



# MP3 Symposium

## MP3 Evaluation – Breakout Session Summary

March 10, 2016

USDA Federal Building “Patriot Plaza III”  
355 E Street, SW  
Washington, DC 20024

### Objectives

The Managed Pollinator Protection Plan (MP3) Evaluation breakout occurred in two sessions. Presentations over the course of both sessions were designed to allow participants to:

- Gain an understanding of why evaluation and measures are important to the MP3 process.
- Learn about the work that has been done to develop guidance for states, tribes and stakeholders on measures and evaluation.
- Hear state-specific examples of MP3 evaluation.
- Learn about national data sources and the utility to evaluating the effectiveness of MP3s nationally.
- Discussion during the first session was intended to engage states, tribes and participating stakeholders in an exercise to inform specific measures that can be used for their programs. The discussion in the second session took on a national focus: participants discussed recommendations on appropriate measures for consideration at the national level.

### Presentations

#### *Session 1*

- **Marietta Echeverria**, US Environmental Protection Agency (EPA) and **Steve Dwinell**, Florida Department of Agriculture, provided an overview of the purpose of the session and importance of evaluation in the MP3 process.
- **Bonnie Rabe**, State FIFRA Issues Research and Evaluation Group (SFIREG), explained that examples of qualitative and quantitative evaluation measures have been developed based on the five goals and objectives identified Association of American Pesticide Control Officials (AAPCO) SFIREG guidance on MP3s (the SFIREG guidance is available on the website noted above).
- **Jeanette Klopchin**, Florida Department of Agriculture, presented on “Florida MP3 Evaluation: 2016 preliminary survey results.” The presentation described baseline data collected from beekeepers, growers and applicators on current knowledge, perceptions, behavior, communications and needs related to pollinator and pesticide awareness and the FL MP3.
- **Patrick Jones**, North Carolina Department of Agriculture, presented on “Pollinator Symposium: NC Pollinator Task Force Survey.” The presentation described data collected regarding attitudes toward voluntary and mandatory hive registration systems as well as preferred types of notification. The survey was intended to inform development of the NC MP3.

#### *Session 2*

- **Robyn Rose**, US Department of Agriculture Animal and Plant Health Inspection Service (APHIS), presented on “Results of the USDA APHIS National Honey Bee Survey.” The study included 43 states and two territories and included varroa mite prevalence and load, nosema prevalence and load, viral analysis, pesticide analysis, and winter and summer loss rates.
- **Andy Whittington**, Mississippi Farm Bureau, presented on the “Mississippi Beekeeper/Farmer Survey.” The survey evaluated changes in beekeeper and farmer awareness of pollinator health issues, perspectives on the most significant pollinator health issues, and current or potential practices to protect pollinators (e.g., hosting bees, discussing hive placement, modifying insecticide applications and utilizing cooperative standards in the MS Bee Stewardship Program).
- **Joshua O’Rear**, National Agricultural Statistics Service (NASS) presented on “NASS Honey Bee Colony Data.” A new colony loss survey increases survey of operations with 5 or more colonies (quarterly). There is also an annual survey of operations with less than 5 colonies. A cost-of-pollination survey for crop producers is also new this year.

## Discussion Summary

### *Session 1*

Discussion during the first session was intended to engage states, tribes and participating stakeholders in an exercise to inform specific measures that can be used for their programs. Participants referenced the 5 goals outlined by the SFIREG guidance when discussing potential evaluation measures 1) Behavioral changes which increase pollinator protection (while allowing crop protection), 2) Reducing exposure of bees to pesticides, 3) Improving pollinator health, 4) Compliance with applicable pesticide labels, and, 5) National improvement to pollinator health

The following concepts emerged:

