



With 2009 EPA Fumigant Reassessment:

New Grower Responsibilities **Fumigant Management Plans**



Fumigant Users
must prepare a
written site specific
plan before each
day's fumigation
begins.



Welcome to Fumigant Training Module number 8 - Fumigant Management Plans. Based on EPA's ReRegistration of the Soil Fumigants, Fumigant users must now prepare a written, site specific plan before each days fumigation begins. This module will describe this new applicator / landowner responsibility.

Fumigant Management Plans

PURPOSE

To apply a fumigant, EPA (ie., new product labels) now requires an FMP to be completed by a certified applicator or land owner before a fumigant application occurs. The purpose of the FMP is to:

- Reduce potential risks to bystanders as well as handlers by requiring that applicators have carefully planned, in writing, each major element of the days fumigation.
- Provided documentation how the fumigator intends to comply with label requirements, ie., to ensure directions on the product labels will be followed and that the conditions under which each days fumigation occurs will be documented.
- Ensure an appropriate response plan is in place to protect workers and bystanders should an incident occur., eg., make readily available to first responders contact information so as to reduce response times to impacted bystanders and carefully thought out emergency response plans can help ensure appropriate actions are taken in case of unforeseen events.

With the fumigant reregistration process nearing completion, EPA will now demand that the new fumigant labels formally require a *Fumigant Management Plan* to be completed , on a daily basis, by a certified applicator or land owner before a fumigant application occurs in the field. The purpose of the FMP is to:

- Reduce potential risks to bystanders, as well as handlers, by requiring that applicators have carefully planned, in writing, each major element of the days fumigation.
- The purpose of the FMP is also to provide a place to document how the fumigator intends to comply with all of the new fumigant label requirements, ie., to ensure all of the new directions on the product labels will be followed and that the conditions under which each days fumigation occurs will be documented.
- The FMP will also ensure an appropriate response plan is in place to protect workers and bystanders should an incident occur. For example, a document which can be made readily available to first responders, important contact information so as to reduce response times to impacted bystanders. A carefully thought out emergency response plan which is documented within the FMP can help ensure appropriate actions are taken in case of unforeseen events.

EPA 2- Phase Implementation Schedule

Table 2. Implementation Schedule for Soil Fumigant Risk Mitigation Measures

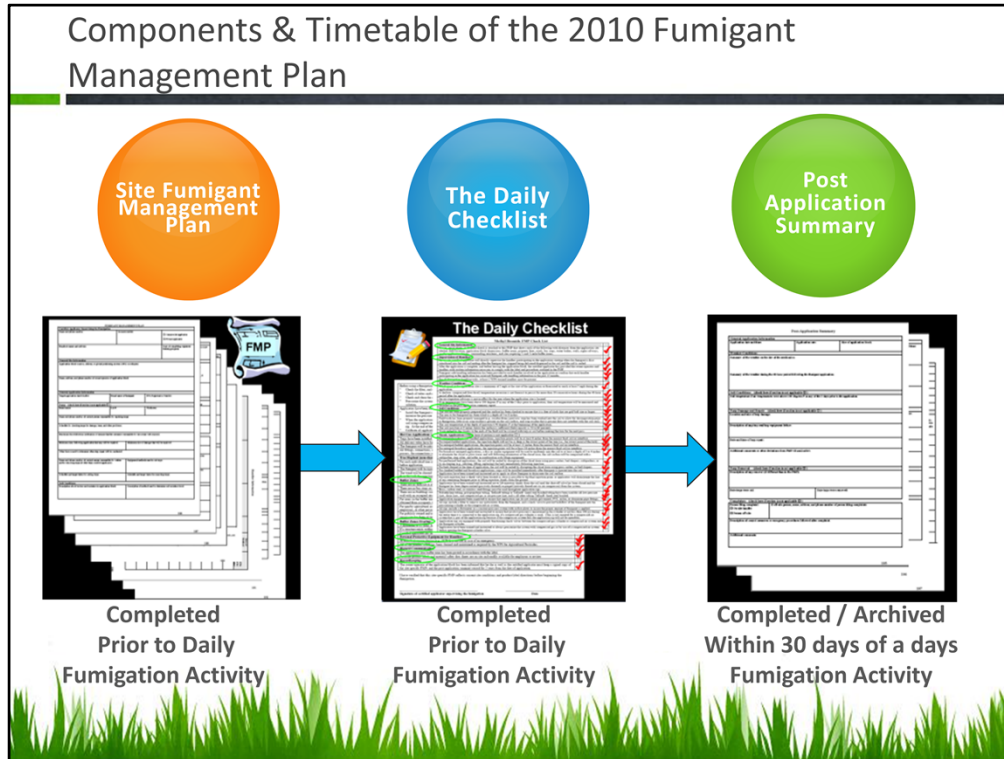
Risk Mitigation Measure	Currently	2010	2011
Restricted Use	•	•	•
New Good Agricultural Practices		•	•
Rate reductions		•	•
Use site limitations		•	•
New handler protections		•	•
Tarp cutting and removal restrictions		•	•
Extended worker reentry restrictions		•	•
Training information for workers		•	•
Fumigant Management Plans		○	•
First responder and community outreach		○	•
Applicator training		○	•
Compliance assistance and assurance measures		○	•
Restrictions on applications near sensitive areas			•
Buffer zones around all occupied sites			•
Buffer credits for best practices			•
Buffer posting			•
Buffer overlap prohibitions			•
Emergency preparedness measures			•

○ = under development
 • = adopt completely

As indicated in previous Fumigant Training modules, EPA has mandated the addition of many new changes to fumigant labels which include a variety of new risk mitigation measures in a 2 year stepwise approach. Some of the new label requirements will be implemented during late 2010, while others will be required from a second round of new labels which will appear in 2011.

Beginning as early as December 2010, new label language will appear which will formally require certified applicators to complete a written fumigant Management Plan prior to any days fumigant application in the field. In 2010 - a FMP will only be required to only capture that information contained within the fumigant labels published in 2010, phase 1 of the implement schedule.

In 2011, - a FMP must also capture second phase label requirements which will require the certified applicator to document compliance with new buffer zone requirements and emergency preparedness measures and procedures.



The Fumigant Management Plan consists of 3 Components, each of which have their own purpose, information requirement, and timeline for completion.

Overall, the Fumigant Management Plan consists of a:

- Site Specific Fumigant Management Plan
- A Daily Check list , and
- A Post Application Summary Report

The Site Specific Management Plan is completed daily, prior to each days fumigation in the field.

Once the Site Specific Management Plan is developed, The Daily Checklist, is then completed on a daily basis, prior to each days fumigation in the field.

