N. METHYL BROMIDE TARPED POTTING SOIL FUMIGATION

Definitions

Application includes treatment and aeration; it is complete when the tarped potting soil has been aerated.

Application rate, in pounds per cubic yard, is equal to the amount of methyl bromide in the formulated product.

Application site means the location where the fumigations take place. A property operator may have more than one location where potting soil fumigations take place. If these locations are not contiguous, then there would be two application sites. The application site designation may also be used in the restricted materials permit and for pesticide use reporting purposes.

Buffer zone is the area that must be maintained between the treated potting soil and those places where people conduct certain activities or practices. These activities and practices may not occur in the buffer zone for prescribed periods of time. For potting soil fumigations there are three types of buffer zones to be considered:

1**. Resident Buffer Zone** is the area surrounding the treated potting soil, during fumigation and aeration, outside of which people may "dwell." The Resident Buffer Zone is in effect until aeration is complete. See the definition: dwell.

2. **Worker Buffer Zone** is the area surrounding the treated potting soil, during fumigation and aeration, outside of which people may "work or occupy." The Worker Buffer Zone is in effect until aeration is complete, except for the first four hours of aeration (see Aeration Buffer Zone). See the definition: work or occupy.

3. **Aeration Buffer Zone** is the area surrounding the treated potting soil that begins when the tarps are cut or removed and lasts for the first four hours of aeration. This buffer zone is the same size as the Resident Buffer Zone and applies to all activities.

Dwell means that a person is able to or will occupy a structure for any or all parts of a 24-hour period. This includes, but is not limited to: homes, hospitals, convalescent homes, boarding schools, hotels, and apartment complexes.

Frequency of applications refers to the interval of time elapsed from the beginning of the application of methyl bromide to one potting soil pile to the beginning of the application of methyl bromide to another potting soil pile.

Gas confining means a structure that has a non-porous roof and walls and all doors, side panels, and vents remain closed.

Pesticide Handler includes employees involved in fumigation, aeration activities, tarp repair, and tarp removal prior to the completion of aeration.

Potting soil is any combination of soil and/or soil-less media that is used for growing plants.

Work or occupy means that a person is able to or will be at a place for eight hours or less. This includes, but is not limited to: fields, offices, warehouses, stores, malls, factories, greenhouses, packing sheds, workshops, and recreational parks.

Worker Safety Requirements

Restricted Entry and Warning Sign Posting Requirements

1. The restricted entry interval begins with the introduction of the fumigant and ends 48 hours after the tarp is removed and measurements show 5 ppm (parts per million) or less methyl bromide in the air at the surface of the treated potting soil pile. The duration of the restricted entry interval depends upon whether the tarp is removed or cut prior to removal.

2. As a condition of the permit, warning signs shall be posted on/near the treated pile for the duration of the restricted entry interval.

Pesticide Handler and Field Worker Requirements

1. The employer must maintain use records for all employees involved in application, aeration, tarp repair, and tarp removal activities. The record shall identify the person, work activity(ies), date(s), duration of handling, U.S. Environmental Protection Agency Registration Number, and brand name of the methyl bromide product handled.

2. The employer must maintain records of the air monitoring used to determine completeness of aeration. These records must include sampling method, date, time, sample location(s), and the level, in parts per million (ppm).

3. The employer must maintain these records at a central location for two years and make them available to the county agricultural commissioner upon request for review.

4. Employers shall ensure that all employees who are pesticide handlers are trained and protected. Pesticide handlers include all persons whose work activities involve application, tarp repair, and tarp removal.

Tarpaulin Repair

1. The tarpaulin is considered “application equipment” covered by 3 CCR section 6742(a) and is required to be kept in good repair by the applicator for the duration of the fumigation. For the purpose of this section, fumigation ends when the tarps are removed or cut for aeration. The person or business performing methyl bromide fumigations is responsible for making any necessary repairs.

2. Tarpaulin repair must be evaluated on a job-by-job basis. The decision should be based on hazard to the public or workers, size of the damaged area, timing of damage, and ease of repair.