- The purpose of evaluation was discussed: it was suggested that evaluation by States and Tribes would inform these entities, as well as EPA, as to whether the MP3s are working, including whether they are having an effect in reducing pollinator health risk from pesticide exposures.
- Stakeholders can be asked for input on measures of success
- Behavior change measures
  - Behavioral changes could include practice changes, improvements in communication, improved/continuing collaboration, usage of educational resources, and adoption of MP3 recommendations on risk reduction.
  - The Kirkpatrick Model for measuring the effectiveness of educational programs was put forward as a model used by Cooperative Extension – it includes a spectrum of measurement including:
    1. Reaction (what is your reaction to the educational experience?)
    2. Learning (have you learned something? assessed through pre and post surveys)
    - 2.5 Intent (is there an intent to change behavior?)
    3. Transfer (has a change been made- post survey at a later date)
    4. Results (what results has the education achieved)
  - Participants discussed that many of the SFIREG draft measures for behavioral change were specific to pesticides, and that evaluation could address other aspects of an MP3 approach, such as improvements in the beekeeper/grower relationship, increases in quality and quantity of forage or changes in attitudes about plants as forage vs. weeds.
  - Examples of pesticide applicator trainings were discussed, and it was noted that the objectives of these programs could form the basis of evaluation.
  - Anecdotal information from early adopters can be powerful marketing and used in parallel to surveys.
  - Behavioral changes could be identified through annual surveys, focus groups, or roundtable meetings
- Results measures

- A participant emphasized that comprehensive, objective measurement of success of pollinator health is needed in addition to behavior change and self-reporting.
- The group discussed potential quantitative measures, noting that measures such as honey production or success of pollinated crops could be metrics.
- Attempts to draw conclusions between cause and effect are complicated by the many variables that impact these outcomes; these measures may still be good directional indicators over the long-term.
- Health of non-managed pollinators could be used as an independent variable to help understand trends in managed pollinator health
- Data on losses is already available that can be used. However, counting the number of bee kills is not a reliable metric of success based on what we know about under-reporting.
- There were concerns about using the number of registered hives because these are not always accurately reported and the fullness of the hives is unknown.
- Results could also evaluate beekeeper/farmer attitudes about success in working together
- The level of effort to maintain a hive, and/or economic-based measures of costs to maintain a hive could be utilized but may also vary from state to state
- Colony strength or robustness could be another measure of health
- Other topics
  - It was noted that there are financial and time-based incentives/disincentives for administering surveys and participating in surveys (for example, some states give tax breaks for hives and there is an incentive to self-report more hives than you have)
  - Distinguish between what changes can be measured today vs. long-term measures. Changes in honey production and bee kill reports over longer time periods could be effective measures.
  - Evaluation needs to be at the right granularity of scale; evaluate effectiveness for local stakeholders.
  - Make sure the measures correlate with plan effectiveness. Plans can be evaluated annually, and there is peer pressure beyond what the plan states to ensure success.

## *Session 2*

Discussion in the second session took on a national focus: participants discussed recommendations on appropriate measures for consideration at the national level. The following discussion points emerged:

- The purpose of the need for national measures was a consistent theme of discussion. On the one hand, national measures would help EPA reach a conclusion on whether MP3s have collectively made an impact as part of the national strategy. On the other hand, with each state developing its own MP3s and corresponding evaluation measures, are national measures appropriate, how would they be identified, and how could approaches be compared or standardized? Would they be a sum of what each state is doing, or something different?
- There was a concern that national metrics could impact local buy-in for plans, and that local groups should determine how to evaluate plans.
- There was a suggestion to focus on a small set of relevant of key questions around awareness and behavior change.
- There was a suggestion to add questions to the NASS survey and existing infrastructure. It was also noted that there are specific processes through Office of Management and Budget to vet any national evaluation tool.
- National metrics on health of colonies do not give specific information about pesticide exposure.
- A national database of 50-100 survey questions could be developed from states could select specific questions for use for state-level aggregation, and the answers could be aggregated.
- There is a need for criteria that national measures must meet, e.g., objective, easy to implement, low cost.

- There was concern that you could have a good state plan to address issues in your state, but if you have the wrong evaluation measures there could be a claim that the plan isn't doing anything.
- Can measures assume that communication is mitigation, and track the penetration of information and the effectiveness of different communication methods?
- Need to be able to evaluate activities in various categories – pesticides, varroa mites, forage/landscape change. Because different states have different components, focus areas, and objectives, it will be difficult to have standardized national measures.
- Use existing data where possible to avoid survey fatigue.
- What if plans are successful in some states and not others? What would EPA do to address this?
- AAPCO will be developing recommendations regarding national measures.