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TITLE

VOC emissions and ozone formation from spraying solvent-based pesticides

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The study was carried out to determine the role of pesticide application on airborne VOC concentrations and ozone formation in the SJV. The ozone formation potential (OFP) from the pesticide formulation sprayed on commercial orchards was studied using two transportable smog chambers at four application sites. In addition to the direct measurements of ozone formation, airborne VOC concentrations were measured before and after pesticide spraying using Canister grab samples, adsorbent tube time integrated samples and DNPH tube samples for carbonyl compounds. Soil VOC concentrations were also measured to understand the distribution of VOCs between different environmental compartments. Numerous VOCs were detected in the air and soil samples throughout the experiment but higher molecular weight aromatic hydrocarbons were the main compounds observed in elevated concentrations immediately after pesticide spraying. Measurements indicate that the ozone formation of VOC downwind of the orchard may increase up to 15 ppb after pesticide application with a return back to pre-spray levels after 1 to 2 days.

Biography

Dr Kumar is a Research Scientist at Carlsbad Environmental Monitoring and Research Center of New Mexico State University, Carlsbad, NM. He completed his Ph.D from the Institute of Chemical Technology, Czech Republic in 2006. He worked as a Postdoctoral Researcher at the University of California-Davis, CA. His research interests include, but not limited to, air quality improvement studies and sophisticated instrumental techniques.