3. The methyl bromide label requires all persons wear a Self-Contained Breathing Apparatus if entering an area where the concentration of methyl bromide is unknown or exceeds 5 ppm. This includes making repairs to the tarp that covers a potting soil pile under fumigation.

Workers in Adjacent Sites

1. The property operator and/or pest control operator must be aware of adjacent sites where worker activity is likely until aeration is complete. They must ensure that the adjacent property operators are advised, prior to the fumigation, on how to comply with the Worker Buffer Zone and the Aeration Buffer Zone.

2. The property operator and/or pest control operator may give notice to adjoining property operators orally or in writing.

3. If entry occurs as the result of a failure to be aware of worker activity and subsequent failure to advise adjacent property operators to keep workers out, the operator of the property fumigated and the person performing pest control are in violation of the methyl bromide permit conditions.

Application Requirements

1. All potting soil fumigations shall be conducted outdoors or in an enclosure that is not gas-confining.

2. A maximum of 400 cubic yards of potting soil, in one or more tarped piles, will be allowed to be fumigated and aerated at one location. All treated potting soil must be completely aerated before another potting soil fumigation may begin at the same location.

3. Maximum pile height is two feet tall. Potting soil may be fumigated in containers or raised structures as long as the depth of the potting soil does not exceed two feet.

4. For multiple potting soil fumigation:

    a. Piles can be considered "isolated" when they are separated by at least 1,300 feet.

    b. Piles can also be consider isolated when they are separated by at least 48 hours from the introduction and tarpaulin cutting of one pile to the introduction and tarpaulin cutting of another pile. For example, multiple piles can be considered isolated:

        i. When introduction takes place at 48-hour intervals (e.g., introduction of Pile 1 on October 1 and introduction of Pile 2 on October 3).
        ii. When tarpaulin cutting takes place at 48-hour intervals (e.g., tarpaulin cutting of Pile 1 on October 1 and tarpaulin cutting of Pile 2 on October 3).
        iii. When introduction and tarpaulin cutting occur alternately at 48-hour intervals (e.g., tarpaulin cutting of Pile 1 on October 1 and introduction of Pile 2 on October 3).

    c. For isolated piles, calculate buffer zones independently for each pile.

5. For non-isolated piles, calculate buffer zones by aggregating the volume of the piles. This is the same procedure for calculating buffer zones for isolated and non-isolated field fumigations.

6. A maximum of 0.6 pounds of methyl bromide (active ingredient) per cubic yard is allowed.

7. The methyl bromide must be injected through perforated tubing that is anchored in place within the tarped potting soil piles. Follow the pesticide registrant's recommendation for the type of application tubing to be used.

8. The tarp shall be sealed to the ground with sand or water snakes.

9. All fittings, connections, and valves between the supply tank and the tarpaulin must be checked for methyl bromide leaks prior to fumigation. If cylinders are replaced during the fumigation process, the connections and valves must be checked for leaks prior to continuing the job.

10. Only the tarpaulins listed on the approved manufacturers list are to be used. The tarp used during the fumigation must meet or exceed the following standards for a "high barrier" tarp: a permeability factor of less than eight milliliters methyl bromide per hour per square meter per 1,000 ppm of methyl bromide under the tarp at 30 degrees Celsius. See the list of high barrier tarp suppliers. Polyethylene tarp of six-mil thickness or greater meets these criteria.

11. No other types of methyl bromide applications may be conducted at the same application site for 48 hours before, or 24 hours following, a tarped potting soil fumigation.

12. When a school property, Kindergarten through 12th grade, is within 1/4 mile (1320 feet) of a fumigation block, the injection must be completed 36 hours prior to the start of a school session. School sessions are those times when students are attending scheduled classes.

Buffer Zone Determination

13. A buffer zone is the area surrounding a fumigated potting soil pile outside of which certain activities or practices are allowed. The buffer zones are in effect until the potting soil is completely aerated. The size of the buffer zone will be determined by the proposed size of the potting soil pile, in cubic yards, and the application rate. The buffer zone distance may have to be modified for each pile due to the proximity to occupied structures, distance to adjacent workers, and proximity to other potting soil fumigations.

