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SUBJECT: Review of New Acephate Products Registered after Finalization of the 2013 Addendum to Acephate Risk Characterization Document and any Implication for Additional Changes to Margin of Exposure (MOE) Estimates

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As of March 2019, 17 new acephate products were registered with the California Department of Pesticide Regulation (DPR). These products were registered after the Addendum to Acephate Risk Characterization Document (RCD) was finalized in 2013 (DPR, 2013). The following information provides a review of the new product labels as well as any further refinement to the estimated acute Margins of Exposure (MOEs) enumerated in the memorandum from the Human Health Assessment (HHA) Branch to the Worker Health and Safety (WHS) Branch dated March 20, 2018.

Comparing to the uses analyzed in the acephate exposure assessment document (EAD) (CDPR, 2009) and the Addendum to Acephate RCD (RCD addendum) (DPR, 2013), following issues are noticed based on the new registered product labels.

- One product that is formulated as a fogger was not assessed in either the 2009 EAD (DPR, 2009) or the 2013 RCD addendum (DPR, 2013). There is no monitoring study available for the fogger. However, based on the US EPA Occupational Pesticide Handler Unit Exposure Surrogate Reference Table (US EPA, 2016), applicator exposure is assumed to be negligible for stationary fogger with restrictions on the applicator presence and re-entry. According to the product label, no applicator is allowed on site during application and the restricted-entry interval (REI) is 24 hr. Hence, the handler exposure is considered to be negligible.

For post-application, based on US EPA Standard Operating Procedures for Residential Pesticide Exposure Assessment (2012), "*as long as fogger product labels include a statement restricting entry for at least 2 hours, post-application inhalation exposure to pesticide aerosols should be negligible*." The product label specifies a REI of 24 hours and contains a statement of "*Do not enter or allow worker entry into treated areas during the REI of 24 hours with no ventilation*." Hence, post-application exposure is also considered to be negligible.

- One product can be used in-furrow chemigation for cotton. In the EAD and RCD addendum, only mixer and loader (M/L) exposure via chemigation of cranberries was estimated; the acute MOE was 6.8 based on the maximum treating area of 30 acres (US EPA, 2001 and 2006). For cotton, the maximum treating area is 80 acres (US EPA, 2001 and 2006), and the acute MOE of M/L for in-furrow of cotton is estimated to be 2.3. It is noteworthy that acute MOE for chemigation of cranberries was already listed as high priority for performing exposure assessment in the RCD addendum.

  NOTE: The estimated acute MOE of 6.8 for M/L exposure via chemigation of cranberries is the same as in the March 20, 2018 HHA memo. However, the acute MOE of 2.3 for cotton chemigation is new.

- Maximum use rate for cotton and some vegetables is increased slightly from 1.0 lb/A employed in the EAD and/or the RCD addendum to 1.1 lb/A specified in a new label. This increase translates into a slightly elevated short-term absorbed daily dose (STADD). However, because of the small change, the updated acute MOE value found in the March 20, 2018 HHA memorandum does not need to be revised.

- In the EAD and RCD addendum, only nursery ornamental plants were assessed. A new registered product could also be used in greenhouse. However, based on the exposure assessment practice within EAS, in the absence of experimental data, handler exposures in greenhouse and nursery are considered to be identical although nursery operation may be bigger than greenhouse. Therefore, there are no changes to the MOEs based on greenhouse use.

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