



California Environmental Protection Agency
Department of Pesticide Regulation

Update on Volatile Organic Compound Emissions from Pesticides

January 2016

Overview

- Background
 - Fumigant VOC regulations
 - Nonfumigant VOC regulations
- Pesticide VOC emissions inventory

Background

- Volatile organic compounds (VOCs) and nitrogen oxides (NO_x) react with sunlight to form ozone
- The state implementation plan (SIP) for the Clean Air Act describes measures to reduce VOCs and NO_x to achieve ozone standard, and requires DPR to
 - Develop and maintain an inventory to track pesticide VOC emissions in five nonattainment areas
 - Reduce pesticide emissions by specified amounts during May-Oct peak ozone season
 - Require low-emitting fumigation methods
 - Implement restrictions on nonfumigant pesticides for the San Joaquin Valley

Fumigant VOC regulations

- “Low-emission” fumigation methods required during May-October ozone season in San Joaquin Valley, Southeast Desert, Ventura NAAs
- Backup measure if trigger level (95% of SIP goal) exceeded: Fumigant VOC emissions limit
 - Currently required in Ventura
 - San Joaquin Valley has different backup measure
- DPR required to publish annual pesticide VOC emissions inventory report, including determination if trigger level exceeded

Revisions to VOC fumigation methods - 2015

- Add interim fumigation methods
 - using TIF tarpaulins
 - reduced emission “strip” methods
- Remove language now present on revised fumigant labels
- Clarify some language in regulation

Nonfumigant VOC regulations

- VOC content (EP) thresholds specified to designate certain agricultural products as “high-VOC” or “low-VOC”
- For high-VOC products used in San Joaquin Valley
 - Pesticide dealer required to provide information to purchasers
 - Growers required to obtain a pest control adviser (PCA) recommendation for some applications
- Backup measure if trigger level exceeded in San Joaquin Valley: prohibition of several uses of high-VOC nonfumigant products
 - Prohibitions in place in 2015

Restrictions

On the use of a high-VOC product containing abamectin, chlorpyrifos, gibberellins, or oxyfluorfen; and

Applied in San Joaquin Valley during May 1 - Oct 31; and

Application to:

