



Welcome to Module 10, Compliance and Enforcement.

## Compliance and Enforcement

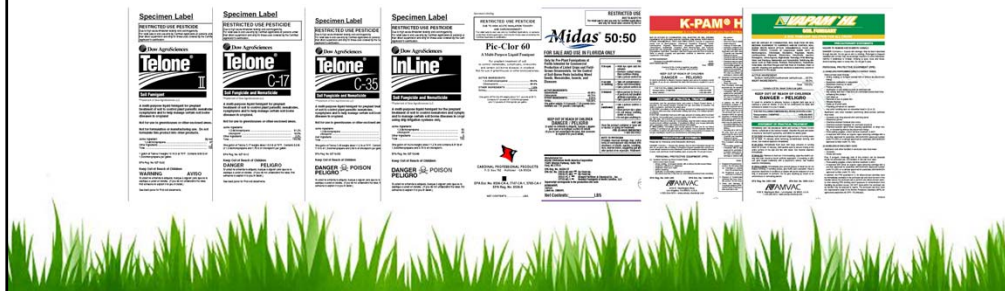
- **PreApplication**
- **During Application:**
  - Off-site Direct observation
  - On-Site Observation and Interview
- **Post Application:**
  - Compliance with:
    - Certifications and Licensing
    - Fumigant Label
    - Handler Training / PPE Equipment Requirements and EPA Worker Protection Standards
    - Buffer zones requirements
    - Emergency Preparedness and Response Requirements & Buffer distances
    - Required Good Application Practices “GAP’s ”
    - Compliance with and Review / Inspection of FMP, PAS
    - First Responder & Community Outreach and Education Programs
- **Checklisting Tools**
  - Information Inspectors need to plan and implement compliance assurance activities in the field during field inspections

The content of this module is designed to serve as a training tool for local, state, and federal regulatory personnel charged with pesticide use inspection, enforcement, and label compliance assurance. This training information should also serve to illustrate to farm owners, operators, and certified applicators the importance of complying with Fumigant product labeling and the ways and means which regulatory personnel will monitor for and enforce new fumigant product labeling requirements.

In general, Module 10 will discuss monitoring protocols, field observations, and inspections of fumigant use records conducted prior to, during, and post application of fumigants applied in the field. Post application compliance assurance activities principally involve on-site inspection of Site and Day Specific Fumigant Management plans and post application summaries, including certification and licensing requirements, fumigant label requirements, handler training, PPE requirements, Buffer zones and Compliance with mandatory Good Application Practices, and conclude with a few comments regarding Checklisting Tools inspectors need to plan and implement compliance assurance activities in the field during field inspections.

## New Fumigant Labels

- With reregistration comes many new label changes:
  - New rules
  - Restrictions
  - Regulations
  - Applicator Requirements



With reregistration of the soil fumigants, many, many new changes to fumigant product labels must now be considered by applicators. Previous labels, typically composed of 8 to 9 pages are now represented by 40 to 50 pages booklets describing many new rules, restrictions, regulations, and applicator requirements. It is not possible to highlight all of the important label changes in this training module, so compliance and inspection personnel are encouraged to personally review the individual labels and Inspector checklists available from state and federal agency.

The extensiveness and complexity of changes made to the new labels will require additional time and study to understand the breadth of required change and new level of responsibility on the part of applicators to comply with new product label requirements. Inspectors are encouraged to carefully review the new product labels and MSDS sheets. Although this module has summarized many of the new label rules and restrictions, inspectors must also decide which restrictions published within the new product labels are important to confirm compliance and or to regulate.

## Compliance and Enforcement – Pre-application

- Review the fumigant labels
- Recognize warning statements and precautionary measures listed within the label before field entry
- Understand symptoms of exposure and PPE requirements of the various fumigants such as:

| PPE         |                |
|-------------|----------------|
| Respirators | Eye protection |
| Boots       | Gloves         |
| Coveralls   | Aprons         |

As just indicated, Prior to entering any field where a fumigant has been or is being applied, compliance and inspection officers are strongly encouraged to review the individual fumigant labels and from that review, recognize any and all warning statements and precautionary measures listed on the fumigant label before actual entry into the field occurs. Inspectors should understand typical symptoms of fumigant exposure and personal protective equipment requirements of the various fumigants. These could include, depending upon the particular fumigant and method of application, half or full face respirators, goggles or chemical resistant eyeglasses, rubber boots and gloves, coveralls, and for mixing loading operations, a chemical resistant apron.

## Compliance and Enforcement

### Understanding Symptoms of Fumigant Exposure - Oral, Dermal, Inhalation

#### **Methyl Bromide:**

- Respiratory distress (may be 4-12 hours after exposure)
- Eye irritation, muscle weakness, dizziness
- nausea, vomiting, headache, tremor and slurred speech
- Skin burning, itching, blisters or necrosis
- Potential occupational carcinogen

#### **Chloropicrin:**

- Tearing
- Irritation to eyes, skin, upper respiratory system
- Cough
- Pulmonary edema (fluid in the lungs)
- Nausea, vomiting

Exposure to fumigants can occur via a number of different pathways. These include oral or ingestion through the mouth, dermal or via skin contact, or via inhalation or through the lungs. In general, exposure by inhalation is the most common form of reported exposure to fumigants. Respiratory distress by inhalation may not be immediate, it may be expressed some 4 to 12 hours after exposure as respiratory distress with fluid buildup in lungs, and coughing. Other symptoms include nausea, vomiting, skin burning, itching, blistering of skin and muscle weakness. Tremors and slurred speech are also common symptoms of fumigant exposure.

## Compliance and Enforcement

Direct Observations of On-Farm Environmental Conditions,  
Handler PPE, and Soil Fumigation Activity

### **Safety Rules Observed Before Field Entry**

- Receive Training and Be Prepared
- Know your Safety Procedures and Follow Standard Operating Procedures
- When required, wear Personal Protective Equipment (*PPE*)
- Be Observant to Surroundings
- Use Common Sense

Given the potentials for fumigant exposure, Certain safety rules and precautions should be observed prior to field entry. Inspectors should, after training, arrive prepared, with an understanding of appropriate safety protocol and standard operating procedure. While in the field, Inspectors must use common sense and be observant of environmental surroundings, including aspects of soil, workers in the field, and speed and direction of vehicular traffic. Inspectors should be prepared when required or appropriate to wear personal protective equipment to be compliant with the fumigant label or as a result of their own environmental monitoring and sensory perceptions.

