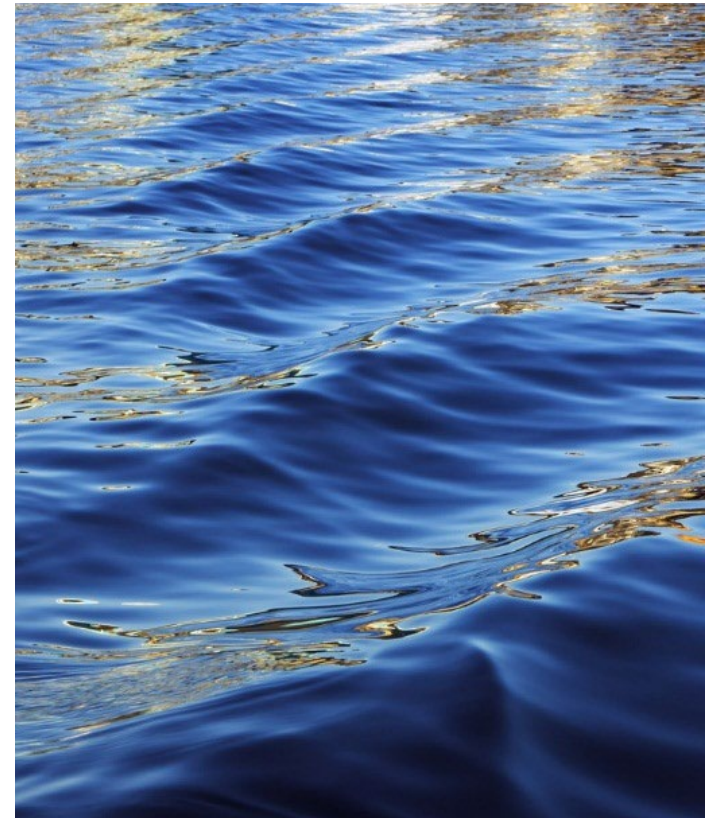


**PPDC Resistance
Management
Workgroup
Implementation Strategy for
Workgroup
Recommendations**

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(Bill Chism, OPP Co-chair, ret.)



Resistance Management Workgroup

- Changes in EPA Staffing
 - Bill Chism – Retired
 - Kimberly Nesci – Now with USDA OPMP
 - Jonathan Becker – BEAD Co-lead
 - Nikhil Mallampalli – BEAD Co-lead
 - Anne Overstreet – Acting BEAD Division Director

Introduction

- Pesticide Program Dialogue Committee (PPDC) resistance management workgroup recommended EPA take a more proactive role in resistance management.
 - The full PPDC voted to forward this to OPP in October 2021
- These recommendations could be a significant change in how OPP currently does business.
- These recommendations could require a significant commitment in time and resources.

Resistance Management - Value to OPP

- **Value to Agency** – RM would be an investment of resources that could help avoid future problems (e.g., glyphosate) and preserves the resources/effort EPA puts into actions such as new AIs.
- **Value to Users** – Prolong effective lifespan of pesticide. Examples:
Public health pests have not had a new mode of action in decades;
Herbicides – over 80 million acres of glyphosate resistant weeds.
- **Value to Ecosystems** – Fewer pesticide applications/year, fewer pesticides sprayed on a crop, reduced chance of off-site movement to non-target species, possible reduced impacts to endangered species.

Workgroup Final Report

The RMWG's report to the PPDC makes 5 major recommendations that encompass the original charge:

1. EPA should explore **changes in pesticide labels** to make them more uniform across manufacturers. Labels need to contain clear and concise language so all needed information to implement resistance management is easily found and understood by end users such as crop consultants, pesticide decision makers, and commercial and private pesticide applicators.
2. EPA should conduct a thorough **review of EPA policies and regulations** that impact resistance management, remove contradictions, and situations that hinder effective resistance management to the maximum extent possible.
3. EPA should **expand collaboration and outreach efforts** with other federal agencies (USDA, CDC, FWS, etc.) and convene panels (SAP) of relevant stakeholders to address specific priority issues and questions associated with resistance and resistance management.

Workgroup Final Report

The RMWG's report to the PPDC makes 5 major recommendations that encompass the original charge:

4. EPA should explore how it can encourage proactive pesticide resistance management and prevention programs in cooperation with industries and universities through **cooperative agreements, updated training materials, and grant programs**.
5. EPA should explore the creation of **incentive programs** for assistance in overcoming the hurdles associated with resistance management, in particular incentives to researchers, users and suppliers for accurate early detection and timely adoption of regionally specific resistance management actions between the time of detection of potential resistance and confirmation of resistance.

