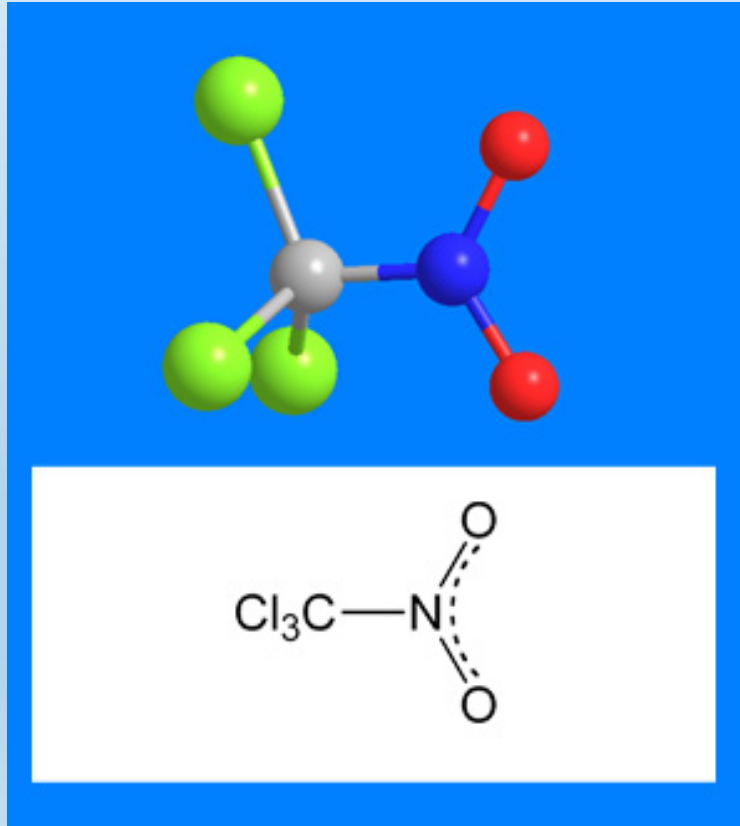


Ventura County Specific Field Fumigation Conditions

Chloropicrin and Chloropicrin Containing Products



Outline

- **Chloropicrin**

- Quick Background and Facts

- **New Chloropicrin Conditions Announced by DPR**

- Larger Buffer Zones
- Buffer Zones -Methyl Bromide and Chloropicrin
- Minimum Buffer Zones
- Limiting Acreage 40/60
- Notice of Intent Requirements
- Notification
- Fumigation Time Restrictions
- Buffer Zone Credits Allowed

- **Ventura County Approved TIF Tarps for Buffer Zone Credits / Chloropicrin**

- Interim TIF Tarp List Ventura County
- Micro Sprinklers “Sprinklers in Place”



Fumigating glasshouses with chloropicrin using an injection rig mounted on a Ransomes MG6 tractor 1960.

Background

- Chloropicrin, or trichloronitromethane, is a dense, pale yellow liquid that decomposes when heated to $\geq 112\text{ }^{\circ}\text{C}$. Its property as a lachrymator prompted Germany to use it as a tear gas against the Allied forces during World War I—one of the first uses of a chemical weapon.
- In 1848, Scottish chemist J. Stenhouse prepared chloropicrin by treating picric acid with sodium hypochlorite. Nitro groups were the only parts of the picric acid molecule to be used in chloropicrin, but the “picrin” name stuck. Today, chloropicrin is manufactured by the reaction between nitromethane and sodium hypochlorite.