Alfalfa

Cotton

Walnuts

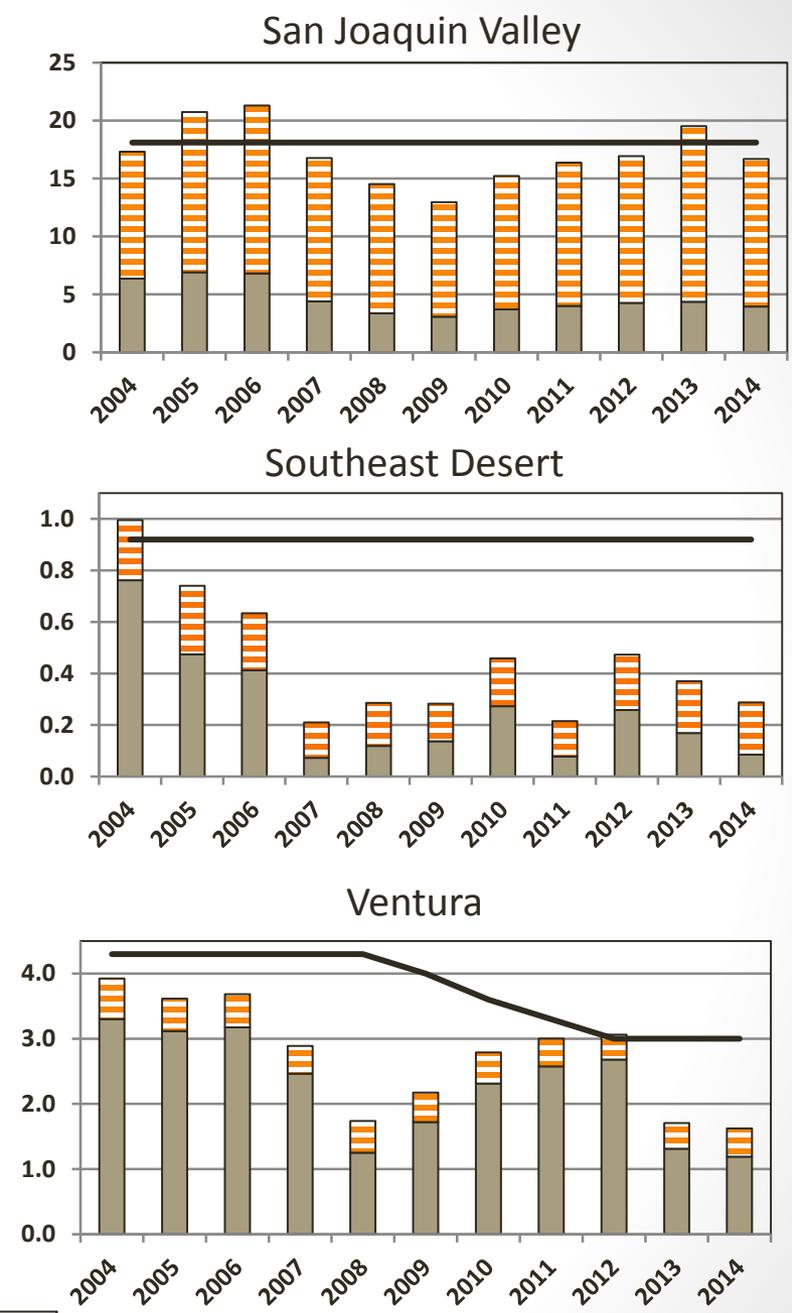
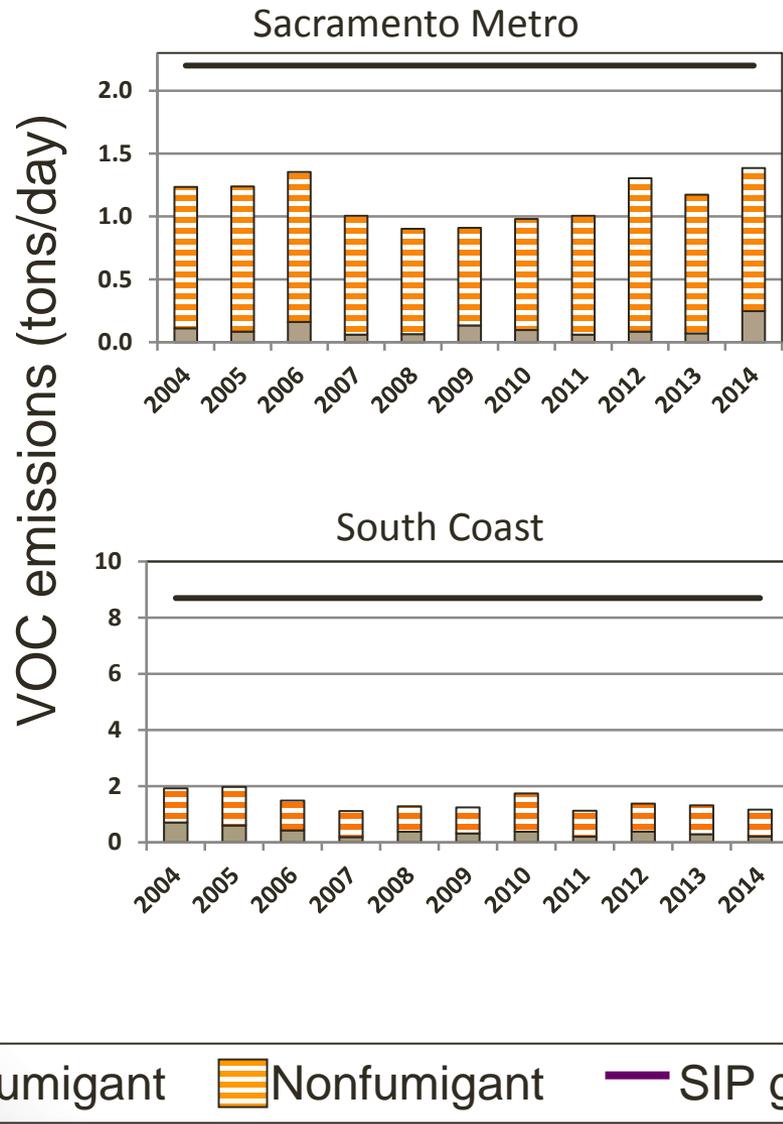
Almonds