14. The buffer zone is partitioned into the Resident Buffer Zone, the Worker Buffer Zone, and the Aeration Buffer Zone. The size of the Resident Buffer Zone is based on the assumption that a person may "dwell" at a place for 24 hours. The size of the Worker Buffer Zone is based on the assumption that people work or recreate at a place for eight hours or less. The Aeration Buffer Zone becomes effective at the time the tarp is removed or cut and lasts for four hours. It is the same size as the Resident Buffer Zone and is required due to the high levels of methyl bromide released when the tarp is removed or cut.

15. Transit through the Worker Buffer Zone by the permittee's employees is limited to infrequent and unavoidable trips. Routine or repeated transit through this buffer zone is prohibited.

16. Transit through (except on a public road), working in, or dwelling in the Aeration Buffer Zone is prohibited for the entire four hours. No one is allowed in this area until aeration is complete unless they are trained pesticide handlers facilitating aeration.

17. The buffer zones begin at the edges of the treated piles and extend in all directions regardless of buildings or property boundaries.

18. Procedures:

    a. Determine the application rate. Use the highest application rate if more than one pile will be fumigated. If the application rate is not identical to the values listed in Table 1, then round up to the next highest value.

    b. Determine the volume. If there will be more than one pile, use the total volume of all piles fumigated at the same time as at the same application site. If the volume is not identical to the values listed in Table 1, then round up to the next highest value.

    c. Determine the Resident Buffer Zone by applying the highest application rate and total volume to Table 1.

    d. Determine the Worker Buffer Zone by dividing the application rate by three. Apply the adjusted application rate and total volume to Table 1. If the adjusted application rate is not identical to the values listed in Table 1, then round up to the next highest value.

e. The Aeration Buffer Zone is the same size as the Resident Buffer Zone and must be vacated by all people for the first four hours of aeration, starting when the tarp is first cut or removed.

19. Resident Buffer Zone Duration:
    a. To determine if the proposed Resident Buffer Zone includes places where people are living or staying, measure the distance between the edge of the tarped pile and the physical structure, not the property line associated with that structure.

    b. People are not allowed to "dwell" within the Resident Buffer Zone. Residences within the buffer zone must be vacated while the buffer zone is in effect. This time period starts when the fumigation begins and ends when aeration is complete, at least 48 hours after tarp removal.

    c. If the resident(s) are unable to vacate the building(s), then the property operator must decrease either the cubic yards to be treated or the rate of methyl bromide to be used to reduce the size of the buffer zone.

    d. This requirement applies to all persons, including the property operator.

20. Worker Buffer Zone Duration:

    a. People will not be allowed to work in or occupy the Worker Buffer Zone. This time period starts when the fumigation begins and ends when aeration is complete, at least 48 hours after tarp removal. The beginning point of measurement shall be the tarped edge of the fumigated pile.

    b. If there are occupied commercial buildings or workers within the proposed Worker Buffer Zone and the work sites cannot be vacated, then the application must either be rescheduled to coincide with the worker's day-off or the cubic yards to be treated and/or application rate must be decreased to reduce the size of the buffer zone.

21. Aeration Buffer Zone Size and Duration:

    a. The Aeration Buffer Zone is the same size as the Resident Buffer Zone.

    b. The Aeration Buffer Zone is in effect for the first four hours of aeration, which begins when the tarp is removed or cut. No one is allowed to work in, reside in, or transit this area for any length of time. This is required due to the large amounts of methyl bromide that can be released when the tarp is first disturbed.

Notice of Intent Modification

22. The county agricultural commissioner must receive a Notice of Intent at least 96 hours prior to commencement of a methyl bromide fumigation of tarped potting soil piles. The Notice of Intent must indicate the day and hour the application is to commence.

