Preplant Session 2: EPA Determination of Field-Scale Soil Fumigant Emission Profiles

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Goal: The U.S. EPA is currently evaluating the potential risks associated with the pre-plant uses of a variety of soil fumigant chemicals. In its effort to develop risk management decisions for these materials, it has become increasingly clear that quantitative data of sufficient quality would allow for a more rigorous determination of emission profiles that would be expected due to regional differences in major fumigant use areas of the country as well as the cultural practices employed in those regions to produce major crops. Given the regulatory challenges that exist, the development of emission profiles which better reflect modern cultural practices and conditions are required. It is envisioned that such measurements can be used to potentially alleviate the regulatory burdens for users who use practices that are intended to reduce emissions. Examples of such factors may include: (1) high barrier film use; (2) regions with higher percent organic matter in their soils; and (3) cooler climates. The goal of this session is to begin to summarize available research on field-scale emissions, use this research to identify the critical factors that should be considered related to how emissions vary from region to region based on chemicals used and cultural practices, and to begin to define factors for these parameters including approaches for more economical, yet reliable, monitoring methods.

Questions:

1. Fumigant emissions from treated agricultural fields can be impacted by many factors and understanding how they vary for different cultural systems is critical. This is important both for the mitigation strategies that might be employed for individual chemicals or within limits defined by a cultural system or geographic region. It follows that there is a desire to obtain as much field-scale emissions data as possible in order to evaluate trends in the data and also to be able to provide more definitive risk estimates for the wide ranges of cultural practices in use in agriculture today. In an effort to solicit this information, the Agency seeks any additional emissions data that may not have been considered in our current process. Do additional data exist? What cultural systems were evaluated? Are they representative of current cultural practice and for what crops?
2. What are the most viable techniques for determining emission profiles (e.g., indirect or aerodynamic flux)? Are these techniques systematically biased with regard to the results provided?
3. Is it possible to capture the necessary information to develop emission profiles from field-scale treatments in a manner that is less expensive and complex than the currently available monitoring methods? If so, what are these techniques? What are the attributes of each and are they inherently biased to the more commonly used methods?
4. Do data exist that can be used to demonstrate, in a reliable manner, responses to questions 3 and 4?

The intent of this session is to provide a public forum where research and initiatives related to the above goal and questions are presented. EPA is not asking participants for recommendations to make regulatory decisions.