

Appendix J

1,3-Dichloropropene (Field Soil Fumigation) Recommended Permit Conditions and Regulations Guidance

Overview

Introduction These recommended permit conditions and regulations guidance apply to the use of pesticide products containing 1,3-Dichloropropene (1,3-D) when applied by either mechanical soil injection or drip application systems to fields used for the production of agricultural crops.

Local conditions County agricultural commissioners (CACs) can develop more restrictive conditions based on local conditions.

Combination applications Any application of either: (1) a product that includes 1,3-D and another fumigant; or (2) simultaneous applications of 1,3-D and another fumigant are subject to all applicable recommended permit conditions for each fumigant ingredient.

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Section J.1

Background on Use Limitations

**Annual use
limit for each
township**

DPR limits the 1,3-D used annually in a township to a fixed maximum number of adjusted total pounds (ATP).

Adjusted Total Pounds (ATP) is the total quantity of 1,3-D active ingredient applied during an application, adjusted by an Application Factor (AF). The AF is a numerical value, set by DPR in Table 2, of the relative amount of 1,3-D potentially present in the air near treated fields based on geographic location, month, and application method. The higher the AF value, the greater the proportion of the applied 1,3-D that may escape into the air.

The Court in *Vasquez v. CDPR* (2017) required DPR to temporarily maintain, as an interim measure to address potential cancer risks to bystanders from the use of 1,3-D, the annual township cap of a maximum of 136,000 ATP until additional formal rulemaking is complete. Thus, for all townships in California the use limit is 136,000 ATP per calendar year.

The 1,3-D registrant, Salt Lake Holding, LLC, is a subsidiary of Dow Chemical Company (Dow). Dow or its contractor is responsible for tracking, reporting, and ensuring township use limits are observed. The annual township use limit is fixed and cannot be exceeded (i.e., cannot “bank” and roll over unused allotted ATP for later use).

Section J.2

Conditions for All Application Methods

Notice of intent (NOI) The permittee must provide the CAC with a Dow- or Dow contractor-approved recommendation before the NOI is accepted and the application allowed.

In addition to the information required in 3 CCR section 6434, the following information must be included in the NOI:

1. Starting ATP balance available in the township prior to the proposed application
2. Application depth and type, including 4-digit field fumigation method (FFM) code (Table 2)
3. The total gallons (TG) of the pesticide formulation
4. The pounds per gallon (lbs./gal) of 1,3-D formulation
5. The percent by weight of a.i., expressed as a decimal (0.XX)
6. The total pounds (TP) of 1,3-D a.i. applied
7. The application factor (AF) appropriate for the proposed application from Table 2
8. The adjusted total pounds (ATP) for the proposed application

The NOI will be denied if the proposed application ATP exceeds the available use limit balance in a township.

1,3-D use reporting 3 CCR section 6626(g)(1) requires 1,3-D use reports to be submitted electronically in a manner specified by the commissioner. Commissioners should require use reports to be submitted using the system of the Dow contractor that tracks and reports the township cap.

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Conditions for All Application Methods, Continued

When requirements differ

These conditions are in addition to any requirements found on 1,3-D pesticide product labeling and requirements found in Title 3, California Code of Regulations. In the event of a conflict between those requirements and these permit conditions, the strictest requirement must be followed.

Entry into the application block

Entry into the application block (including early entry that would otherwise be permitted by the Worker Protection Standard or 3 CCR section 6770) by any person, other than a government official mandated to regulate pesticide use or a properly trained and equipped handler who is performing a handling task permitted by the product labeling, is prohibited from the start of the application until seven (7) days after the application is complete. This prohibition applies to all applications, including all tarp types and untarped applications.

Tarp perforation and removal

Tarps that do not meet the requirements for any percentage reduction in buffer zone distance mentioned on 1,3-D/chloropicrin labels, such as standard polyethylene tarps, may be perforated and/or removed according to fumigant labeling directions.

Totally impermeable film (TIF) tarps approved by DPR for 1,3-D according to 3 CCR section 6448.1 must not be perforated until a minimum of 10 days (240 hours) have elapsed after the application is complete, and must not be removed until a minimum of one (1) day (24 hours) after perforation, unless a weather condition exists that necessitates early tarp perforation or removal as specified by the fumigant label.

Time of year restrictions

The Court in *Vasquez v. CDPH* (2017) required DPR to temporarily maintain, as an interim measure to address potential cancer risks to bystanders from the use of 1,3-D the prohibition on December applications until formal rulemaking is complete. Thus, all 1,3-D applications are prohibited during December.