## DIFFERENT FUMIGANTS – DIFFERENT PPE REQUIREMENTS

Table 1. **Table 1.** Worker protection standard (WPS) and personal protective equipment (PPE) requirements for various soil fumigants according to new product labeling requirements within the State of Florida when handlers are not performing tasks with liquid contact potential.

| Type of PPE   | Telone II®  | Telone InLine® C35®                                   | Pic Clor 60®  | Vapam®  | K-PAM®  | Methyl Iodide   | PIC   | Methyl Bromide PIC 50 / 50                                 |
|---|---|---|---|---|---|---|---|--|
| Long Sleeve Shirt<br>Long pants<br>Shoes & Socks          | X   | X   | X   | X   | X   | X   | X   | X  |
| Chemical Resistant® Headgear                              | -   | -   | -   | -   | -   | -   | -   | -  |
| Special Clothing  | -   | -   | -   | -   | -   | -   | -   | -  |
| Chemical Resistant® Footwear                              | -   | -   | -   | -   | -   | -   | -   | -  |
| Eye Protection <sup>2</sup>                               | -   | -   | -   | -   | -   | Safety Glasses  | -   | -  |
| Chemical Resistant® Gloves                                | -   | -   | -   | -   | -   | -   | -   | -  |
| Respirator <sup>1</sup><br>(Cartridge Numbers)            | If sensory triggered<br>Full Face<br>TC 23C<br>TC 14G | If sensory triggered<br>Full Face<br>TC 23C<br>TC 14G | If sensory triggered<br>Full Face<br>TC 23C<br>TC 14G | If sensory triggered<br>Full Face<br>TC 23C<br>TC 14G | If sensory triggered<br>Full Face<br>TC 23C<br>TC 14G | Must Wear<br>Half Face<br>3M-60928<br>or TC 23C<br>If sensory triggered<br>Replace with Full face | If sensory triggered<br>Full Face<br>TC 14G<br>TC 23C | <sup>4</sup> If sensory triggered<br>Full Face 3M<br>60928 |
| ReEntry <sup>2</sup><br>Interval(REI)                     | 5 days  | 5 days  | 5 days  | 5 days  | 5 days  | 5 days  | 5 days  | 5 days   |
| Planting Interval <sup>3</sup><br>(Days Post Application) | Minimum<br>7 Days                                     | Minimum<br>7 days-C35<br>14days-In-Line               | 7   | 14 -21  | 14-21   | 10-21<br>depending on soil<br>moisture, texture,<br>plastic mulch used                            | 14 days   | 14 days  |

<sup>1</sup>Consult EPA Chemical Resistance category for selection of appropriate personal protection equipment and materials.

<sup>1</sup> Respirator requirements, unless specifically required, are triggered by sensory irritation being experienced by handler(s) in the field. Air concentrations of these fumigants will determine when respirators must be worn and or removed in the field, or whether field operations must cease and workers must exit the field and buffer zone until safe levels are restored. All respirator cartridges must be replaced daily or when odor or irritation from the product becomes apparent, whichever is sooner. All handlers who must wear an air purifying respirator must be appropriately certified as OSHA trained, fit tested, and medically qualified to safely wear a respirator.  
<sup>2</sup> ReEntry period is the time after application when field entry by any person other than correctly trained and PPE equipped is prohibited. Times after application is complete if tarps are not perforated and not removed before 14 after application. Consult the individual product labels for other ReEntry Interval restrictions which may be required when soil is tarped or untrapped, and after tarp perforation / removal procedures.  
<sup>3</sup> Planting Interval is the period in which planting must be delayed so as to allow fumigant to dissipate from soil after application to avoid plant injury.  
<sup>4</sup> Field application of formulations of methyl bromide chloropicrin with greater than or equal to 80 percent total content methyl bromide mandatorily require use of a respirator and hourly air monitoring of fumigant concentrations in the breathing zone of field workers.

From summary of the following table of personal protective equipment requirements for commercially available fumigants, it should be clear that different fumigants have different personal protective equipment requirements. When handlers in the field are not performing tasks with direct contact activity, chemical resistant boots, gloves, coveralls are not required for any of the fumigants. Some fumigants such as methyl iodide (marketed as Midas 98/2 and Midas 50/50) require handlers to wear chemically resistant safety glasses with brow and side protection, as well as a half face respirator. So unless specifically required by the label, as for methyl iodide, mandatory use of a respirator by a handler in the field is not required unless triggered by sensory irritation being experienced by any handler in the field. If sensory irritation is experienced by any complaining handler in the field during fumigation activity, then a full face respirator with appropriate cartridge is required for use of all fumigants. Inspectors should consult the labels of all of the fumigant products being used in the field to determine which fumigant has the most stringent requirement for specific PPE, and whether these PPE requirements were being met within the field of application.

The above table also shows that the reentry interval, the period in which unauthorized or PPE unprotected handlers must not be allowed to enter the fumigated field, is 5 days. The planting interval, the minimum number of days in which planting must be delayed following fumigant application varies between 7 to 21 days, depending upon soil temperature, moisture, and frequency of rainfall events.



## Personal Protective Equipment

### Checklist for Respirators, SCBA Device, Handler Training

#### ***Is the Handler :***

- *Fit-Tested*
- *Medically Certified*
- *OSHA Trained*
- *On an annual basis*

#### ***To wear the respirator:***

- *Is a SCBA Device available for use On-Site ?*
- *Are a Minimum of 2 Handlers trained and Certified for Respirator Use On-Site ?*

As the previous slide illustrates, some fumigant products required the use of air purifying respirators by applicators and handlers in the field as part of the personal protective equipment requirement for use of the fumigant in the field. In addition, EPA has determined, and the new labels require that respiratory protection is needed if fumigant concentrations in air reach a certain level that causes sensory irritation to any worker in the field. In this situation where sensory irritation is reported by a handler in the field, the certified applicator can decide to cease application operations and exit the field, or demand handlers wear respirators. The certified applicator cannot ask handlers to wear a respirator unless the handler has been trained and fit-tested according to OSHA standard, and is medically certified to ensure the handlers physical ability to safely wear the respirator. Each year, employers must ensure that any handler who uses a respirator is annually recertified, and if respirators are to be used in the field, the certified applicator must inform handlers of this, as well as the health effects, early signs of exposure, and respiratory protection and PPE requirements for products applied in both the application block in which they are working and the other application blocks in close proximity where buffer zones exist.

