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Title: Update on Buffer Zone Assessments for Fumigants Based on the FEMS Model
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The Fumigant Emissions Modeling System (FEMS) was developed to facilitate the calculation of buffer zones for agricultural fumigants based on evaluation of acute exposures (<= 24-hour averages). FEMS, which is a probabilistic modeling procedure based on two EPA models, ISCST3 and TOXST, was sponsored by the Metam-Sodium Task Force (Taminco, N.V. and Tessenderlo Kerley, Inc.) and Amvac Chemical. Uncertainties in emissions and meteorological inputs are sampled on a Monte Carlo basis, and modeled consistent with EPA modeling practice. During 2004, updates to the emissions assessment method and modeling methods have been incorporated into FEMS to further enhance the accuracy of the modeling system. Emission fitting methods were refined based on input from the EPA Science Advisory Panel to improve the statistical methods and to ensure that mass balance is maintained during rare sequences of upper-end simulations. Updated procedures also have been identified to improve the efficiency of data collected during field studies, with the objective of improving plume coverage and reducing uncertainties in the emission estimates. This paper summarizes the updates made to the FEMS system to better further improve the accuracy of estimating buffer zone for agricultural fumigants.