Grapes

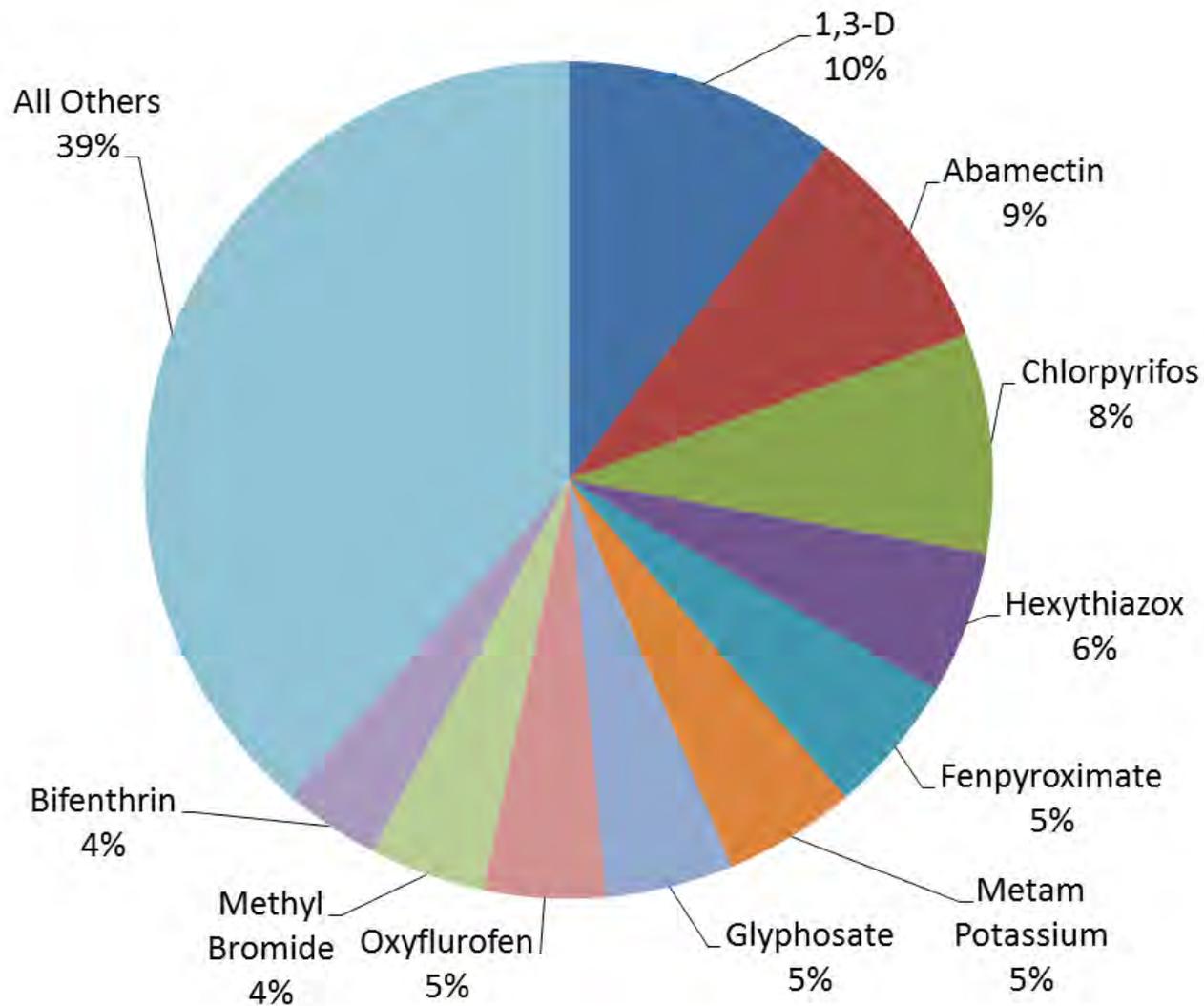
Citrus

Pistachio

2014 draft pesticide VOC emissions inventory



Top pesticide VOC products for San Joaquin Valley, May-October 2014 (draft)



Key points

- Draft 2014 pesticide VOC emissions complied with SIP goals in all nonattainment areas
- Decreased emissions in San Joaquin Valley, Southeast Desert, Ventura and South Coast NAAs
- Increase in Sacramento Metro NAA by 18% due to fumigant use
- San Joaquin Valley NAA
 - Prohibition of the use of high-VOC products began May 1, 2015 and will be in place until at least October 31, 2016.
 - Total emissions were below SIP goal by 1.410 tpd

Emissions inventory issues

- No Fumigant VOC method code
 - Increasing number of PUR records with no method code so default is used
- Emission potentials for products change from a default value when we receive TGA results
 - Some major products have a higher EP than default, some lower
 - Estimate for 2013 increased by 1.242 tpd mainly due to changes in EP of fenproximate and hexythiazox – now the 4th and 5th contributors to inventory

Changes in Emission potentials for Top Ten High-use Products

Product	Primary Active Ingredient	2013 Inventory		2014 Inventory		Change in EP	Change in Emissions, tpd
		EP	method	EP	method		
Fujimite 5 EC	Fenpyroximate	39.15	default_median	87.9	TGA	48.75	0.831
Onager Miticide	Hexythiazox	39.15	default_median	83.6	TGA	44.45	0.502
Cottonquik Cotton Harvest Aid/Defoliant	Urea Dihydrogen Sulfate	6.91	default_median	17.63	TGA	10.72	0.176
Intrepid 2F	Methoxyfenozide	4.80	default_median	5.6	TGA	0.80	0.018
Prowl H2O Herbicide	Pendimethalin	5.71	default_median	9.52	Derived	3.81	0.039
Lambda-CY EC Insecticide-RUP	Lambda-cyhalotrin	39.15	default_median	77.36	TGA	38.21	0.038
ET Herbicide/Defoliant	Pyraflufen-ethyl	39.15	default_median	89.77	TGA	50.62	0.037
PERM-UP 3.2 EC Insecticide	Permethrin	39.15	default_median	56.44	TGA	17.29	0.020
DUPONT Steward EC Insecticide	Indoxacarb	39.15	default_median	72.69	TGA	33.54	0.030
Envidor 2 SC Miticide	Spirodiclofen	5.71	default_median	5.1	TGA	-0.61	-0.004

Additional information and questions

- DPR web site
 - www.cdpr.ca.gov
 - “Quick Links” tab
 - Click on “VOCs”
- Contact
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