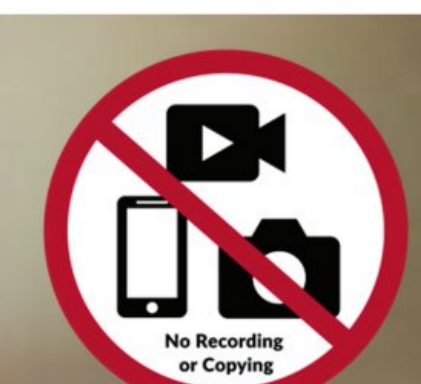
How

- > Compilation of registrant submitted data from both the US and EU for pesticide registrations (insecticides, fungicides and herbicides)
- > Diversity of use patterns (foliar, seed treatment, soil applications, tree injection)
- > Database contains - 12,773 unique bee-relevant values from over 35 pesticides
- > Thorough standardization and quality control process
- > User interactive tool to calculate RUD values for pollen and nectar
- > Designed to allow flexibility in the selection of pesticide application methods



Outcomes

- > Reduced the overall uncertainty of using non-relevant matrices while maintaining sufficiently protective dietary exposure assumptions in the Tier 1 bee risk assessments
- > Database can be kept populated with new data when available
- > Leveraging existing data for more informed and predictive screening assessments, better informed exposure assessment in research studies, and to inform integrated pest management decisions



We thank the member companies of the Pollinator Research Task Force (PRTF) for constructive feedback throughout this project and particularly on this poster, and for providing the residue data and funding for this project.