In general, and as part of the Compliance checklist for Personal Protective Equipment, inspectors who observe respirators in use should determine if Handlers were fit tested, medically certified, and OSHA trained. Were a minimum of 2 handlers trained and certified for respirator use on-site during fumigation. Finally, was a air rescue devise such as a self contained breathing apparatus SCBA devise on-site and ready for use in the event of an emergency.



## Compliance and Enforcement

### Upon Field Entry/During Application:

- Be Cautious
- Be Observant of Surroundings
- Be Respectful of Growers Time and of Field Laborers



Upon arriving in the field during a fumigant application, Inspectors should be cautious and observant of their surroundings. Tractors and supply vehicles are moving back and forth through the field, and dangers exist. If contact is made with the certified applicator within the field, provide your business card with name and contact information and announce the purpose and intent of your visit. Be courteous and respectful of the growers time and that of the field laborers. Delays cost the applicator and or farming operation time and money in labor and tractor fuel. Be succinct in your information requests and try not to delay or disrupt the fumigation operation for to long or unnecessarily.

## Direct Observations of On-Farm Soil Fumigation Activity



**Required  
Field  
Signage**

- "DANGER/PELIGRO,"
- "Area under fumigation, DO NOT ENTER/NO ENTRE,"
- "[Name of fumigant] Fumigant in USE,"
- the date and time of fumigation,
- the date and time entry prohibition is lifted
- Name of the product, and
- Name, address, and telephone number of the certified applicator in charge of the fumigation.

Fumigant Warning Sign must bear skull & crossbones



As inspectors enter fields, they should be aware of their surrounding and cognizant of required field signage. Two different signs are required, a buffer zone and a Treated area sign, each of which must contain specific language and information. In this example, the fumigant Warning / Treated area sign must bear the Skull and Crossbones symbol and Danger / Peligro Area under fumigation, the sign must also contain the name of the Fumigant in use, the date and time of fumigation, the date and time the reentry prohibition period will expire, the name of the product and the name, address, and telephone number of the certified applicator in charge of the fumigation. The treated area sign must be placed prior to the start of fumigation and removed within 3 days of the date in which the reentry prohibition expires.

The treated area posted signs must remain posted for no less than the duration of the entry restricted period after treatment.

Treated area signs must be removed within 3 days after the end of the entry-restricted period.

Signs must meet the general standards in the WPS for placement, text size, and location (40 CFR §170.120).

## Direct Observations of On-Farm Soil Fumigation Activity

### Required Field Signage

- **All usual points of entry**
  - roadways, sidewalks, paths, bike trails
- **WPS standard for Text size, and specific language**
- **Posted before beginning**
- **Minimum of 48 hour BZ duration**
- **Signs removed within 3 days after BZ expires**

**METAM SODIUM**

**ABC METAM PRODUCT**

**Fumigant BUFFER ZONE**

Certified applicator in charge of the fumigation:

Jane Doe

703-300-1000

**DO NOT ENTER/NO ENTRE**



The buffer zone signs must also be posted and contain specific language and information. For example, the buffer zone sign must include the - Do not walk symbol, "DO NOT ENTER /NO ENTRE. It must include the name of the fumigant, and contact information for the certified applicator in charge of the fumigation. The signs must be placed at all usual points of entry and along likely routes of approach from areas where people not under the land operator's control may approach the buffer zone. Some examples of these possible points of entry include, but are not limited to, roadways, sidewalks, walking paths, and bike trails. Signs must be posted before the application begins and remain posted until the 48 hour buffer zone period has expired. The buffer zone sign must be removed within 3 days of the date in which the reentry prohibition expires (usually 5 days).

Signs must be posted before the application begins and remain posted until the buffer zone period has expired.

## Compliance and Enforcement

### Direct Observations of On-Farm Environmental Conditions, Handler PPE, and Soil Fumigation Activity

#### Personal Protective Equipment (PPE)

*Note Handler without long pants & long sleeve shirt*



- *Were handlers compliant with WPS standard of Long sleeve shirts and Long Pants?*
- *Were any handlers wearing respirators?*
- *Were dry soil conditions apparent ?*



*Dust Clouds suggesting inappropriately Dry Soils*



*Handlers with respirators and a short sleeve shirts*

Compliance and Inspection personnel who make visits to the farm while soil fumigation activities are being conducted should be observant of surroundings and field operations and activities, including direct observations of on-farm environmental conditions, handler PPE and other soil fumigation activities. Some of the examples illustrated within this slide include the recognition of potentially dry soil conditions within the field illustrated by the dust clouds enveloping the tillage equipment, the lack of long sleeve shirts and long pants by some handlers in the field, or mentally recording the fact that other handlers, without exception were in respirators but not necessarily WPS equipped with long sleeve shirts. The presence of specific PPE being worn by handlers in the field should provide guidance to the inspector to what PPE he or she might want to consider prior to enter the immediate fumigation area.

With this in mind, and as part of the Compliance Checklists, Inspectors may want to take note of whether handlers were WPS compliant by wearing long sleeve shirts and pants, whether respirators were being worn, and whether dry soil conditions were apparent in the field at the time of application.

## Compliance and Enforcement

### Upon Field Entry / During Application:

- Was There Evidence of Tarp Loss or Damage and of Timely Scheduled Repair?



Within the Fumigant Management Plan, a written tarp plan must be included which describes a specific timetable and procedures for checking tarps for damage, tears, and other problems. The FMP must also describe plans for determining when and how repairs to tarps will be made, and by whom. Applicators must define a minimum time following soil injection of the fumigant that the tarp will be repaired, including the minimum size of tarp damage that will be repaired.

With this in mind and as part of the Compliance Checklist for tarp repair, inspectors **should be observant of their surroundings** and should record whether there was any evidence of tarp loss or damage, and how quickly repair was made to the damage mulch.