Additionally, EPA requires that applicators complete a post-fumigation summary that described any deviations from the FMP, measurements taken to comply with GAPS, and information about any problems such as complaints or incidents that occurred as a result of the fumigation. The PAS must be completed within 30 days of a given days fumigation activity

Site Specific Management Plan

The image shows a stack of 'Site Specific Management Plan' forms. The top form is partially filled out with handwritten text. A diagonal orange watermark across the forms reads 'A single day's fumigation activity'. The forms contain various sections for planning and safety, including fields for applicator name, date, and specific fumigation details.

Purpose

- Ensure fumigators successfully plan all aspects of a safe and effective fumigation
- Prevent accidents, ensure label compliance, and identify appropriate procedures in case of accidents or unforeseen events
- Demonstrate compliance with label requirements and are a tool for verifying compliance

The purpose of the Site Specific Fumigant Management Plan is to:

- Ensure certified applicators successfully plan all aspects of a safe and effective fumigation on a daily basis
- Once completed and properly planned , the Site Specific Fumigant Management plan will help to prevent accidents and identify appropriate procedures which should be immediately followed in the case of an accident or unforeseen event
- It will not only serve as a tool in which to ensure and demonstrate label compliance by the certified applicator, but also serve as a tool for regulators to verify compliance for all labelled and approved uses of the fumigants.

Site Specific Fumigant Management Plan

Effective 2010

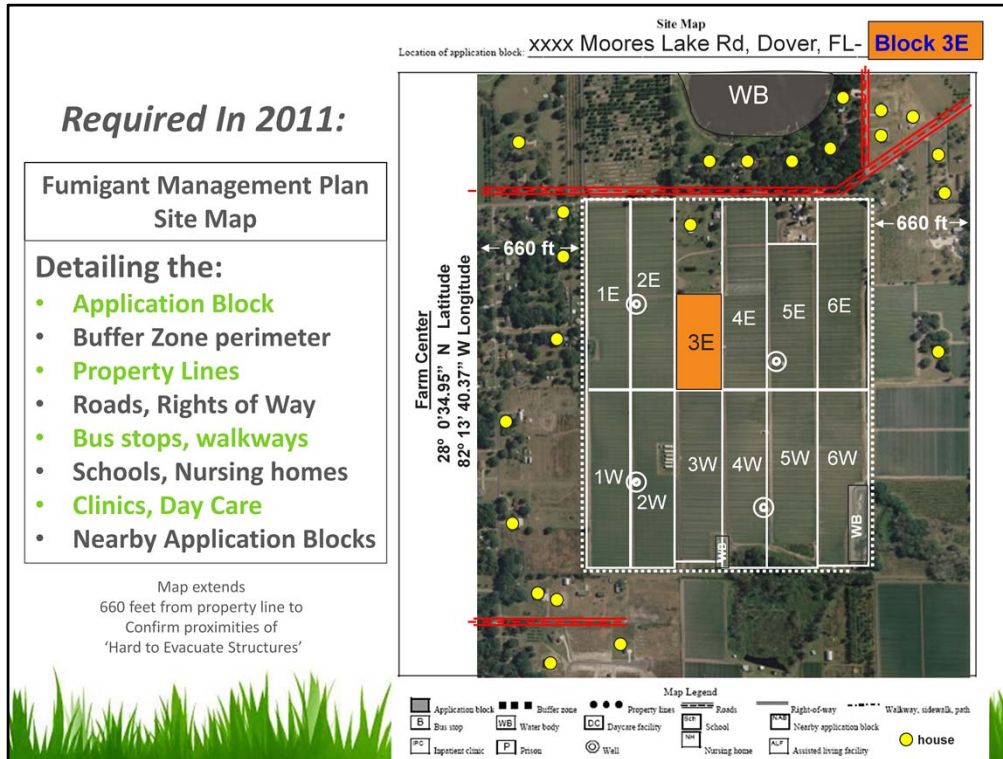
A stack of multiple copies of a Site Specific Fumigant Management Plan form, with the top one showing various sections like 'General Information', 'Application Information', and 'Site Specific Information'. A diagonal watermark reads 'A single day's fumigation activity'.

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

The July 2009 RED for soil fumigants provided a list of each major element a FMP would need to address. These included general site and applicator information, application procedures, and a description of how the fumigant applicator plans to comply with label requirements for GAPs including descriptions of soil condition, temperature and moisture, weather forecasts, buffer zones, air monitoring, worker protection, posting, and in some instances providing notification to the state or tribal lead agency. FMPs also were required to include plans for communication between the applicator and others involved in the fumigation, documentation, and how emergency situations will be handled.



Each site-specific FMP must contain a site map which might be an aerial photo or detailed sketch showing actual field location and dimensions. In 2011, the site map will require depicting of all buffer zones, property lines, roads, rights-of-ways, sidewalks, permanent walking paths, bus stops, water bodies, wells, nearby application blocks, surrounding structures (occupied and non-occupied), locations of posted signs for buffers, and sites requiring $\frac{1}{4}$ or $\frac{1}{8}$ mile buffer zones because of proximity of hard to evacuate sites such as schools, state licensed daycare centers, nursing homes, assisted living facilities, hospitals, in-patient clinics, and prisons and with distances of the sites from the application site all labeled within the site map.

Responsibility

Fumigant Management Plans (FMPs)

- Who may complete FMPs?
 - Grower, landowner, commercial applicator, crop consultant
 - Recorded in the FMP
- Certified applicator in charge of the fumigation verifies in writing that the FMP is current and accurate
- Responsibility may be delegated or shared- but must be Captured in FMP

Certain restrictions apply to who may complete a fumigant management plan and who must accept responsibility for its content.

The FMP may be prepared by many different people, including the certified applicator, the landowner of the application site, a grower or crop consultant, product registrant, or other designated party.

Regardless of who prepares the FMP however, it is the certified applicator who must verify in writing and signature that the site-specific FMP reflects current site locations, conditions and all other contents of the FMP before the start of any days fumigation activity.

It is also possible that responsibility for the FMP may be delegated or shared, but this arrangement must be documented within the FMP, and each must verify by signature within the FMP, the shared or delegated responsibility.

Additional Applicator Training

To complete the Fumigant Management Plan, the certified applicator must document that training developed and provided by individual fumigant registrants is completed every 36 months for each different product the applicator intends to use (Methyl iodide, metam sodium, etc.).

Fumigant-specific training for applicators and additional training information for handlers will help reduce the magnitude and frequency of exposure incidents

Note: State approved training is another option for registrant training.

To complete the Fumigant Management Plan, the certified applicator must document that training developed and provided by individual fumigant registrants was completed every 36 months for each different product the applicator intends to use. For example, a days fumigation which includes methyl iodide and metam sodium would require completion of registrant training programs for both fumigant products, every 36 months, before application of these products can begin in the field.

It is assumed that Fumigant-specific training for applicators and additional training information for handlers will help reduce the magnitude and frequency of exposure incidents.

