



Regulatory Update: Metam Sodium

Sponsored by TKI



Regulatory Issue is Simple Equation:

$(\text{Emission}) \times (\text{Model}) < \text{Endpoint Concentration}$

- All three terms are important
- Growers will need best science on all three in order
To sustain agricultural yields and quality for
Agricultural fumigants



Buffer Zones or No Buffer Zones?

- ◆ After 5 years + activity, likely that EPA and California will institute buffer zones
- ◆ The Metam Sodium registrants are seeking emissions options and best science modeling options to minimize disruption to growers if this occurs

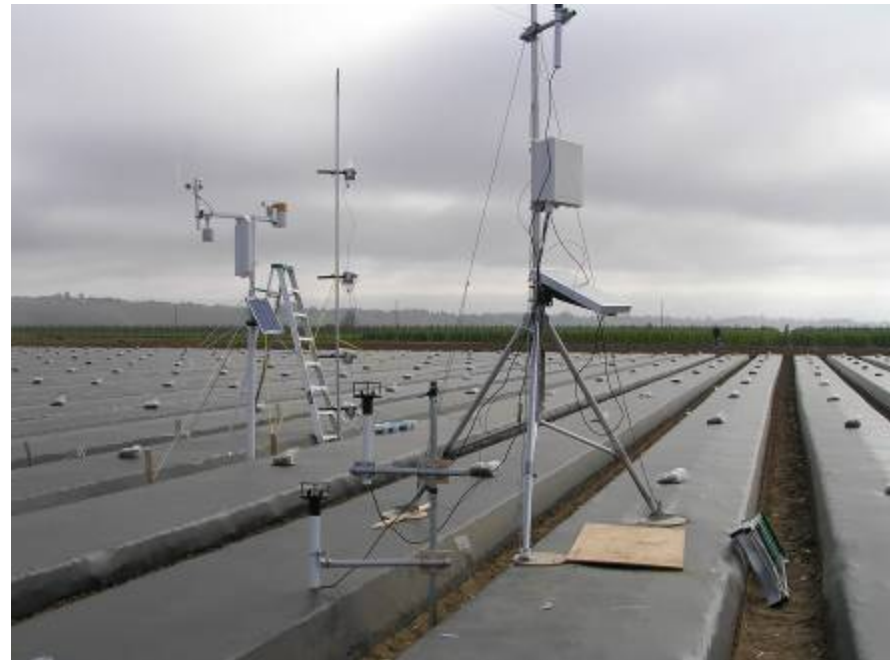


Emissions

Goal is to:

- ◆ Produce options for growers
- ◆ Increase stewardship & reduce buffers

Emissions Assessment / Field Studies





Emission Methods

- ◆ Metam Alliance historically used ambient network methods
- ◆ Now use on-field profile method
- ◆ Details presented at workshop on Wednesday



Metam Sodium Field Study Data Base / Options

Multiple sealing practices in each category:

- Shank injection
- Chemigation
- Drip irrigation
- Flood irrigation
- Center pivot - - (April 2008)