## Compliance and Enforcement

### Pesticide Storage

Different fumigants, different requirements *(lock and Key not required for all)*

| STORAGE REQUIREMENT   | Fumigant  |
|---|---|
| Store in tightly closed original container in cool place away from dwellings. Prolonged exposure of containers to direct sun should be avoided.   | <b>Telone II</b><br><b>Telone Inline</b><br><b>Telone C35</b> |
| Do not use or store near heat or open flame. Store in tightly closed original container in cool place away from dwellings.  | <b>Pic Clor 60</b><br><b>Pic Clor 60EC</b>                    |
| Store upright, in cool, dry, well-ventilated locked area. Post as a pesticide area.   | <b>Chloropicrin</b>   |
| Do not expose to extreme temperature. Do not stack more than 4 drums high.  | <b>Metam Sodium</b><br><b>Metam Potassium</b>                 |
| Store in a dry, cool, well-ventilated area under lock and key. When appropriate to prevent tipping, store cylinders upright, secured to a rack or wall. Post as a pesticide storage area. | <b>Midas 98/2</b><br><b>Midas 50/50</b>                       |
| Store upright in a secure, well ventilated location. Post as pesticide storage area. Store cylinders upright, secured to a rack or wall to prevent tipping.                               | <b>Methyl Bromide / Chloropicrin</b>                          |

- Were fumigant cylinders stored in a cool place, away from dwellings?
- Were fumigant cylinders stored under lock and key and posted as a pesticide storage area?



Whether On-site prior to, during, or post fumigant application, inspectors should also **Be Observant of their Surroundings** regarding fumigant label requirement for proper pesticide storage. The table illustrated here defines current label language describing specific storage requirement for most of the different soil fumigants currently available for preplant use in commercial agriculture. It should be obvious after review of the table presented, that different fumigants have different storage requirement, and lock and key storage is not required for fumigants others than Midas (i.e., methyl iodide) or Chloropicrin, and formulations of methyl bromide. . As part of the compliance checklist for Pesticide Storage, inspectors must determine if fumigant cylinders or containers were stored in a cool, dry , well ventilated area away from dwellings and extreme temperatures. When appropriate, other considerations such as whether fumigant cylinders were stored under lock and key, and in some cases whether the locked containment area was posted with required signage as a pesticide storage area.



## Good Application Practices (GAPs)



*A nice, firm, moist, compact bed to minimize emissions, improve efficacy, utilize buffer zone reducing credit*



**Mandatory Good Agricultural Practices:**

*EPA has determined that Certified Applicators must record and report soil conditions present at the time of application. EPA has also set minimum standards of temperature and moisture which must be present before fumigation can proceed.*

As part of the new mandatory requirements for Good Application Practices,

## Good Agricultural Practices – Mandatory Components

### Weather Conditions

- Prior to fumigation the weather forecast for the day of application and the 48-hr period following must be checked to ensure favorable fumigating conditions will exist.
- Fumigants must not be applied if ground level winds are less than **2mph** at the start of application or are not forecasted to reach **5 mph** during the application and not greater than **10 mph**.

### Soil Moisture

- The soil shall contain at the time of application enough moisture at 9 inches below the surface or it must be adjusted.
- Soil moisture must either be measured at **≥ 70%** with an instrument (e.g., tensiometer), or meet the specific criteria defined in the USDA Feel and appearance method for estimating soil moisture as appropriate for the soil texture.

### Soil Temperature

- The maximum soil temperature at the depth of injection shall not exceed **90° F** at the beginning of the application.
- If air temperatures have been above **100° F** for more than three hours in any of the three days prior to application, then soil temperature shall be measured and recorded in the FMP.

### Soil Preparation

- The area to be fumigated shall be tilled to a depth of 5 to 8 inches.
- Crop residue and field trash must be properly managed.
- Any trash pulled by the shanks to the ends of the field must be covered with tarp, or soil, depending on application method, before making the turn for the next pass.

As indicate in Module 5 or this training series, Good agricultural Practices are mandatory requirement for uses of all fumigants. Certified applicators must check the weather forecasts for the day of application and 48 hr period which follows to ensure favorable conditions will exist before commencing with any fumigation activity. Specific wind conditions, soil moisture and temperature must be present and above threshold levels before fumigations can proceed. The soil must be tilled and if any crop residue or field trash is pulled by shanks to the ends of the field, it must be covered with soil or plastic mulch before the Fumigation tractor makes its next pass through the field.

With regard to environmental conditions present within the field, inspectors must be observant of their surroundings, noting whether any wind conditions existed, whether adequate soil moisture conditions were evident or whether clouds of dusts appeared to emanate off the tractors as they proceeded back and forth through the field.

## Compliance & enforcement

### Direct Observations of On-Farm Environmental Conditions, Handler PPE, and Soil Fumigation Activity

1. Describe Soil moisture conditions (wet, dry)? Dust Clouds present?
2. Has field been recently disked?
3. Are wind speeds of **2mph** or more present?
4. What type of Fumigation Equipment was used? (shank or drip)
5. Was handler PPE being worn? (boots, gloves, coveralls, glasses)
6. Are odors detectable? Do they constitute sensory irritation?
7. Is SCBA gear on site? Potable water?
8. Any crop residue/field trash present in significant quantity in the field?
9. Is field trash being covered with soil/plastic at row ends?
10. Were any unrepaired tears or perforations observed in the mulch film?
11. Is the fumigation occurring close to housing?
12. Are buffer zone signs present? Do not enter Treated area signs?



In general, and as part of the Compliance checklist for new Mandatory Good Agricultural Practices, inspectors must be prepared to describe soil moisture conditions as wet or dry and whether dust cloud surrounding tractors was evident in the field

Whether the Field had been recently disked ?

Did the inspector believe wind speeds of 2mph or more were present in the field at the time of application?

Was it a Shank or drip application of the fumigant

Were handlers required to wear any particular PPE?

Were fumigant odors detectable within the application block? Did they constitute sensory irritation to the inspector?

Is SCBA gear available on site in the case of an emergency? Is there 5 gallons of Potable Water on Site?

Is there any crop residue or field trash present in significant quantity in the field?

Was field trash being covered with soil or plastic at the row ends?

Were any unrepaired tears or perforations observed in the mulch film?

Is the fumigation occurring close to housing?

In 2011, inspectors should determine whether Buffer Zone signs are Present?

As well as Do Not Enter Fumigant Treated Area Signs .

## Compliance & assurance Checklist



### Compliance with Mandatory Good Agricultural Practices (GAP's)

- Were Required GAP's (weather, soil, moisture, temp, wind speed 2mph)observed?
- Was soil temperature at start of fumigation and depth of injection measured?
- Did measured soil temperature exceed 90° F?
- Was soil moisture measured at a depth of 9 inches within 48 hour prior to fumigation?
- Was trash pulled to the ends of rows immediately covered with soil or plastic mulch?