Fumigant Management Plans:

Farm-wide FMP Template as an option

- Common information captured once, e.g.,
 - Applicator, handlers, and tarp info, emergency plans, etc
- Information unique to each block captured separately, e.g.,
 - Block location, buffer distances, application dates, weather and soil conditions, etc.



For situations where an initial FMP is developed and certain elements do not change for multiple fumigation sites such as the certified applicator information, authorized on-site personnel, tarp repair, record keeping, and emergency procedures, all of the information that remains unchanged can be captured once and reprinted to a new FMP and only elements that have changed, such as block location, application rates, weather and soil conditions, need to be updated in each new days site-specific FMP.

This will not preclude the requirement for

- The certified applicator supervising the application to verify all of the different elements of the FMP, including those elements that are current and applicable to the application block before it is fumigated and documented within the site-specific FMP.
- It also requires that the same recordkeeping requirements are followed for the entire FMP, including elements that do not change.

Site specific Fumigant Management Plan

Record Keeping

- Site Specific FMPs and Post-Application Summaries
Must be kept for 2 years by
 - The supervising certified applicator and
 - The owner/operator (if not the certified applicator)
- Along with other records required for
Application of Restricted Use Pesticides

As far as Record-keeping procedures are concerned, the owner/operator of the application block as well as the certified applicator must keep a signed copy of the site-specific FMP and the post application summary for 2 years from the date of the fumigant application in the field.

This is In addition to the previously existing recordkeeping requirements from 7 Code of Federal Regulations (CFR) part 110 “Recordkeeping Requirements for Certified Applicators of Federally Restricted Use Pesticides,”

Under these requirements, applicators must maintain recordkeeping of different pesticide treatments, application rates, products, application methods, growing and environmental conditions, crops to which applications have been made, field location etc.

Also, the Florida Department of Agriculture and Consumer Services (FDACS), under the authority of the Florida Pesticide Law, requires certified pesticide applicators to maintain records relating to the application of all restricted-use pesticides. These requirements are unrelated to the Worker Protection standard requirements which provide specific information to agricultural workers and pesticide handlers about applications made to fields, forests, greenhouses, and nurseries.

Site Specific Fumigant Management Plan

Availability

Once the application begins, the certified applicator must make a copy of the FMP available for viewing by handlers involved in the fumigation. The certified applicator or the owner/operator of the application block must provide a copy of the FMP to any federal, state, tribal, or local enforcement personnel who request the FMP. In the case of an emergency, the FMP must be made available when requested by federal/state/local emergency response and enforcement personnel.

Once the application begins, the certified applicator must be prepared to make a copy of the FMP available for viewing by handlers involved in that days fumigation. The certified applicator or the owner/operator of the application block must also be prepared to provide a copy of the FMP to any federal, state, tribal, or local enforcement personnel who may request copy of the FMP. In the case of an emergency, the FMP must also be made available when requested by federal/state/local emergency response and enforcement personnel.

Major Elements of Fumigant Management Plans (FMP)

(First Phase of required label changes required in 2010)

- General site and applicator information
- Application procedures
- Measurements taken to verify compliance with GAPs
- Worker protection information
- Air monitoring and hazard communication procedures
- Posting (treated area) and record keeping procedures
- Emergency plans and procedures
- Handler training information provided
- Post-application summary report

The major elements or information components of the FMP that certified applicators will have to document and record include:

- General application site and applicator information
- a description of the procedure or how the applicator intends to Apply the fumigant
- records of actual field, soil, and environmental Measurements that were taken on the day of fumigation to verify compliance with the mandated GAPs
- The Fum. Man. Plan will also require the certified applicator to report the identities of field workers, and to document Worker protection information, such as the personal protective equipment requirements and dates of any additional trainings required for application of the fumigant
- It will require summaries of Air monitoring and hazard communication procedures, and measurement taken.
- It will require Documentation of Field and Buffer zone Posting (treated area) and record keeping procedures
- Summaries of Emergency plans and procedures in the event an incident occurs.
- It will require a description of Handler training information provided
- within 30 days of the days fumigation, a Post-application summary report to document any deviations from the FMP and whether any problems were incurred.

Additional Elements of FMPs


To be required in 2011

- How buffers were determined, including use of credits
- Site map or sketch
- Measurements taken to verify credits warranted
- Buffer zone posting procedures
- Emergency preparedness and response procedures (if required for the site)
- Applicator training records
- State notification record (if required by the state)

Beginning in 2011, The FMP will also require the certified applicator to document:

- How buffer zone distances were determined, including which if any, buffer zone reducing credits were used.
- The FMP will require the inclusion of a detailed Site map or sketch detailing the location of the Application Block, Buffer Zone perimeter, Property Lines, Roads, Rights of Way, presence of Bus stops, walkways, Schools, Nursing homes, Clinics, Day Care, Nearby Application Blocks.
- It will require actual Measurements taken to verify and justify whether buffer zone reducing credits taken were warranted
- It will require a description of Buffer zone posting and Emergency preparedness and response procedures (if required for the site)
- The FMP will also require documentation of any Applicator training records required for use of the fumigant.
- and how the applicator planned to comply with label requirements for providing notification to the state or tribal agency of any days fumigation, (if it was required by the state)

General Information Section		
FUMIGANT MANAGEMENT PLAN		
Certified Applicator Supervising the Fumigation		
Name and phone number:	License number: If commercial applicator include Soil and Greenhouse Fumigation license number.	<input type="checkbox"/> Commercial applicator <input type="checkbox"/> Private applicator
Employer name and address:		Date of completing registrant training program: Product(s) Stewardship Training Date(s)
General Site Information		
Application block location, address, or global positioning system (GPS) coordinates:		
Name, address, and phone number of owner/operator of application block:		
General Application Information		
Target application date/window: December 2010	Brand name of fumigant:	EPA Registration Number:



the EPA has developed a sample template in which many of the elements of the site specific fumigant management plan are covered in checklist format, which fumigators have the option of downloading and modifying to meet the needs of their specific fumigation situations.


In the General Information Section for each site-specific FMP, it must contain the following elements:

- ☐☐ Applicator information (name, phone number, certified pesticide applicators license number as well as Soil Fumigation Licence number. The applicator must report employer's name and address, date of completing each fumigant registrants training program)
- ☐☐ It requires the applicator to provide General site information including
- ☐☐ location of the Application block, such as street address or GPS coordinates
- ☐☐ It must include the Name, address, and, phone number of the owner/operator of the application block
- ☐☐ as well as General application information including target application date/window, brand name of fumigant, EPA registration number)

General Information Section

FUMIGANT MANAGEMENT PLAN

Certified Applicator Supervising the Fumigation		
Name and phone number:	License number: <small>If commercial applicator include Soil and Greenhouse Fumigation license number</small>	<input type="checkbox"/> Commercial applicator <input type="checkbox"/> Private applicator
Employer name and address:		Date of completing registrant training program: Product(s) Stewardship Training Date(s)
General Site Information		
Application block location, address, or global positioning system (GPS) coordinates:		
Name:	<div style="background-color: #333; color: white; padding: 10px; border-radius: 5px;"> <p style="margin: 0;">Additional Applicator Training</p> <p style="margin: 0;">To complete the Fumigant Management Plan, the certified applicator <u>must document</u> that training developed and provided by individual fumigant registrants is completed every 36 months.</p> </div>	
General:		
Target:		
Note: State approved training is another option for registrant training.		





