ADVANCEMENTS IN EMISSION ASSESSMENT AND DISPERSION MODELING METHODS FOR METAM SODIUM[1]

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Over the past year, there have been important refinements made in field study methods and the subsequent use of such data in exposure analysis of environmental impacts from agricultural fumigants. This technical paper will highlight refinements that are now available to improve environmental assessments for metam sodium and other agricultural fumigants.

Field Study Methods:

Over the past year, two major field studies have been conducted with the objective of providing further testing of on-field versus off-field methods to compute emission rates for metam sodium. The Powerpoint file to be presented at the conference will provide normalized results to help compare a more cost-effective on-field method to the more traditional use of off-field air quality networks. Further data also will be provided on the optimal number of levels to conduct on-field analysis, comparing 5-level coverage to 3 and 4-level coverage methods. Refinements also are described in the treatment of wind profiles, including representation of uncertainty, based on the use of 6 sonic anemometers along a 10-foot profile

Exposure Assessment Methods:

Field studies are generally conducted during worst-case conditions, i.e. hot soil conditions and often in relatively light soils. While these data sets have the advantage of conservatively representing broader application locations and conditions, these data tend to overstate exposures when coupled with dispersion modeling . Through the use of soil model-based extrapolation of emission rates to a broader range of seasonal temperatures and broader range of soil types, existing field studies can be extrapolated to a broader range of conditions. Examples will be provided of the differences between standard and more refined treatment of soil conditions and soil textures.

[1]To be presented on behalf of the Metam Alliance