Section J.3

Guidance for Regulations

Example setbacks for overlapping applications

The following is an example for determining setbacks for overlapping applications as specified in 3 CCR section 6448(c).

Field 1 Application Block: Fumigation method 1206 (Table 1, Field Fumigation Requirements document), untarped, 18-inch injection

- 10 acres
- 300 lbs./ac application rate
- Fumigation starts on October 31 at 7:00 am and ends at 11:00 am
- 200 ft setback (Table 3a)

Field 2 Application Block: Fumigation method 1224 (Table 1, Field Fumigation Requirements document), untarped, 24-inch injection

- 5 acres
- 332 lbs./ac application rate
- Fumigation starts on November 2, 8:00 am
- 100 ft setback (Table 5b, Field Fumigation Requirements document)

The applications for Blocks 1 and 2 overlap if they are separated by 300 ft (200 ft + 100 ft) or less AND the fumigation for Block 2 starts on November 1 at 11:00 pm (October 31, 11:00 am + 36 hrs.) or earlier.

If Blocks 1 and 2 overlap, the setback distance from occupied structures for both blocks are 500 ft, determined from:

- 15 acres from Block 1 + Block 2 combined
- 332 lbs./ac from Block 2, higher than Block 1
- Setback from Table 3a, Field Fumigation Requirements document (Block 1), larger than Table 5b, Field Fumigation Requirements document (Block 2)

If all overlapping application blocks use the same fumigation method and the same application rate, such as when a large field is broken up and fumigated sequentially over several days, the setback distance is determined using the combined acreage.

If a NOI for a 1,3-D application scheduled for a later date overlaps with a previous application, the NOI must be denied if the combined acreage exceeds that specified by the setback table or the earlier application cannot accommodate the changes caused by the later application (i.e., the combined acreage cannot comply with the setback distance and maximum acreage specified by the setback table).

Continued on next page

Guidance for Regulations, Continued

Approved tarpaulins

The List of Approved Totally Impermeable Film (TIF) Tarpaulins is available at https://www.cdpr.ca.gov/docs/emon/pubs/tac/tac_regs.htm

Soil moisture requirements

3 CCR section 6448.2(b) specifies that an application block must have a soil moisture of at least 50 percent of field capacity at a depth of three to nine inches below the surface when the fumigation occurs, except for drip applications. “1,3-Dichloropropene Field Fumigation Requirements, est. January 1, 2024,” provides three options to check soil moisture requirements. Option 1 (Irrigation) is the easiest to implement but should only be used for very dry soils. Option 2 (Feel and Appearance) is most similar to the current label soil moisture method but has some subjectivity associated with determining soil moisture level based on an evaluation of soil texture. Option 3 (Soil Moisture Sensor) is more accurate than Option 1 and Option 2 but is the most complex, expensive, and time consuming.

The CAC has discretion to require the use of a specific soil moisture option based on local conditions.

CACs can consult with their DPR Regional Office for soil moisture training information and availability of a soil moisture sensor specified by Option 3.

The CAC should consider requiring recordkeeping for soil moisture as part of permit conditions until the U.S. Environmental Protection Agency finalizes the draft label changes for 1,3-D products that require fumigation management plans (FMPs), including recordkeeping for soil moisture.

Field Fumigation Methods

3 CCR section 6448.2(d) specifies that 1,3-D fumigations must be made using only the methods specified in “1,3-Dichloropropene Field Fumigation Requirements, est. January 1, 2024,” and it specifies several new methods with new field fumigation method (FFM) codes. Methods not specified are no longer allowed (FFM code 1290).

3 CCR section 6448.2(d) and “1,3-Dichloropropene Field Fumigation Requirements, est. January 1, 2024” also revise the volatile organic compound (VOC) designation of some methods. Some methods have changed from high VOC emission to low-VOC emission or vice versa. This changes which fumigation methods can be used within the San Joaquin Valley, Southeast Desert, or Ventura ozone nonattainment areas between May 1 and October 31. See Table 1 for details.

Section J.4

Tables

Table 1. 1,3-Dichloropropene (With or Without Chloropicrin) Field Fumigation Methods Allowed, by Geographic Area

Note: Restrictions on fumigation methods are in effect May 1 through October 31 in certain geographic areas (see table). From November through April, any label method may be used anywhere in California. (Regulations and permit conditions that already restricted the use of fumigants still apply.)