In the general information section of the Fumigant Management plan, is a requirement for Additional Applicator Training for the certified applicator responsible for the days fumigation.

To complete the Fumigant Management Plan, the certified applicator must document that training developed and provided by individual fumigant registrants is completed every 36 months. If a certified applicator intends to apply a diversity of different fumigant products, then the certified applicator will be required to update product specific training for each fumigant used, all of which must be updated on a three year basis.

Fumigant Management Plan: Tarp Repair



Tarps (check here if section is not applicable <input type="checkbox"/>)	
Brand name:	Lot #:
Name and phone number of contact person responsible for repairing tarps:	
Schedule for checking tarps for damage, tears, and other problems: Cross field visual surveys twice per day (8 am -5 pm)	
Maximum time following notification of damage that the person(s) responsible for tarp repair will respond: 30 min	
Minimum time following application that tarp will be repaired: Immediately	Minimum size of damage that will be repaired: 6-12 inches
Other factors used to determine when tarp repair will be conducted: After wind storms, hurricanes which might lift plastic	
Name and phone number of contact person responsible for cutting and/or removing tarps (if other than certified applicator):	Equipment/methods used to cut tarps: Mechanical, tractor drawn transplanter punch wheel
Schedule and target dates for cutting tarps: After recommended aeration period has expired	Schedule and target dates for removing tarps: In the Spring, after final harvest of 1 or 2nd Crop

Within the FMP, A written tarp plan must be developed and included in the FM. It must describe:




- a schedule and description of the procedures that will be used for checking tarps for damage, tears, lifting and other problems which might all premature escape of fumigant gases from soil
- It must include details of the plan to be used for determining when and how repairs to the tarps will be made, and by whom
- it must establish a minimum time following fumigant injection to soil that repairs to the tarp or plastic mulch will be made
- It must also document the minimum size of tarp damage that will be repaired and any factors which will be used to determine when tarp repair will be conducted

Fumigant Management Plan: Weather & Soil Conditions

Weather Conditions	
Summary of the weather forecast for the day of the application and the 48-hour period following the fumigant application (may attach a copy of printed forecast to FMP):	
Today's Weather Forecast	
Sunny - Partly Cloudy – Overcast skies (circle as appropriate)	Chance of Rain _____%
Scattered - Isolated thunderstorms expected (circle one if appropriate)	
High Air Temp ^o _____ F	Temp Inversion expected (Y or N)
Wind Direction _____ and Speed ___ to ___ mph	
Soil Conditions	
Soil moisture, at the start of application, was 60-80% of field capacity measured two to six inches below the soil surface.	Description of method used to determine soil moisture level: USDA NRCS Program Aid Number 1619 'Feel Appearance Method'
<p>"The USDA Feel and Appearance Method test, as appropriate for a coarse textured soil (fine sand to loamy fine sand) will be used. Fumigation will proceed if there enough moisture (50 to 75 percent available soil water moisture) to form a weak ball with loose and clustered sand grains on fingers, darkened color, moderate water staining on fingers, will not ribbon. (Reference: USDA NRCS Program Aid Number 1619)</p>	
	
	

Prior to a days fumigation the weather forecast for the day of the application and the 48-hour period following the fumigation must be checked to determine if unfavorable weather conditions exist or are predicted and used to determine whether fumigation for that day should proceed. Wind speed at the application site must be a minimum of 2 mph at the start of the application or forecasted to reach at least 5 mph during the application. Detailed local forecasts for weather conditions, wind speed, and air stagnation advisories must be obtained and documented within the Site Specific Management Plan. The site specific management plan also requires soil moisture to be measured and recorded at a depth of 9 inches at either end of the field, no more than 48 hours prior to application. Soil moisture must be determined by one of the following methods:

- The USDA Feel and Appearance Method for testing or with an instrument, such as a tensiometer. If there is insufficient moisture 9 inches below the soil surface, then the soil moisture must be adjusted. If irrigation is not available and there is adequate soil moisture below 9 inches, soil moisture can be adjusted by discing or plowing before fumigant injection. To conserve existing soil moisture, pretreatment irrigation or pretreatment tillage should be done as close to the time of application as possible. The method in which soil moisture will be determined must be reported in the FMP and the results from either method documented within the Post application summary

Fumigant Management Plan: Emergency Response Plan-Posting Signs

Emergency Response Plan

Description of evacuation routes:
Will move increasingly upwind from field and or equipment until air quality standards are acceptable.

Locations of telephones:
Mobile cell phones are carried by certified applicator and other designated field staff

See attached list of local, state, federal, and chemical company contacts for first responders:

CHEMTREC 1-800-424-9300	
--------------------------------	--

Emergency procedures/responsibilities in case of an incident, equipment/tarp/seal failure, complaints, or elevated air concentration levels outside buffer zone suggesting potential problems, or other emergencies).

Posting Signs

Name and phone number of person that is doing posting:

Location of posting signs: *Signs will be placed at all usual points of field entry (roadway entrances) and along likely routes of approach from areas where people who are not under the land owner/operator's control may approach the buffer zone.*

Procedures for posting and sign removal:
*The signs will be posted before fumigation begins and remain posted until the last buffer zone period expires
Signs may remain posted until three days after the buffer zone period for the last block has expired.*

The FMP includes documentation of an Emergency Response Plan, the purpose of which is to make readily available to first responders, contact information which could reduce response times to impacted bystanders and to provide a carefully thought out emergency response plan are taken immediately to help ensure appropriate actions are taken in case of unforeseen events).

Each registrant must develop and implement training programs for applicators in charge of soil fumigations on the proper use of and best practices for soil fumigants. Each registrants fumigant training programs must also include information on how to develop and implement an emergency response plans—to ensure that applicators are prepared in the event that a problem develops during or shortly after the fumigant application.

The emergency response plan must include description of evacuation routes, Locations of telephones, and important chemical contact information for first responders. It must include Emergency procedures/responsibilities in case of an incident, equipment/tarp/seal failure, complaints or elevated air concentration levels outside buffer zone suggesting potential problems, or other emergencies. For example, if the person monitoring the buffer zone perimeter experiences eye or nasal irritation, an early sign of exposure to fumigant concentrations that exceed the Agency's action level, then the emergency response plan specified in the FMP must be implemented.