Current OPP Resistance Management Activities

Conventional Pesticides

- EPA has been implementing PR Notices 2017-1 and 2017-2 for registration and registration review
- To date, 178 registration review **chemical** cases have adopted RM labeling under the PR Notices (out of a total of 210 chemical decisions issued since 2017)
- New active ingredient registrations: Ag use labels for new a.i.s now routinely have RM text added using the PRN guidance
 - Mode of action labeling
 - Scouting before/after treatment
 - Reporting resistance

Plant-incorporated Protectants (PIPs)

- Lepidopteran IRM improvements for Bt corn and cotton PIPs
- Based on recommendations from the 2018 FIFRA Scientific Advisory Panel and recent cases of resistance
- Enhanced measures:
 - Resistance monitoring
 - Remedial action (mitigation for resistance cases)
 - Refuge compliance
 - Improved stakeholder communication
- EPA currently negotiating the new IRM framework with industry

Managing Expectations

- Full implementation of the PPDC recommendations will be a long-term effort
 - Experience with Bt PIPs – RM strategy took years to develop and is still evolving after 25 years
 - Expectations – full development, implementation and adoption of a RM strategy may take 5+ years for each targeted sector
- Challenges
 - OPP resources, competing priorities (e.g., ESA implementation)
 - RM measures need to be specific to pesticides and target pests – one size fits all approaches not likely to be effective
 - Grants and incentives programs – funding sources?
 - Enforcement of mandatory measures
 - Registrant burdens

PPDC Implementation - Policy Considerations

- The PPDC report makes broad recommendations that, if fully implemented, will impact a number of pesticide regulatory policies (e.g., labeling, risk-benefit decision making, use of SAP, etc.).
- Recommendation 2 specifically suggests EPA “conduct a thorough review of EPA policies and regulations that impact resistance management and remove contradictions and situations that hinder effective resistance management to the maximum extent possible.”
- For some recommendations, rulemaking may be necessary.
- FIFRA risk-benefit paradigm for pesticide regulatory decisions – role of resistance management.

PPDC Implementation - Scope Considerations

- Implementation for all pesticides vs. targeting individual sectors
- Could identify groups of chemistries and uses to focus initial implementation, for example:
 - Pesticides targeting pests with significant resistance history and/or for which resistance results in significant economic costs
 - Pesticides targeting public health pests
 - Pesticides used over the top of herbicide tolerant crops
 - Existing active ingredients w/ RM concerns: registration review as a means to implement RM – can implement across-the-board changes for all registrants
 - New active ingredients w/ RM concerns: implement resistance management at the time of registration
- Voluntary vs. mandatory
 - Or a hybrid approach (some aspects mandatory, others voluntary) – some precedence with PIPs

PPDC Implementation

- OPP briefings on implementation to Office Director, Division Directors
- Internal discussions on pathways forward
- Plans to establish an interdivisional OPP workgroup (BEAD, BPPD, PRD, RD, other groups as needed)
 - To evaluate, prioritize, and develop an implementation plan for the recommendations developed by the PPDC resistance management workgroup.
 - Outcome: prioritized actions, responsible entities, & timeline (e.g., workplan)
 - Periodic updates to full PPDC
 - The interdivisional team will consider:
 1. Triage the PPDC report to identify the easy-to-implement actions vs. the longer term, resource-intensive actions;
 2. What recommendations (if any) from the PPDC WG EPA can't adopt.
 3. Which recommendations would require rulemaking.

Potential Next Steps and Options

- OPPEL – leverage work of OPPEL group
 - Develop resistance management section through the OPP electronic label process, to be determined by the interdivisional workgroup and consistent with PPDC recommendations and existing PR Notices
 - Ensure continued priority/focus on OPPEL as a mechanism for structured labeling
- New active ingredients:
 - Ensure that risk–benefit analysis considers RM as part of regulatory decisions
 - Ensure existing PR Notice language is on all new AI product labels and/or terms of registration and additional language developed by the WG
- Existing active ingredients:
 - Impose existing PR Notice language or additional language developed by the WG via registration review label amendments; prioritize registration review label amendments for labels bearing RM language.

Potential Next Steps and Options

- Stakeholder Engagement/Meetings
 - OPP could tie into the existing Federal IPM Coordinating Committee (FIPMCC) managed by OPMP
 - Ensure broad federal awareness of emerging resistance issues
 - Set up a yearly RM meeting with outside stakeholder groups
 - RAC meetings
- Second PPDC Workgroup on RM?
 - Separate charge needed