As part of the compliance and inspector checklist for Good Agricultural Practices, inspectors in the field should be ready to confirm from observation or from review of the Fumigant management plan whether required GAP's such as favorable weather, soil moisture and temperature conditions, and wind speeds of more than 2mph were observed during fumigation. Were soil temperatures at the start of fumigation and at the depth of injection measured? Did measured soil temperatures exceed 90 F? Was soil moisture measured at a depth of 9 inches within 48 hours prior to fumigation? And finally, Was any trash pulled to the ends of rows immediately covered with soil or plastic mulch?

## Requests to View or Obtain Copies of the FMP from the Certified Applicator During or Post fumigant Application



Inspectors in the field at the time of fumigation can request to view or to obtain copy of the FMP from the farm owner or certified applicator.

In addition to viewing and recording observations and environmental conditions, Inspectors in the field at the time of fumigation can request to view or to obtain copy of the Fumigant Management Plan from the farm owner or certified applicator who must be present in the field at the time fumigation begins until the time fumigation ends within the application block.



## Site Specific Fumigant Management Plan

Effective 2010

A stack of multiple copies of a 'Site Specific Fumigant Management Plan' form, with the top one clearly visible. The form is divided into several sections with various fields for text entry. A large orange diagonal watermark reads 'A single day's fumigation activity'.

Currently

### Composed of 18 Sections:

- Certified Applicator Info
- General Site Information
- General Application Information
- Tarps / Tarp Repair methods
- Soil Conditions
- Weather Conditions
- Buffer Zone Calculations
- PPE for Handlers
- Emergency Response Plan
- Posting Signs
- Site Specific Response & Management
- Notice to State Tribal Agencies
- Communication with Handlers
- Detailed Site Map
- Handler Info / Dates of Certification
- Air Monitoring Plan of Buffer Zones
- Handlers w/o Respiratory Protection
- Handlers with Respirator Protection

What is the Fumigant Management plan. As part of Fumigant reregistration and new labeling of soil fumigants, Certified applicators are now required to develop a written site specific FUMIGANT MANGEMENT PLAN for each days fumigation activity. THE fumigant management plan requires the certified applicator to satisfy information requirements for 18 different categories including general information regarding the applicator, the application site, and fumigants involved including the rate, method of application, and whether a tarp will be used and how it will be repaired if damaged during fumigation. It will require the applicator to document soil and weather conditions, buffer zone distances and method of calculation, personal protective equipment requirements.



## Mandatory Training Certifications



- Valid certified pesticide applicator *and* if a commercial applicator, must have the soil and greenhouse fumigation category
- Current product stewardship training certification obtained from registrant or state approved training program @ 3 years
- 2 handlers with additional Worker Protection Training, respirator fit-testing and medical Certifications.
- Certified Applicators delivering Registrant Training Info to Handlers regarding Fumigant safety, worker risks and reporting

Within the FMP, the certified applicator must provide written documentation that the applicator has a valid certified pesticide applicators license. The applicator must also indicate dates of completion for product stewardship training from registrant or state approved training program at least every 3 years. The applicator must show that at least 2 handlers in the field at the time of the fumigation activity have additional worker protection training, respiratory fit testing and medical certifications to wear respirators in the field. Finally, the certified applicator must certify that all handlers in the field have received additional Registrant provided training materials regarding Fumigant safety, worker risks, and reporting.

## Compliance Assurance Checklist

### Certifications and Licensing Requirements

- Does Applicator have a Certified Pesticide applicators license?
- Does Applicator have the Commercial RUP Applicator License with the Soil and Greenhouse Fumigation Category on license ?
- Is applicator current with Registrant soil-fumigant training (every three years)?
- Did Applicator Provide Registrant Product Training to Handlers (annually)?
- Have Handlers received WPS Training? (Date of completion provided?)

In this regard and as part of the compliance and inspector checklist for Mandatory Training Certifications, inspectors should be ready to confirm:

Whether the applicator has a valid certified pesticide applicators license?

Whether he applicator has a [Commercial RUP Applicator License with the Soil and Greenhouse Fumigation Category on license?](#)

Or whether the applicator is current with required Fumigant Product training requirements of every 3 years.

The inspector would be wise to determine whether the applicator provided registrant provided soil fumigation training at least annually and whether handlers have received WPS training and whether the dates for completion of this training are provided for every handler working in the field during fumigation.

## Registrant Provided Fumigant Training Materials for Handlers

Ask to View Training materials. Confirm how and  
When training was provided to handlers.

### The training materials must address:

- (1) What fumigants are and how they work
- (2) Safe application and handling of soil fumigants
- (3) Air monitoring and respiratory protection requirements for handlers
- (4) Early signs and symptoms of exposure
- (5) Appropriate steps to take to mitigate exposures
- (6) what to do in case of an emergency
- (7) How to report incidents



- Training information provided to handlers before performing any handler task
  - Handlers provided this information within the preceding 12 months
- Provided in a manner that the handler can understand and documented in the FMP

EPA has determined that registrants must prepare and disseminate training information and materials for handlers who are working under the supervision of the certified applicator in charge of fumigation. The training materials must address, at minimum, the following elements: (1) what fumigants are and how they work, (2) safe application and handling of soil fumigants, (3) air monitoring and respiratory protection requirements for handlers, (4) early signs and symptoms of exposure, (5) appropriate steps to take to mitigate exposures, (6) what to do in case of an emergency, and (7) how to report incidents. Registrants must provide this training information through channels open to the public (e.g., via a website).

Pesticide labels will require that **applicators supervising fumigations provide this training information to handlers under their supervision before they perform any fumigant handling task, or they must ensure that handlers have been provided the required information within the preceding 12 months. The label will also require that the training information be **provided in a manner that the handler can understand.**** Applicators supervising fumigations must ensure the FMP includes how and when the required training information was provided to the handlers under their supervision.

## Compliance and Enforcement – Buffer Zones

*Areas surrounding the application block, extending outward in all directions from the treated field, a specified distance, where workers or bystanders must be excluded during the buffer zone period, except for people in transit.*

Were buffer distances calculated correctly?

Are any difficult to evacuate sites in close proximity?

Were handlers and bystanders excluded (other than transit from the buffer zone)?

Beginning in 2011, buffer zones will become mandatory requirement for fumigant use. Buffer zones are untreated areas surrounding the application block or fumigant treated field where workers or bystanders must be excluded, except for people in transit, during the 2 day buffer zone period. Buffer zone distances extending out from the perimeter of the treated field will be determined by a number of different factors including the rate and method of fumigant application, how many acres were treated per day, and whether any buffer zone reducing credits such as use of a high barrier, emission reducing plastic mulch plastic was used to cover the soil after fumigant application. Applicators are required to post buffer zone signs at all points of field entry, and other areas where people are most likely to enter including roads and footpaths or trails and at likely routes of approach such as the perimeter of a buffer that faces a housing development. The new fumigant labels require that all treatment areas and buffers be clearly posted with proper signage to ensure handlers entering a treatment area are aware of previous treatments and the existence of buffers.