Information regarding the posting of signs around the periphery of the treated field, includes the Name and phone number of person that is doing posting, the Location of posting signs, and a description of the Procedure to be used for posting and removal signs over time.

Fumigant Management Plan:

Communication Between Applicator, Land Owner, & Handler

Communication Between Applicator, Land Owner/Operator, and Other On-site Handlers

Plan for communicating to the land owner/operator and all on-site handlers (e.g., tarp cutters/removers, irrigators) requirements to comply with label including location and start/stop times of buffer zones; timing of tarp cutting/removal, and PPE:

In general, direct, on-site training meetings will be conducted by the certified applicator prior to fumigant application. Facts sheets from chemical manufacturers, Distributors, University, and Florida Cooperative Extension Service will be distributed and discussed.

Names and phone numbers of persons contacted:

Date contacted:

Comments/notes:

Information to be provided to land owners/ Operator and all on-site handlers includes:

Field locations, fumigants to be used, product label information, definitions and requirements for buffer zones, who may enter and work in buffer zones, personal protective equipment (PPE) requirements, needs for immediate repair of plastic mulch should it become necessary, signs and symptoms of fumigant exposure, and possible adverse effects associated with product use.

Completion of the FMP will require applicators to document plans for communication between the applicator and others involved in the fumigation, including how handlers should handle an emergency situation if it should occur. In general, direct, on-site training meetings should be conducted by the certified applicator prior to fumigant application. Facts sheets from chemical manufacturers, Distributors, University, and Florida Cooperative Extension Service serve as good information sources in which to distributed and discuss.






A site specific plan for communicating to the land owner/operator and all on-site handlers such as shovelers, tarp cutters/removers, irrigation installers, all the requirements needed to comply with the fumigant label, including location and start/stop times of buffer zones; timing of tarp cutting/removal, and needs for specific PPE must be documented within the site specific FMP

This must also include the Names, phone numbers of persons involved in the training and communications and the dates in which the communications have occurred.

Date they were contacted: and any

Comments/notes provided.

Fumigant Management Plan: Buffer Zones & PPE

Buffer Zones					
Application method: <input checked="" type="checkbox"/> Bedded <input type="checkbox"/> Broadcast <input type="checkbox"/> Hot gas - outdoor <input type="checkbox"/> Hot gas - greenhouse <input type="checkbox"/> Hand held probes	Rate from lookup table on label (lb ai/A):	Block size from lookup table on label (acres):	Credits applied: <input type="checkbox"/> high barrier film _____ % <input type="checkbox"/> organic content _____ % <input type="checkbox"/> clay content _____ % <input type="checkbox"/> other: _____ % Total credits _____ %	Buffer zone distance: _____ ft	
List and describe areas in the buffer zone that are not under the control of owner/operator of the application block: List any residences, adjacent agricultural areas, any occupied sheds, barns, garages, or publicly owned and/or operated areas such as parks, sidewalks, walking paths, playgrounds, and athletic fields, bus stops or other locations where people wait for public transit. Buffer zones may not include residential areas (including employee housing, private property, buildings, commercial, industrial, and other areas that people may occupy or outdoor residential areas, such as lawns, gardens, or play areas)					
Personal Protective Equipment for Handlers					
Handler Task	Clothing	Respirator Type, Filter Cartridge Type and Change-out Schedule	Eye Protection	Gloves	Other
SHOVELER					
TARP CUTTER					
TARP LAYER					

For the FMP, the certified applicator is required to document the buffer zone distance which was observed or imposed for that day's fumigation, including a reporting of the factors which were used in its calculation.

Such as the type Application method used, the fumigant rate expressed as active ingredient per acre and size of the application block that was used in the look up table on the fumigant label.

It will need to report which buffer zone reducing credits and their percentages were used if any, in the calculation of the buffer zone that is reported in the FMP. The certified applicator must indicate whether an EPA approved high barrier, gas impermeable mulch was used, or whether soil of higher clay or organic matter content warranted a credit to be taken.

The certified applicator is required to list and describe any areas in the buffer zone that are not under the control of the land owner/operator of the application block:

In addition to buffer zone, the FMP will also require the certified applicator to identify the different personal protective equipment requirements including coveralls, respirators, gloves, boots and or protective glasses that must be worn for any and all of the different fumigants being applied as well as for all of the Handlers who are assigned different tasks in the field, such as shoveler, tarp cutter, tarp layer, tractor operator.

Fumigant Management Plan:

Site Specific Response & Management

Notification of Neighbors



Site Specific Response and Management <input type="checkbox"/> Fumigation Site Monitoring or <input type="checkbox"/> Response Information for Neighbors															
If Response Information for Neighbors has been selected, completed the following:															
<table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">If buffer zone is 25-100 ft:</td> <td style="width: 33%;"><input type="checkbox"/> Neighbors within 50 ft of buffer zone</td> <td style="width: 33%;"><input type="checkbox"/> No neighbors within 50 ft of buffer zone</td> </tr> <tr> <td>If buffer zone is 100-200 ft:</td> <td><input type="checkbox"/> Neighbors within 100 ft of buffer zone</td> <td><input type="checkbox"/> No neighbors within 100 ft of buffer zone</td> </tr> <tr> <td>If buffer zone is 200-300 ft:</td> <td><input type="checkbox"/> Neighbors within 200 ft of buffer zone</td> <td><input type="checkbox"/> No neighbors within 200 ft of buffer zone</td> </tr> <tr> <td>If buffer zone is > 300 ft:</td> <td><input type="checkbox"/> Neighbors within 300 ft of buffer zone</td> <td><input type="checkbox"/> No neighbors within 300 ft of buffer zone</td> </tr> <tr> <td>If buffer zones overlap</td> <td><input type="checkbox"/> Neighbors within 300 ft of buffer zone</td> <td><input type="checkbox"/> No neighbors within 300 ft of buffer zone</td> </tr> </table>	If buffer zone is 25-100 ft:	<input type="checkbox"/> Neighbors within 50 ft of buffer zone	<input type="checkbox"/> No neighbors within 50 ft of buffer zone	If buffer zone is 100-200 ft:	<input type="checkbox"/> Neighbors within 100 ft of buffer zone	<input type="checkbox"/> No neighbors within 100 ft of buffer zone	If buffer zone is 200-300 ft:	<input type="checkbox"/> Neighbors within 200 ft of buffer zone	<input type="checkbox"/> No neighbors within 200 ft of buffer zone	If buffer zone is > 300 ft:	<input type="checkbox"/> Neighbors within 300 ft of buffer zone	<input type="checkbox"/> No neighbors within 300 ft of buffer zone	If buffer zones overlap	<input type="checkbox"/> Neighbors within 300 ft of buffer zone	<input type="checkbox"/> No neighbors within 300 ft of buffer zone
If buffer zone is 25-100 ft:	<input type="checkbox"/> Neighbors within 50 ft of buffer zone	<input type="checkbox"/> No neighbors within 50 ft of buffer zone													
If buffer zone is 100-200 ft:	<input type="checkbox"/> Neighbors within 100 ft of buffer zone	<input type="checkbox"/> No neighbors within 100 ft of buffer zone													
If buffer zone is 200-300 ft:	<input type="checkbox"/> Neighbors within 200 ft of buffer zone	<input type="checkbox"/> No neighbors within 200 ft of buffer zone													
If buffer zone is > 300 ft:	<input type="checkbox"/> Neighbors within 300 ft of buffer zone	<input type="checkbox"/> No neighbors within 300 ft of buffer zone													
If buffer zones overlap	<input type="checkbox"/> Neighbors within 300 ft of buffer zone	<input type="checkbox"/> No neighbors within 300 ft of buffer zone													
List of residences and businesses informed (neighboring property owners): <div style="border: 1px solid black; height: 80px; margin-top: 5px;"></div>															
Name, address, and phone number of person providing information: <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div>															
Method used to provide information: Information will be communicated by mail, email, telephone, door hangers, or via direct contact (circle those that apply)															