23. Unless a waiver is granted by the county agricultural commissioner, fumigation of a tarped potting soil pile must not commence sooner than the starting time on the Notice of Intent. Nor must the fumigation commence later than 12 hours after the intended starting time submitted on the Notice of Intent. If the potting soil fumigation does not commence within this time frame, a new Notice of Intent must be

submitted, but no 24-hour waiting period is required unless notified by the county agricultural commissioner.

24. For multiple potting soil piles to be fumigated sequentially, one Notice of Intent with a "schedule" to be submitted in lieu of one Notice of Intent for each potting soil pile to be fumigated. The schedule must include a map and must specify the date and time each potting soil pile is intended to be fumigated.

25. The 96-hour Notice of Intent waiting period may be waived if the county agricultural commissioner determines:

    a. Effective pest control cannot be attained otherwise, or

    b. Approaching climatic conditions require the application to take place sooner, or

    c. Ninety-six hours are not necessary to adequately evaluate the intended application.

26. The reasons for granting each waiver must be documented and a record maintained by the county agricultural commissioner.

27. The operator of the property to be treated and the person performing pest control (if they are different) must be aware of adjacent sites where there is a reasonable possibility of work activity occurring while the Worker Buffer Zone and Aeration Buffer Zone are in effect, and must ensure that operators of those adjacent properties are advised to keep workers out of those areas during that period of time.

Tarpaulin Removal

28. Aeration shall be commenced during daylight hours, not at night.

29. A Self-Contained Breathing Apparatus shall be used to commence aeration, which includes removing or cutting the tarp, unless this activity can be performed from outside of the aeration zone.

30. The tarp may be removed no sooner than three days (72 hours) after the potting soil pile was fumigated.

31. If the tarps are cut, rather than removed completely, they must be allowed to aerate for a minimum of 24 hours following cutting. Workers may then be allowed to remove the cut tarps without using a Self-Contained Breathing Apparatus.

32. After the tarps have been removed, regardless of method, the soil pile must be allowed to aerate for an additional two days (48 hours) before workers may disturb the pile. At that time, if spot measurement shows less than 5 ppm, the soil can be handled by the workers. If the measurement is above 5 ppm, aeration shall continue until the level of methyl bromide is below 5 ppm.

    The measurement(s) should be taken as close as possible to the surface of the treated potting soil pile.

List of Manufacturers of High Barrier Tarpaulins

33. The current list of approved tarpaulins is available at DPR's web site at: http://www.cdpr.ca.gov/docs/emon/methbrom/tarps.pdf

Buffer Zones (feet) for Potting Soil Fumigations

TABLE 1. Buffer Zones (feet) for Potting Soil Fumigations

Volume		Application Rate*					
cubic yards	cubic feet	0.1 lbs/yd^3 0.37 lbs/100 ft^3 3.7 lbs/1000 ft^3	0.2 lbs/yd^3 0.74 lbs/100 ft^3 7.4 lbs/1000 ft^3	0.3 lbs/yd^3 1.1 lbs/100 ft^3 11 lbs/1000 ft^3	0.4 lbs/yd^3 1.5 lbs/100 ft^3 15 lbs/1000 ft^3	0.5 lbs/yd^3 1.9 lbs/100 ft^3 19 lbs/1000 ft^3	0.6 lbs/yd^3 2.2 lbs/100 ft^3 22 lbs/1000 ft^3
20	540	30	30	30	30	30	30
30	810	30	30	30	30	30	40
40	1080	30	30	30	30	40	60
60	1620	30	30	30	45	70	95
80	2160	30	30	35	65	95	120
100	2700	30	30	45	85	115	140
150	4050	30	30	75	120	155	190
200	5400	30	40	100	150	190	230
250	6750	30	50	120	175	225	265
300	8100	30	65	140	200	250	300
350	9450	35	80	155	220	280	330
400	10800	40	100	175	245	300	355

* Application Rate Units:
lbs/yd^3 = pounds per cubic yard
lbs/100 ft^3 = pounds per 100 cubic feet
lbs/1000 ft^3 = pounds per 1000 cubic feet