Chloropicrin Quick Facts:



- In 2012 chloropicrin was used on about 67,000 acres in California
- The Golden State has more than 9 million acres of irrigated land for farming according to the California Department of Conservation

Chloropicrin Use Ventura County

- 2012 Chloropicrin

- 1,889,235 LBS
- 9,607 Acres

- 2013 Chloropicrin

- 1,532,282 LBS
- 7,926 Acres

- 2014 Chloropicrin

- 1,764,243 LBS
- 8,441 Acres

- 2012 Methyl Bromide (Combination)

- 652,598 LBS
- 2,373 Acres

- 2013 Methyl Bromide (Combination)

- 393,486 LBS
- 1,251 Acres

- 2014 Methyl Bromide (Combination)

- 561,645 LBS
- 2,036 Acres

New Chloropicrin Conditions Announced by DPR

- **Larger buffer zones**
- Buffer Zones (BZ) for chloropicrin have been developed by DPR which are often larger than current labels. Use DPR's BZ look-up tables (appendix K) in combination with the label to determine the most restrictive buffer zone distances at:

http://www.cdpr.ca.gov/docs/enforce/compend/vol_3/append_k.pdf

New Chloropicrin Conditions Announced by DPR

- **Buffer Zone Credits**
- Buffer zone reduction credits are allowed for approved tarp usage only. In contrast, label buffer zone reduction credits are not allowed for symmetry application systems, post-application water treatments, potassium thiosulfate, soil organic matter or clay content, or soil temperature.

New Chloropicrin Conditions Announced by DPR

- **Buffer Zones for Methyl Bromide and Chloropicrin Combination**
- For products containing methyl bromide and chloropicrin, determine the methyl bromide and chloropicrin buffer zones separately. Determine the methyl bromide outer and inner buffer zones distances following the procedure described in “Methyl Bromide Soil Fumigation Buffer Zone Determination” at:

http://www.cdpr.ca.gov/docs/emon/methbrom/buffer_determination.pdf

Determine the chloropicrin buffer zone using the appropriate label or DPR buffer zone table. These determinations will result in three possible scenarios for buffer zone restrictions:

Scenario 1:

If:	Then:
the chloropicrin buffer zone is smaller than both the methyl bromide inner and outer buffer zones...	only the methyl bromide inner and outer buffer zone distances and permit conditions apply

Scenario 2:

If:	Then:
<p>the chloropicrin buffer zone is larger than the methyl bromide inner buffer zone, but smaller than the methyl bromide outer buffer zone...</p>	<p>there are two buffer zones – a chloropicrin buffer zone and a methyl bromide outer buffer zone. The chloropicrin buffer zone distance also functions as the methyl bromide inner buffer zone distance. Both the chloropicrin buffer zone and methyl bromide inner buffer zone restrictions apply. All of the methyl bromide outer buffer zone restrictions also apply</p>

Scenario 3:

If:

the chloropicrin buffer zone is larger than the outer methyl bromide buffer zone...

Then:

there are two buffer zones – a chloropicrin buffer zone and a methyl bromide inner buffer zone. All of the methyl bromide inner buffer zone restrictions apply. The chloropicrin buffer zone distance also functions as the methyl bromide outer buffer zone distance. Both the chloropicrin buffer zone and methyl bromide outer buffer zone restrictions apply, except, no persons are allowed within the buffer zone except to perform fumigation-handling activities or transit by vehicle or bicycle

Minimum buffer zone distance:

Tarps that qualify for a reduction credit of 60%	Tarps that do <u>not</u> qualify for a reduction credit of 60%		Untarped applications
	Application block Less than or equal to 6 acres	Application block Greater than 6 acres, up to 40 acres	
25 feet	60 feet	100 feet	100 feet

New Chloropicrin Conditions Announced by DPR

- DPR Notice of Intent Requirements:
 - at least 48 hours before the scheduled application
- Agricultural Commissioner's Office
 - at **least 3 business days** prior to the start of the fumigation
 - applicator must obtain written approval of the NOI from the Agricultural Commissioner's Office
 - If the fumigation does not begin within 12 hours of the scheduled start time, a new NOI must be submitted and approved

3 Business Days-NOI's

- 2014- May through October - 401 field fumigation NOI's submitted
- Re-submittals or amendments
- 2-3 inspectors managing the process/evaluating NOI's

Emergency Preparedness and Response Measures (EPRM)