In this regard and As part of the compliance and inspector checklist for buffer Zones, inspectors should be ready to confirm whether buffer zone distances were calculated correctly, Whether there were any Difficult to Evacuate Sites in close proximity, and whether Handlers and bystanders, other than those in transit, were excluded from entry into the buffer zone.

## Post Application Summary

### Composed of 13 Sections:

1. General Application Information
2. Tarp Damage , Repair, Removal
3. Soil Conditions
4. Weather Conditions
5. Complaints
6. Emergency Response Measures
7. Description of Incidents
8. Elevated Air Concentrations
9. Posting Signs
10. Other
11. When Respirator Protection Not in use: was Sensory Irritation Experienced *(Did you Cease operations or use Respirators)*
12. When Respiratory Protection is in use: *(Provide Direct Instrument Air Monitoring Results)*
13. Signed and Dated

In addition to the Site Specific Fumigant Management Plan, the new fumigant product labels will require certified applicators in charge of each days fumigation activity to complete a post-fumigation, post application summary for that days fumigation activity, describing any deviations from the FMP. The Post-Application Summary which must be signed, dated, and archived by the certified applicator for at least 2 years after application must contain the following components or information sections. These include general applicator and application information, measurements and reports of soil and weather conditions taken to comply with GAPs, The location and results of the air monitoring, and information about any problems such as complaints or incidents that occurred as a result of the fumigation must be recorded in the post-application summary report. The Post application summary must be completed within 30 days of any given days fumigation activity.

# Post Application Summary

|   |  |                |
|---|--|----------------|
| <b>Description of Incidents</b> (check box if section is not applicable <input type="checkbox"/> )          |  | Date and time: |
| Description of emergency procedures followed:   |  |                |
| Additional comments:  |  |                |
| <b>Elevated Air Concentration Levels</b> (check box if section is not applicable <input type="checkbox"/> ) |  |                |
| <input type="checkbox"/> On-site  | Location of elevated air concentration levels: | Date and time: |
| <input type="checkbox"/> Outside buffer zone  |  |                |
| Description of elevated air concentration levels: (provide air monitoring results on next page)             |  |                |
| Description of control measures or emergency procedures followed:   |  |                |
| Description of deviations from FSP (if applicable):   |  |                |
| <b>Posting Signs</b>  |  |                |
| Date of sign removal:   |  |                |
| Description of deviations from FSP (if applicable):   |  |                |
| <b>Other</b>  |  |                |
| Additional comments notes:  |  |                |

## Within 30 days: Describe any deviations from FMP

Were any incidents, complaints, or needs for emergency responses described?

Were elevated air concentrations ever detected?

*If so, describe emergency procedures that were followed.*

Were signs posted and removed in a timely manner?

As part of the Post Application Summary interview and Document review, Inspectors should consider the following checklist. Inspectors should determine whether any incidents, complaints, or needs for emergency response were needed and described within the post application summary report. Were elevated air concentrations ever detected on-site in the field or within the buffer zone? Were any emergency procedures ever needed or described within the PAS. Were buffer zone and treated area signs posted and removed in a timely manner with the fumigant treated area?



# Post Application Summary

| Air Monitoring Results  |                       |  |   |                                       |                   |                 |  |
|---|-----------------------|--|---|---------------------------------------|-------------------|-----------------|--|
| When Respiratory Protection is Not in Use - Sensory Irritation Experienced (check box if action is not applicable ☐)    |                       |  |   |                                       |                   |                 |  |
| Date and Time   | Handler Task/Activity | Handler Location Where Irritation Was Observed | Handling Action   |                                       | Comments          |                 |  |
|   |                       |  | <input type="checkbox"/> Case operations<br><input type="checkbox"/> Respiratory protection |                                       |                   |                 |  |
|   |                       |  | <input type="checkbox"/> Case operations<br><input type="checkbox"/> Respiratory protection |                                       |                   |                 |  |
|   |                       |  | <input type="checkbox"/> Case operations<br><input type="checkbox"/> Respiratory protection |                                       |                   |                 |  |
|   |                       |  | <input type="checkbox"/> Case operations<br><input type="checkbox"/> Respiratory protection |                                       |                   |                 |  |
|   |                       |  | <input type="checkbox"/> Case operations<br><input type="checkbox"/> Respiratory protection |                                       |                   |                 |  |
| When Respiratory Protection is in Use - Direct Read Instrument Air Monitoring (check box if action is not applicable ☐) |                       |  |   |                                       |                   |                 |  |
| Sample Type   | Sample Number         | Sample Date/Time                               | Handler Task/Activity first applicable for structural monitoring                            | Handler Location/ Structure/ Location | Air Concentration | Sampling Method | Comments (e.g., sensory irritation experienced while wearing respirator) |
| <input type="checkbox"/> Area   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Breathing Zone   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Structure  |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Area   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Breathing Zone   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Structure  |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Area   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Breathing Zone   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Structure  |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Area   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Breathing Zone   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Structure  |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Area   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Breathing Zone   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Structure  |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Area   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Breathing Zone   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Structure  |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Area   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Breathing Zone   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Structure  |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Area   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Breathing Zone   |                       |  |   |                                       |                   |                 |  |
| <input type="checkbox"/> Structure  |                       |  |   |                                       |                   |                 |  |

I have verified that this post application summary reflects the actual site conditions during the fumigation and an accurate description of deviations from the FSP (if applicable).

Signature of certified applicator supervising the fumigation \_\_\_\_\_ Date \_\_\_\_\_

## Air Monitoring Results

Was sensory irritation experienced?

*Who, where, when, actions taken, situational comments*

Air monitoring results and were respirators ever in use ?

*Where, date, time, air concentration, sampling method, situational comments*

Was PAS signed and dated?

As part of the Post Application Summary interview and Document review, Inspectors should also determine whether sensory irritation was experience by anyone in the field during the day of fumigation and where and when any actions were taken. Does the certified applicator report any air monitoring results or whether respirators were ever in use by handlers in the field. Finally, Was the Post Application Summary Report signed and dated by the certified applicator responsible for supervising the fumigation?