Dispersion Modeling



Dispersion Modeling Analysis

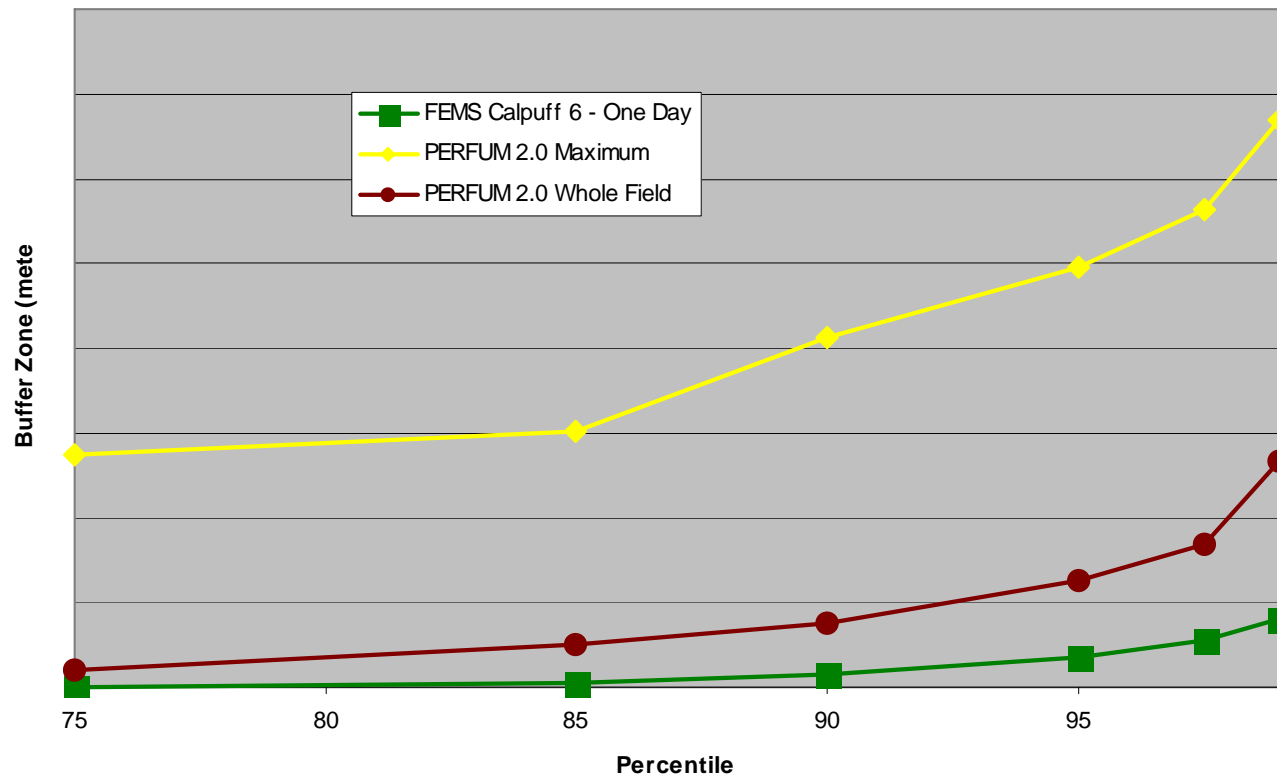
- ◆ Two options: FEMS and PERFUM
 - ◆ FEMS developed by Metam Alliance - - most refined modeling option
 - ◆ Only option based on EPA Science Advisory Panel recommendations on Monte Carlo modeling and use of refined dispersion model (CALPUFF 6)
 - ◆ More realistic assumptions = more manageable buffer
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Current Status of FEMS

- ◆ FEMS, including FEMS / CALPUFF 6 now available at sullivan-environmental.com
 - Executable program
 - User's guide
- ◆ EPA clarified the status of FEMS in the May 2, 2007 risk assessments
- ◆ Updated version planned for Spring 2008

Reasons that Models Important

Comparison of FEMS Calpuff 6 and Perfum Buffer Zones for the Flint Region
(Chemigation/Standard, 220ppb, 5 Acre Application)



Important Clarification of Model Use by EPA

(May 2, 2007 Risk Assessments)

- ◆ *“FEMS or SOFEA can be of equal scientific validity and also would be evaluated and considered in its (EPA’s) risk assessment process.”*
- ◆ *EPA risk assessment based on PERFUM*
- ◆ *FEMS provides SAP-approved refinement for risk mitigation and future*



Buffer Zone Reduction Credits

- ◆ Field studies worst case conditions
 - Hot - - emissions higher
 - Relative light soils in some cases - - higher emission also
- ◆ Relative soil modeling (Chain 2D) helps to extrapolate worst case to broader range of conditions



Buffer Zone Reduction **Credits (Cont.)**

- ◆ Metam Alliance incorporating buffer zone credits into FEMS
- ◆ Can anticipate on order of two-fold reduction in emissions for cooler soils and heavier soils



Ongoing Model Refinements

- ◆ Center pivot applications greatly simplified
- ◆ Refinements under review to more accurately (less conservatively) simulate complex source
 - Application over ~ 60 hours
 - Application daytime and nighttime
 - Active wedge area peak emissions small



Endpoint Concentration



Initiatives on Endpoint Concentration

- ◆ Metam Alliance submitted “bench mark” analysis similar to what EPA used for chloropicrin
- ◆ Seeking comparable basis for setting endpoint
- ◆ Current endpoints:
 - California DPR = 220 ppb
 - USEPA = 22 ppb
 - Seeking more reasonable endpoint for EPA assessments



The End

Organizations & individuals: express
views to EPA and state regulators