- If *Response Information for Neighbors* is chosen, it shall be recorded on the Notification Log (form VCAC-2015-2) and included with the NOI.
- Acceptable Methods
 - United States Postal Service
 - hand deliver
 - door hangers
 - notifying homes which may be vacant

All notifications shall be in English and Spanish

New Chloropicrin Conditions Announced by DPR

- **Fumigation time restrictions – change from proposal**
- Labels have no restrictions on fumigation time
- All other factors being equal, higher air concentrations occur at night due to inversions and more stable atmosphere
- To help avoid peak flux at night for non-TIF and untarped fumigations
- Applications must start no sooner than 1 hr after sunrise
- Applications must end no later than 3 hrs before sunset
- TIF fumigations have no time restrictions

New Chloropicrin Conditions Announced by DPR

- **Maximum acreage**
- Non-TIF/untarped: 40 ac
- County List -TIF: **60 ac** – change from proposal

New Chloropicrin Conditions Announced by DPR

- **Buffer zone distances: reduction credits**
- Labels reduce buffer distances up to 80% using 11 possible “credits” for conditions and practices with lower emissions
- DPR recommends 1 credit: 60% credit for TIF tarps
- Tarps assigned 60% credit require EPA and DPR approval

Volatile Organic Compound Emission's (V.O.C.'s)

- 2012 May through October
 - V.O.C.'s emission's total for Ventura County 826,904 LBS
 - 87.8 % of total allowance
 - Allowance = 942,000 LBS
- 2014 May through October
 - V.O.C.'s emission's 324,913 LBS
 - 34.3% of total allowance
 - Allowance= 948,000 LBS

County approved TIF Tarps for Chloropicrin

60% Buffer zone reduction

AEP-one, clear, EVOH barrier, 1.0 mil	Raven TIF VaporSafe™ ≥ 1 mil
Berry EVOH-High Barrier, black, 1.25 mil	TRM Manufacturing Weather-all Power Film HB 125, custom, ≥ 1.25 mil
Berry EVOH-Supreme Barrier, black, 1.25 mil* (Not approved for use with MBr)	TRM Manufacturing Weather-all Power Film HB 125, clear, ≥ 1.25 mil
Berry Plastics TOTAL BLOCKADE TIF, white/black, 1.25 mil	TRM Manufacturing Weather-all Power Film HB 125, black, ≥ 1.25 mil
Berry Plastics TOTAL BLOCKADE TIF, white, 1.25 mil	TRM Manufacturing Weather-all Power Film HB 125, white, ≥ 1.25 mil
Berry Plastics TOTAL BLOCKADE TIF, green, 1.25 mil	TRM Manufacturing Weather-all Power Film HB 125, green, ≥ 1.25 mil
Berry Plastics TOTAL BLOCKADE TIF, brown, 1.25 mil	TRM Manufacturing Weather-all Power Film HB 125, brown, ≥ 1.25 mil
Berry Plastics TOTAL BLOCKADE TIF, black, 1.25 mil	TRM Manufacturing Weather-all Power Film HB 125, black/white, ≥ 1.25 mil
Berry Plastics TOTAL BLOCKADE TIF, silver/black, 1.25 mil	TRM Manufacturing Weather-all Power Film HB 125, black/silver, ≥ 1.25 mil
Guardian TIF ≥ 1.1 mil, embossed	TRM Manufacturing Weather-all Power Film HB 125, black/clear/black, ≥ 1.25 mil

Sprinklers in Place

- Meeting held on March 4th 2015 discussing micro sprinklers
 - Discussed odor suppression through the use of micro sprinklers
 - Grower's are using micro sprinklers more with drought situation
 - Agricultural Commissioner- Henry Gonzales- confident in our TIF list and combination micro sprinklers for odor suppression
 - The requirement of "Sprinklers in Place" – same as past years
- Outcome:

Micro Sprinklers (if used with county approved TIF tarp list) MEET requirements of "sprinklers in place" for odor suppression

Thank You!

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