## Compliance and Enforcement

### *Soil fumigant use inspector checklist*

*More comprehensive  
inspector checklists are  
currently under  
development for state  
and federal regulatory  
agencies*

SOIL FUMIGANT USE INSPECTION (for Application in 2010)

**FUMIGANT INSPECTED**

Name: \_\_\_\_\_ Title: \_\_\_\_\_ (Home Phone) \_\_\_\_\_  
Cell: \_\_\_\_\_ (Cell Phone) \_\_\_\_\_  
Other: \_\_\_\_\_ (Other Phone) \_\_\_\_\_

Fumigator Physical Address: City/Zip Code: \_\_\_\_\_  
Mailing Address: City/Zip Code: \_\_\_\_\_

Phone: \_\_\_\_\_

**APPLICATION INFORMATION**

Name of Applicant: \_\_\_\_\_ (Company Name) \_\_\_\_\_  
Address: \_\_\_\_\_  
City/Zip Code: \_\_\_\_\_  
Phone: \_\_\_\_\_  
EPA Registration Number: \_\_\_\_\_  
EPA Label Number: \_\_\_\_\_  
EPA Label Code: \_\_\_\_\_  
EPA Label Title: \_\_\_\_\_  
EPA Label Description: \_\_\_\_\_  
EPA Label Use: \_\_\_\_\_  
EPA Label Date: \_\_\_\_\_

**APPLICATION INFORMATION**

Name of Applicant: \_\_\_\_\_ (Company Name) \_\_\_\_\_  
Address: \_\_\_\_\_  
City/Zip Code: \_\_\_\_\_  
Phone: \_\_\_\_\_  
EPA Registration Number: \_\_\_\_\_  
EPA Label Number: \_\_\_\_\_  
EPA Label Code: \_\_\_\_\_  
EPA Label Title: \_\_\_\_\_  
EPA Label Description: \_\_\_\_\_  
EPA Label Use: \_\_\_\_\_  
EPA Label Date: \_\_\_\_\_

**Other Information**

Is this application for a fumigant that is registered for use in a restricted use area (RUA)?  
Yes  No

Is this application for a fumigant that is registered for use in a restricted use area (RUA)?  
Yes  No

Page 1 of 6

A significant amount of information has been presented in this module. As indicated in other training modules, EPA has mandated the addition of many new changes to fumigant labels which inspectors must consider to include a variety of new risk mitigation measures in a 2 year stepwise approach. Some of the new label requirements will be implemented in 2010, while others will be required from a second round of new labels which will appear in 2011. In addition, all of the fumigants will undergo reregistration again in 2013, which will again require inspectors and compliance officers to reconsider many new use restrictions and label requirements.

Ensuring that inspectors and compliance officers understand the new label requirements is an important prerequisite which must precede any on-site inspection activity. A variety of different education materials are being developed and will be periodically updated to assist inspectors in this regard, including a more comprehensive checklist, to assist the inspector during on-site visits and facilitate the inspection and compliance process. EPA, in collaboration with State agencies, will be issuing and periodically updating a Soil Fumigant-Use Inspector Checklist to help guide routine inspections of agricultural establishments and used to verify compliance with the new soil fumigant regulations.

## Module 10 Review Questions

### Questions

1. With new regulations, the labels on fumigants are now \_\_\_\_\_.

With new regulations, the labels on fumigants are now \_\_\_\_\_.

longer

shorter

| Correct | Choice  |
|---------|---------|
| X       | longer  |
|         | shorter |

**2. Inspectors must be aware of all aspects of fumigant labels including symptoms of exposure and the required equipment to combat symptoms.**

Inspectors must be aware of all aspects of fumigant labels including symptoms of exposure and the required equipment to combat symptoms.

True

False

| Correct | Choice |
|---------|--------|
| X       | True   |
|         | False  |

3. Which of the following is the most common form of reported exposure to fumigants?

Which of the following is the most common form of reported exposure to fumigants?

- dermal
- mouth
- inhalation
- eyes

| Correct | Choice     |
|---------|------------|
|         | dermal     |
|         | mouth      |
| X       | inhalation |
|         | eyes       |

4. Which of the following are symptoms of exposure to fumigants? (You may select more than one)

Which of the following are symptoms of exposure to fumigants? (You may select more than one)

- nausea
- vomiting
- skin burning
- itching
- slurred speech

| Correct | Choice         |
|---------|----------------|
| X       | nausea         |
| X       | vomiting       |
| X       | skin burning   |
| X       | itching        |
| X       | slurred speech |



5. Certified applicators or farm owners are responsible for providing personal protective equipment for inspectors entering a field where fumigants have been applied.

Certified applicators or farm owners are responsible for providing personal protective equipment for inspectors entering a field where fumigants have been applied.

True

False

| Correct | Choice |
|---------|--------|
|         | True   |
| X       | False  |

6. To wear a respirator, the handler must have been trained and fit-tested according to OSHA standard, and medically certified to ensure the handlers physical ability to safely wear the respirator every \_\_\_\_ year/s.

To wear a respirator, the handler must have been trained and fit-tested according to OSHA standard, and medically certified to ensure the handlers physical ability to safely wear the respirator every \_\_\_\_ year/s.

- 1
- 2
- 3
- 4

| Correct | Choice |
|---------|--------|
| X       | 1      |
|         | 2      |
|         | 3      |
|         | 4      |

7. When respirators are in use, a minimum of \_\_\_\_\_ handler/s must be trained and certified for respirator use on-site during fumigation.

When respirators are in use, a minimum of \_\_\_\_\_ handler/s must be trained and certified for respirator use on-site during fumigation.

- 1
- 2
- 3
- all handlers wearing respirators

| Correct | Choice                           |
|---------|----------------------------------|
|         | 1                                |
| X       | 2                                |
|         | 3                                |
|         | all handlers wearing respirators |

8. The follow pieces of information must be on the required field signage:

Skull and Crossbones symbol and Danger/Peligro Area under fumigation. The sign must also contain the name of the Fumigant in use, the date and time of fumigation, the date and time the reentry prohibition period will expire, the name of the product and the name, address, and telephone number of the certified applicator in charge of the fumigation.

The follow pieces of information must be on the required field signage:  
Skull and Crossbones symbol and Danger/Peligro Area under fumigation. The sign must also contain the name of the Fumigant in use, the date and time of fumigation, the date and time the reentry prohibition period will expire, the name of the product and the name, address, and telephone number of the certified applicator in charge of the fumigation.