Within the FMP, the certified applicator must determine whether the Site-specific response and management plan will involve fumigation site monitoring or whether neighbors within a specified distance of the buffer zone perimeter will be notified of the applicators intent to apply a fumigant on nearby lands. If the applicator selects fumigant site monitoring, then the applicator must provide a Description of who, when, where, and a summary statement of the procedures that will be used for monitoring the buffer zone perimeter must be document within the FMP.

If the applicator decides to Notify or provide response information directly to Neighbors living within a specified distance from the buffer zone perimeter, the distance determined by the size of the buffer zone, then the applicator must report the complete list of residences, businesses, and neighboring property owners that will be informed.

It will also require the applicator to

☑☑report the Name and phone number of person doing the notification, and the Method of providing the information.

Neighbors must be notified at least one week prior to the fumigant application in the field. If after four weeks, the fumigation has not yet taken place, the information must be delivered again.

Information that must be provided includes:

The general location of the application block,

- the Fumigant(s) applied including the active ingredient, name of the fumigant product(s), and the EPA Registration number,
- It must include direct Contact information for the applicator and property owner/operator,
- the Time period in which the fumigation is planned to take place,
- it must include Early signs and symptoms of exposure to the fumigant(s) applied, What to do, and what emergency responder phone number to call if the neighboring property owner believes they are being exposed (911 in most cases), and it must describe to Neighbors
- How to find additional information about fumigants.

The method for distributing information to neighbors that must be described in the FMP can usually be accomplished through mail, telephone, door hangers, or direct person to person contact.

Fumigant Management Plan: Handler Information

Handler Information

Handler Name, Address, and Phone Number	Employer Name, Address, and Phone Number	Tasks They are Trained and Authorized to Perform	Date of PPE Training	Date of Medical Qualification to Wear a Respirator	Date of Fit Testing for Respirator



Completion of the Site Specific Fumigant Management Plan will also require the certified applicator to document by name, address, and phone number of all handlers involved in the fumigant application.

The tasks each handler is trained and authorized to perform must also be identified.

If the intent of the certified applicator is ask handlers to wear a respirator, in the event they are needed, the dates of OSHA approved PPE training, the dates in which each handler received medical qualification to wear a respirator, and the dates of respirator fit testing for each handler must be documented within the FMP, PRIOR to each days fumigation activity.

Fumigant Management Plan: Air Monitoring Plan

Air Monitoring Plan

For Buffer Zone Monitoring: (check here if section is not applicable <input type="checkbox"/>)				
Name of handler performing monitoring activities	Handler address	Handler phone number	Location of monitoring	Timing
			Areas between buffer zone perimeter and adjacent houses and businesses	<ul style="list-style-type: none"> • 1hr before sunset • Once during night • 1 hr after sunrise • Once during day

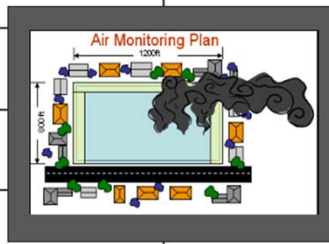
Fumigation Site Monitoring

From the beginning of the fumigant application until the buffer zone period expires, a certified applicator or someone under his/her supervision must:

- Monitor for air concentrations of chloropicrin in areas between the buffer zone perimeter and the areas (such as residences and businesses) that trigger this requirement.
- Monitoring the air concentration levels must begin the evening on the day of application and continue until the buffer zone period expires with a minimum of at least 8 samples during the buffer zone period, including these periods:
 - once, 1 hour before sunset,
 - once, during the night,
 - once, at 1 hour after sunrise, and
 - once, during the day.

4 times/day for Duration of Buffer zone

If at any time the person monitoring the air concentrations experiences sensory irritation, then the emergency response plan stated in the FMP must be immediately implemented. If other problems occur, such as a tarp coming loose, then the appropriate control plan must be activated. The location and results of the air monitoring must be recorded in the post-application summary report.




From the beginning of the fumigant application in the field until the time at which the buffer zone period expires 48 hours later, a certified applicator or someone under his/her supervision must:

- Monitor for air concentrations of the fumigant being applied in areas between the buffer zone perimeter and the areas (such as residences and businesses) that trigger this requirement. In many cases, this implies an area between the property line of the landowner and occupied structure of a bounding residence.
- Those people charged with Monitoring air concentration levels of the fumigant must begin the evening on the day of application and continue until the buffer zone period expires, 2 days later. There must be a minimum of at least 8 samples taken during the buffer zone period, including these periods:
 - once, 1 hour before sunset,
 - once, during the night,
 - once, at 1 hour after sunrise, and
 - once, during the day.

If at any time the person monitoring the air concentrations experiences sensory irritation, then the emergency response plan stated in the FMP must be immediately implemented. If other problems occur, such as a tarp coming loose, then the appropriate control plan must be activated. The location and results of the air monitoring must be recorded in the post-application summary report.