1,3-Dichloropropene			Methods Allowed From May 1 Through October 31, by Geographic Area		
Method name	Regulation Section (3 CCR)	Field Fumigation Method Code	NAAAs: Sacramento Metro & South Coast	NAAAs: Southeast Desert, San Joaquin Valley & Ventura	Outside NAAAs
	6448.2				
Nontarpaulin/Shallow/Broadcast or Bed	(d)(1)	1201	✓		✓
Tarpaulin/Shallow/Broadcast	(d)(2)	1202	✓		✓
Tarpaulin/Shallow/Bed	(d)(2)	1203	✓		✓
Nontarpaulin/Shallow/Broadcast or Bed/Three water treatment	(d)(3)	1204	✓	✓	✓
Tarpaulin/Shallow/Bed/Three Water Treatments	(d)(4)	1205	✓		✓
Nontarpaulin/Deep/Broadcast	(d)(5)	1206	✓	✓	✓
Tarpaulin/Deep/Broadcast	(d)(6)	1207	✓	✓	✓
Tarpaulin/Deep/Bed	(d)(6)	1208	✓	✓	✓
Chemigation (Drip System)/Tarpaulin	(d)(7)	1209	✓		✓
Nontarpaulin/Deep/Strip	(d)(5)	1210	✓	✓	✓
Nontarpaulin/Deep/GPS targeted	(d)(5)	1211	✓	✓	✓
Nontarpaulin/24 inches Deep/Broadcast	(d)(5)	1224	✓	✓	✓
Tarpaulin/24 inches Deep/Broadcast	(d)(5)	1225	✓	✓	✓
Nontarpaulin/24 inches Deep/strip	(d)(5)	1226	✓	✓	✓
Nontarpaulin/Deep24 inches /GPS targeted	(d)(5)	1227	✓	✓	✓
Nontarpaulin/Tree-Hole	Interim Method	1230	✓	✓	✓
Tarpaulin/Shallow/Broadcast – with tarp eligible for 60% credit	(d)(2)	1242	✓	✓	✓
Tarpaulin/Shallow/Bed -- with tarp eligible for 60% credit	(d)(2)	1243	✓	✓	✓
Tarpaulin/Shallow/Bed/Three Water Treatments – with tarp eligible for 60%	(d)(4)	1245	✓	✓	✓
Tarpaulin/Deep/Broadcast – with tarp eligible for 60% credit	(d)(6)	1247	✓	✓	✓

Tarpaulin/Deep/Bed – with tarp eligible for 60% credit	(d)(6)	1248	✓	✓	✓
40% TIF tarp/18 inches deep/ broadcast	(d)(5)	1250	✓	✓	✓
Chemigation (Drip System)/Tarpaulin - with tarp eligible for 60% credit	(d)(7)	1259	✓	✓	✓
40% TIF tarp/24 inches deep/ broadcast	(d)(5)	1264	✓	✓	✓
Other label method		1290			

Abbreviations: NAA: nonattainment area; 3 CCR: Title 3, California Code of Regulations

For more information, including a map of the NAAs, go to www.cdpr.ca.gov, click on “A-Z Index,” then “VOC regulations.”

Tables, Continued

Table 2. Determining the Application Factor (AF). See 1,3-Dichloropropene Field Fumigations, est. January 1, 2024 document for descriptions and requirements of the field fumigation methods.