True

False

| Correct | Choice |
|---------|--------|
| X       | True   |
|         | False  |

9. Buffer zone signs must be removed within \_\_\_\_ day/s of the date in which the reentry prohibition expires.

Buffer zone signs must be removed within \_\_\_\_ day/s of the date in which the reentry prohibition expires.

- 1
- 2
- 3
- 4

| Correct | Choice |
|---------|--------|
|         | 1      |
|         | 2      |
| X       | 3      |
|         | 4      |

**10. Not wearing long sleeve shirts and pants, not wearing respirators when they are necessary, and dry soil conditions apparent in the field at the time of application are examples of potential violations that can be observed by inspectors.**

Not wearing long sleeve shirts and pants, not wearing respirators when they are necessary, and dry soil conditions apparent in the field at the time of application are examples of potential violations that can be observed by inspectors.

True

False

| Correct | Choice |
|---------|--------|
| X       | True   |
|         | False  |

11. As part of the Compliance Checklist for tarp repair, inspectors should record whether there was any evidence of tarp loss or damage, and how quickly repair was made to the damage mulch.

As part of the Compliance Checklist for tarp repair, inspectors should record whether there was any evidence of tarp loss or damage, and how quickly repair was made to the damage mulch.

True

False

| Correct | Choice |
|---------|--------|
| X       | True   |
|         | False  |

**12. Lock and key storage is required for all fumigants.**

Lock and key storage is required for all fumigants.

True

False

| Correct | Choice |
|---------|--------|
|         | True   |
| X       | False  |



13. EPA has set minimum standards of \_\_\_\_\_ and moisture which must be present before fumigation can proceed.

EPA has set minimum standards of \_\_\_\_\_ and moisture which must be present before fumigation can proceed.

| Choice      |
|-------------|
| temperature |
| temp        |

**14. The maximum wind speed to be able to apply fumigants is:**

The maximum wind speed to be able to apply fumigants is:

- 2mph
- 5mph
- 10mph
- There is no maximum wind speed

| Correct | Choice                         |
|---------|--------------------------------|
|         | 2mph                           |
|         | 5mph                           |
| X       | 10mph                          |
|         | There is no maximum wind speed |

15. The maximum soil temperature at the depth of injection shall not exceed \_\_\_\_\_ .

The maximum soil temperature at the depth of injection shall not exceed \_\_\_\_\_ .

- 80°F
- 85°F
- 90°F
- 95°F

| Correct | Choice |
|---------|--------|
|         | 80°F   |
|         | 85°F   |
| X       | 90°F   |
|         | 95°F   |

16. The area to be fumigated shall be tilled to a depth of \_\_\_\_\_ to 8 inches.

The area to be fumigated shall be tilled to a depth of \_\_\_\_\_ to 8 inches.

- 2
- 3
- 4
- 5

| Correct | Choice |
|---------|--------|
|         | 2      |
|         | 3      |
|         | 4      |
| X       | 5      |

**17. Inspectors will make direct observations of all but the following:**

Inspectors will make direct observations of all but the following:

- Has field been recently disked?
- Are wind speeds of 2mph or more present?
- The certified applicator has a copy of the emergency plan in the field
- Is the fumigation occurring close to housing?

| Correct | Choice   |
|---------|--|
|         | Has field been recently disked?  |
|         | Are wind speeds of 2mph or more present?                               |
| X       | The certified applicator has a copy of the emergency plan in the field |
|         | Is the fumigation occurring close to housing?                          |

18. As part of compliance with Good Agricultural Practices, soil moisture must be measured at a depth of \_\_\_\_ inches within 48 hours prior to fumigation.

As part of compliance with Good Agricultural Practices, soil moisture must be measured at a depth of \_\_\_\_ inches within 48 hours prior to fumigation.

- 2
- 5
- 7
- 9

| Correct | Choice |
|---------|--------|
|         | 2      |
|         | 5      |
|         | 7      |
| X       | 9      |

**19. Inspectors in the field at the time of fumigation do not have the right to request to view or to obtain copy of the FMP from the farm owner or certified applicator without proper paperwork from the EPA.**

Inspectors in the field at the time of fumigation do not have the right to request to view or to obtain copy of the FMP from the farm owner or certified applicator without proper paperwork from the EPA.

True

False

| Correct | Choice |
|---------|--------|
|         | True   |
| X       | False  |

20. Current product stewardship training certification obtained from registrant or state approved training program every \_\_\_\_\_ year/s.

Current product stewardship training certification obtained from registrant or state approved training program every \_\_\_\_\_ year/s.

- 1
- 2
- 3
- 4

| Correct | Choice |
|---------|--------|
|         | 1      |
|         | 2      |
| X       | 3      |
|         | 4      |



21. Which of the following are things that certified applicators must address when training handlers. (You may select more than one response)

Which of the following are things that certified applicators must address when training handlers. (You may select more than one response)

- what fumigants are and how they work
- safe application and handling of soil fumigants
- air monitoring and respiratory protection requirements for handlers
- early signs and symptoms of exposure
- appropriate steps to take to mitigate exposures
- what to do in case of an emergency
- how to report incidents

| Correct | Choice  |
|---------|---|
| X       | what fumigants are and how they work                                |
| X       | safe application and handling of soil fumigants                     |
| X       | air monitoring and respiratory protection requirements for handlers |
| X       | early signs and symptoms of exposure                                |
| X       | appropriate steps to take to mitigate exposures                     |
| X       | what to do in case of an emergency                                  |
| X       | how to report incidents   |

**22. The Post application summary must be completed within \_\_\_\_\_ days of any given days fumigation activity.**

The Post application summary must be completed within \_\_\_\_\_ days of any given days fumigation activity.

| Acceptable numeric values |    |
|---------------------------|----|
| Equal to                  | 30 |

**23. The Post Application Summary Report should be signed and dated by any farm worker or handler who was present for the fumigation.**

The Post Application Summary Report should be signed and dated by any farm worker or handler who was present for the fumigation.

True

False

| Correct | Choice |
|---------|--------|
|         | True   |
| X       | False  |

24. When handlers in the field are not performing tasks with direct contact activity, chemical resistant boots, gloves, coveralls are still required for any of the fumigants.

When handlers in the field are not performing tasks with direct contact activity, chemical resistant boots, gloves, coveralls are still required for any of the fumigants.

True

False

| Correct | Choice |
|---------|--------|
|         | True   |
| X       | False  |