Fumigant Management Plan : Air Monitoring

For Handlers without Respiratory Protection: (check here if section is not applicable <input type="checkbox"/>)		
If sensory irritation is experienced: <input type="checkbox"/> Intend to cease operations <input type="checkbox"/> Intend to continue operations with respiratory protection If intend to continue operations with respiratory protection, complete section for Handlers with Respiratory Protection below.		
If intend to cease operations - Name, address, and phone number of handler to perform monitoring activities prior to operations resuming:	Monitoring equipment: 	
For Handlers with Respiratory Protection: (check here if section is not applicable <input type="checkbox"/>)		
Representative Handler Tasks to be Monitored	Monitoring Equipment	Timing



The site specific fumigant management plan also has a requirement for applicators to document a plan in which to monitor fumigant gas concentrations in air should the need arise during application in the field. For example, If at any time any handler in the field experiences sensory irritation (tearing, burning of the eyes or nose) then the certified applicator needs to decide and document within the FMP whether:

- to continue fumigant applications while demanding an air-purifying respirator (APR) which must be worn by all handlers who remain in the application block and surrounding buffer zone,

or the applicator must decide whether

- Operations must cease and handlers not wearing respiratory protection must leave the application block and surrounding buffer zone.
 - Handlers can remove respirators or resume operations if two consecutive breathing-zone samples taken at the handling site at least 15 minutes apart using colorimetric tubes show that levels of the fumigant have decreased to levels less than the respirator trigger in the same area in which gases were first experienced.
 - When respirators are worn, then air monitoring samples with the colorimetric tubes must be collected at least every 2 hours in the breathing zone of a handler performing a representative handling task.
 - If at any time: (1) a handler experiences any sensory irritation when wearing a respirator, or (2) an air sample is removed which is greater than an EPA designated level, then all handler activities must cease and handlers must be removed from the application block and surrounding buffer zone. If operations cease the emergency plan detailed in the FMP must be implemented.
 - Handlers can resume work activities without respiratory protection if two consecutive breathing-zone samples taken at the handling site at least 15 minutes apart show fumigant air concentrations have decreased to acceptable levels or that Handler do not report or experience additional sensory irritation.
- If the decision is made to cease operations and exit the field, then the name, address, and phone numbers of any and all handlers who perform all monitoring activities will need to be documented, including the schedule in which air samples will be taken, and the name of monitoring equipment used must be documented in the site specific FMP. The actual air monitoring data that was collected and recorded, must then be documented in the Post Application Summary.

FMP Sample Template

FMP Sample Template

FUMIGANT MANAGEMENT PLAN

Certified Applicator Supervising the Fumigation		
Name and phone number:	License number and/or certificate number:	<input type="checkbox"/> Commercial applicator <input type="checkbox"/> Private applicator
Employer name and address:		Date of completing registrant training program:
General Site Information		
Application block location (e.g., county, township-range-section quadrant), address, or global positioning system (GPS) coordinates:		
Name, address, and phone number of owner/operator of application block:		
General Application Information		
Target application date/window:	Brand name of fumigant:	EPA Registration Number:

http://www.epa.gov/pesticides/reregistration/soil_fumigants/ ⁸³

The EPA has developed a sample template which contains all of the required elements of the site specific fumigant management plan which must be considered and documented prior to a days fumigation. EPA has made the template available in a popular word processing format or software program in which applicators or designated parties have the option of downloading and modifying the template to meet the needs of their specific fumigation situations or to use an On-Line, internet based interactive program defined and constructed as a series of popup screens .

EPA is expected to continue to develop and refine the FMP template and potentially develop others so it is a more useful tool for ensuring the safe application of fumigants. Interested parties should continue to monitor the EPA websites for new developments. See http://www.epa.gov/pesticides/reregistration/soil_fumigants/.

THIS CONCLUDES MODULE number 8

Fumigant Management Plan:

First Responder Information

Contact information for first responders

CHEMTREC 1-800-424-9300

AMVAC 1-323-264-3910

DowAgroSciences-

Hendrix & Dail-

Hy Yield -

Handler Categories / Tasks

Shovelers / Tarp Cutters

Tractor Operator



Module 8 Review Questions

Questions

1. Before a fumigant is applied, a written _____ plan must be prepared.

Before a fumigant is applied, a written _____ plan must be prepared.

- fumigant request
- fumigant management
- toxic materials
- fumigant buffer zone

Correct	Choice
	fumigant request
X	fumigant management
	toxic materials
	fumigant buffer zone

2. The three purposes of a FMP is to reduce potential risks to bystanders, provide documentation how the fumigator intends to comply with label requirements, and ensure an appropriate response plan is in place to protect workers and bystanders should an incident occur.

The three purposes of a FMP is to reduce potential risks to bystanders, provide documentation how the fumigator intends to comply with label requirements, and ensure an appropriate response plan is in place to protect workers and bystanders should an incident occur.

True

False

Correct	Choice
X	True
	False

3. The FMP consists of the following items: Site Specific Fumigant Management Plan, a daily check list, and a post application summary report.

The FMP consists of the following items: Site Specific Fumigant Management Plan, a daily check list, and a post application summary report.

True

False

Correct	Choice
X	True
	False

4. The Post Application Summary must be submitted within _____ days of fumigant application.

The Post Application Summary must be submitted within _____ days of fumigant application.

- 7
- 14
- 30
- 90

Correct	Choice
	7
	14
X	30
	90

5. One purpose of the site management plan is to ensure certified applicators successfully plan all aspects of a safe and effective fumigation on a _____ basis.

One purpose of the site management plan is to ensure certified applicators successfully plan all aspects of a safe and effective fumigation on a _____ basis.

Choice
daily
Daily

6. FMPs also were required to include plans for _____ between the applicator and others involved in the fumigation.

FMPs also were required to include plans for _____ between the applicator and others involved in the fumigation.

Choice
communication
Communication

7. Each site-specific FMP must contain a site map. In 2011, the site map will require depicting the application block, buffer zone perimeter, property lines, roads, rights of way, bus stops, walkways, schools, nursing homes, clinics, day care, and nearby application blocks.

Each site-specific FMP must contain a site map. In 2011, the site map will require depicting the application block, buffer zone perimeter, property lines, roads, rights of way, bus stops, walkways, schools, nursing homes, clinics, day care, and nearby application blocks.

True

False

Correct	Choice
X	True
	False

8. A farm worker in charge of the fumigation verifies in writing that the FMP is current and accurate.

A farm worker in charge of the fumigation verifies in writing that the FMP is current and accurate.

True

False

Correct	Choice
	True
X	False

9. Which of the following is not in the First Phase of required label changes required in 2010?

Which of the following is not in the First Phase of required label changes required in 2010?

- Worker protection information
- Air monitoring and hazard communication procedures
- Post-application summary report
- Notice to local law enforcement of upcoming fumigation

Correct	Choice
	Worker protection information
	Air monitoring and hazard communication procedures
	Post-application summary report
X	Notice to local law enforcement of upcoming fumigation

10. Beginning in 2012, the FMP will also require documentation of any Applicator training records required for use of the fumigant.

Beginning in 2012, the FMP will also require documentation of any Applicator training records required for use of the fumigant.

True

False

Correct	Choice
	True
X	False

11. In the general application section, the date of completing a _____ training program must be documented.

In the general application section, the date of completing a _____ training program must be documented.