Field Fumigation Method (FFM)	FFM Code	Inland*		Coastal*	
		Nov/Jan/Feb	Mar-Oct	Nov/Jan/Feb	Mar-Oct
Nontarp/shallow/broadcast or bed	1201	2.93	1.40	2.42	1.78
Tarp/shallow/broadcast	1202	2.93	1.40	2.42	1.78
Tarp/shallow/bed	1203	2.93	1.40	2.42	1.78
Nontarp/shallow/broadcast or bed/3 water treatments	1204	2.93	1.40	2.42	1.78
Tarp/shallow/bed/3 water treatments	1205	2.93	1.40	2.42	1.78
Nontarp/18 inches deep/broadcast	1206	1.73	0.83	1.42	1.04
Tarp/18 inches deep/broadcast	1207	1.73	0.83	1.42	1.04
Tarp/18 inches deep/bed	1208	1.73	0.83	1.42	1.04
Chemigation (drip system)/tarp	1209	2.15	1.02	1.74	1.21
Nontarp/18 inches deep/strip	1210	1.73	0.83	1.42	1.04
Nontarp/18 inches deep/GPS targeted	1211	1.73	0.83	1.42	1.04
Nontarp/24 inches deep/broadcast	1224	1.00	0.48	0.82	0.61
Tarp/24 inches deep/broadcast	1225	1.00	0.48	0.82	0.61
Nontarp/24 inches deep/strip	1226	1.00	0.48	0.82	0.61
Nontarp/24 inches deep/GPS targeted	1227	1.00	0.48	0.82	0.61
Nontarp/Tree-Hole	1230	0.46	0.21	0.37	0.24
Totally Impermeable Film (TIF) tarp/shallow/broadcast	1242	0.46	0.21	0.37	0.24
TIF tarp/shallow/bed	1243	0.76	0.36	0.62	0.45
TIF tarp/shallow/bed/3 water treatments	1245	0.76	0.36	0.62	0.45
TIF tarp/deep/broadcast	1247	0.46	0.21	0.37	0.24
TIF tarp/deep/bed	1248	0.76	0.36	0.62	0.45
TIF tarp/deep/strip	1249	0.46	0.21	0.37	0.24
40% TIF tarp/18 inches deep/broadcast	1250	1.16	0.56	0.95	0.70
Chemigation (drip)/TIF tarp	1259	0.76	0.36	0.62	0.45
40% TIF tarp/24 inches deep/broadcast	1264	0.71	0.34	0.58	0.43
Other label method	1290	Prohibited			

*The designations of Inland and Coastal Counties are consistent with the 1,3-D regulations for setbacks and chloropicrin labeling for buffer zones.

Inland Counties: Alameda, Amador, Alpine, Butte, Calaveras, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Imperial, Inyo, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Mono, Napa, Nevada, Placer, Plumas, Riverside, Sacramento, San Benito, San Bernardino, San Joaquin, Santa Clara, Shasta, Sierra, Siskiyou, Solano, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, Yuba.

Coastal Counties: Del Norte, Humboldt, Los Angeles, Marin, Mendocino, Monterey, Orange, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Cruz, Sonoma, Ventura.

Section J.5

Interim Recommended Permit Conditions for the Nontarpaulin Tree-hole Fumigation Method

Background Effective on September 3, 2024, DPR granted interim approval of this fumigation method for three years. DPR must pursue rulemaking to include this new method in regulation prior to the expiration of the interim approval. These permit conditions expire on the effective date of the regulation amendment adopting this method **or** three years from the effective date above, whichever is earlier.

Method description This method applies to applications using a closed system application tube followed by soil compaction to close the tube channel. Other individual tree-hole fumigations with 1,3- Dichloropropene (1,3-D) are prohibited.

- Conditions**
- The application rate must not exceed the maximum allowed by the product label or two pounds of 1,3-D active ingredient per hole, whichever is less.
 - The number of tree holes fumigated during a calendar year must not exceed 166 holes in any acre.
 - The distance or spacing between fumigated tree holes must be at least 15 feet. Exception: If two or more adjacent tree holes are to be fumigated as a group and the spacing is less than 15 feet, at least 24 hours must elapse from the end of the fumigation of one tree hole to the start of fumigation of the adjacent tree hole.
 - The tree-hole site must be prepared by backhoeing to break up restrictive soil layers that may retard fumigant movement. The backhoe site must be dug in the dimensions of at least 10 by 10 by 10 feet. The hole must then be backfilled. Soil moisture must meet the requirements specified in 3 CCR subsection 6448.2(b), after backfilling.
 - 1,3-D must be applied using a closed-system application tube(s). A “closed system application tube” incorporates 1,3-D into soil, but does not allow any 1,3-D contact with the air throughout the entire fumigation. Nitrogen must be used to purge the system before application tube is lifted out of the ground at any time. After the application tube(s) are removed, the soil must be rolled or compacted to close the channel(s) created by the application tube(s).
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Interim Recommended Permit Conditions for the Nontarpaulin Tree-hole Fumigation Method, Continued

Conditions,
(continued)

- The setback to occupied structures for each tree-hole fumigated is 100 feet for seven days. These tree-hole fumigations are exempted from the overlapping applications requirements. Follow the other applicable requirements specified in 3 CCR section 6448.
 - The Notice of Intent (NOI) and pesticide use report must identify this tree-hole fumigation method using FFM code 1230.
 - The NOI must indicate the number of tree holes that will be fumigated per acre and include a map of the site indicating the location where the tree hole(s) fumigation will take place.
 - This method cannot be used with products containing a combination of 1,3-D and chloropicrin.
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