- registrant
- chemical
- hazardous material
- buffer zone

Correct	Choice
X	registrant
	chemical
	hazardous material
	buffer zone

12. Included in the FMP, a tarp repair section includes information which includes a schedule and description of the procedures that will be used for checking tarps for damage.

Included in the FMP, a tarp repair section includes information which includes a schedule and description of the procedures that will be used for checking tarps for damage.

True

False

Correct	Choice
X	True
	False

13. Wind speed at the application site must be a _____ of 2 mph at the start of the application.

Wind speed at the application site must be a _____ of 2 mph at the start of the application.

minimum

maximum

Correct	Choice
X	minimum
	maximum

14. The site specific management plan also requires soil moisture to be measured and recorded at a depth of 9 inches at either end of the field, no more than _____ hours prior to application.

The site specific management plan also requires soil moisture to be measured and recorded at a depth of 9 inches at either end of the field, no more than _____ hours prior to application.

- 12
- 24
- 36
- 48

Correct	Choice
	12
	24
X	36
	48

15. If there is insufficient moisture 9 inches below the soil surface, then the soil moisture must be adjusted. _____ and _____ before fumigant injection are two options for alleviating this problem. Please separate answers with a comma (,).

If there is insufficient moisture 9 inches below the soil surface, then the soil moisture must be adjusted. _____ and _____ before fumigant injection are two options for alleviating this problem. *Please separate answers with a comma (,).*

Possible Options
irrigation, plowing
plowing, irrigation
irrigation,plowing
plowing,irrigation
irrigating, plowing
plowing, irrigating
irrigating,plowing
plowing,irrigating

16. Which of the following is not a purpose of the Emergency Response Plan on the FMP?

Which of the following is not a purpose of the Emergency Response Plan on the FMP?

- to make readily available to first responders
- contact information which could reduce response times to impacted bystanders
- to provide a carefully thought out emergency response plan are taken immediately to help ensure appropriate actions are taken in case of unforeseen events
- to give local residents proof that harmful chemicals are being applied

Correct	Choice
	to make readily available to first responders
	contact information which could reduce response times to impacted bystanders
	to provide a carefully thought out emergency response plan are taken immediately to help ensure appropriate actions are taken in case of unforeseen events
X	to give local residents proof that harmful chemicals are being applied

17. Names and phone numbers of persons involved in the training and communications, including farm laborers, and the dates in which the communications have occurred are required on the Communication Between Applicator, Land Owner, & Handler of the FMP.

Names and phone numbers of persons involved in the training and communications, including farm laborers, and the dates in which the communications have occurred are required on the Communication Between Applicator, Land Owner, & Handler of the FMP.

True

False

Correct	Choice
X	True
	False

18. Which of the following items are included in the buffer zones section of the Buffer Zones & PPE section of a FMP. (Check all that apply)

Which of the following items are included in the buffer zones section of the Buffer Zones & PPE section of a FMP. (Check all that apply)

- application method
- rate from lookup table
- block size from lookup table on label
- credits applied
- buffer zone distance
- none of the choices are included

Correct	Choice
X	application method
X	rate from lookup table
X	block size from lookup table on label
X	credits applied
X	buffer zone distance
	none of the choices are included

19. Which of the following items are a form of equipment used for Personal Protective Equipment on the FMP? (Check all that apply)

Which of the following items are a form of equipment used for Personal Protective Equipment on the FMP? (Check all that apply)

- gloves
- coveralls
- respirator
- eye protection

Correct	Choice
X	gloves
X	coveralls
X	respirator
X	eye protection

20. Neighbors living within a specified distance from the buffer zone perimeter must be notified _____prior to application.

Neighbors living within a specified distance from the buffer zone perimeter must be notified _____prior to application.

- 1 day
- 3 days
- 5 days
- 1 week

Correct	Choice
	1 day
	3 days
	5 days
X	1 week

21. The tasks that each handler is trained and authorized to perform must also be identified. If the intent of the certified applicator is ask handlers to wear a respirator, for example, the dates of OSHA approved PPE training are also required.

The tasks that each handler is trained and authorized to perform must also be identified. If the intent of the certified applicator is ask handlers to wear a respirator, for example, the dates of OSHA approved PPE training are also required.

True

False

Correct	Choice
X	True
	False

22. There must be a minimum of at least _____ air samples taken during the buffer zone period.

There must be a minimum of at least _____ air samples taken during the buffer zone period.

- 1
- 4
- 8
- 10

Correct	Choice
	1
	4
X	8
	10

23. If at any time the person monitoring the air concentrations experiences sensory irritation, then the emergency response plan stated in the FMP must be implemented within 48 hours.

If at any time the person monitoring the air concentrations experiences sensory irritation, then the emergency response plan stated in the FMP must be implemented within 48 hours.

True

False

Correct	Choice
	True
X	False

24. If sensory irritation is experienced, the two options are to cease operations or to continue operations with _____ protection

If sensory irritation is experienced, the two options are to cease operations or to continue operations with _____ protection

- respiratory
- eye
- clothing
- hand

Correct	Choice
X	respiratory
	eye
	clothing
	hand

25. When respirators are worn, then air monitoring samples with the colorimetric tubes must be collected at least every _____ hour/s in the breathing zone of a handler performing a representative handling task.

When respirators are worn, then air monitoring samples with the colorimetric tubes must be collected at least every _____ hour/s in the breathing zone of a handler performing a representative handling task.

1

2

3

4

Correct	Choice
	1
X	2
	3
	4

26. The certified applicator must document that the training developed and provided by individual fumigant registrants was completed every _____ months for each different product the applicator intends to use.

The certified applicator must document that the training developed and provided by individual fumigant registrants was completed every _____ months for each different product the applicator intends to use.

- 12
- 24
- 36
- 48

Correct	Choice
	12
	24
X	36
	48

27. What information is unique to each block that should be captured separately on each individual FMP. (Check all that apply)

What information is unique to each block that should be captured separately on each individual FMP. (Check all that apply)

- block location
- application rates
- weather
- soil conditions
- none of the choices are unique

Correct	Choice
X	block location
X	application rates
X	weather
X	soil conditions
	none of the choices are unique

28. The owner/operator of the application block as well as the certified applicator must keep a signed copy of the site-specific FMP.

The owner/operator of the application block as well as the certified applicator must keep a signed copy of the site-specific FMP.

True

False

Correct	Choice
X	True
	False

29. The site-specific FMP and the post application summary must be posted for _____ years from the date of the fumigant application in the field.

The site-specific FMP and the post application summary must be posted for _____ years from the date of the fumigant application in the field.

1

2

3

4

Correct	Choice
	1
X	2
	3
	4

30. Local, State, or Federal Law enforcement do not have the right to a copy of the FMP without a formal request from the EPA.

Local, State, or Federal Law enforcement do not have the right to a copy of the FMP without a formal request from the EPA.

True

False

Correct	Choice
	True
X	False