Alaska
Non-Soil Fumigation
Manual

Category Sixteen

In general, applicators who apply pesticides to property other than their own must obtain certification from the Alaska Department of Environmental Conservation (ADEC) Pesticide Program. Applicators who apply restricted-use pesticides, regardless of location, must also be certified.

This manual addresses the use of all fumigants except soil fumigants. Applicators who use **fumigants to control pests in stored products and raw agricultural commodities, within enclosed structures, or in rodent burrows** must be certified by the Alaska Department of Environmental Conservation (DEC) in the Non-Soil Fumigation Category (Category Sixteen). Examples of applicators who should be certified in this category include farmers controlling pests in stored grains, applicators who fumigate overseas shipping containers, or commercial pesticide applicators who conduct insect control in entire residential structures.

The information needed to successfully complete the written core examination required for all certified pesticide applicators in Alaska includes:

1. National Pesticide Applicator Certification Core Manual;
2. Alaska Core Manual; and
3. State of Alaska Pesticide Regulations in Title 18, Chapter 90 of the Alaska Administrative Code (18 AAC 90)

The information needed to successfully obtain certification in Category Fifteen, Soil Fumigation in Alaska includes:

1. This Alaska Manual; and
2. The Arkansas *General Fumigation Manual*.

PORTIONS OF THE ARKANSAS FUMIGATION MANUAL TO DISREGARD

You may disregard the following portions of this manual because they address Soil Fumigation, which is covered in Category 15:

- Pages 40-44 on Pathogens and Pests in Soil.
- Pages 49-51 on Detecting Pest Problems in Soil.
- Pages 61-65 on Factors that Affect Soil Fumigation.
- Pages 77-80 on Pathogens and Pests in Soil.
- Pages 97-109 on Fumigation Methods for Soil.
- Pages 137-139 on 1,3-Dichloropropene.
- Pages 143-147 on Dazomet and Metam Sodium.
- Pages 149-150 on Soil fumigation with Methyl Bromide

CALCULATIONS

Precise and accurate application is important for every pesticide application, but this is particularly true for the types of pesticide applications allowed under Category Fifteen. Fumigation calculations can be extremely complex. Strong math skills, including the ability to calculate volumes, mixing ratios, rates of application, etc. will be necessary to successfully pass the

Category Sixteen Exam. You will need to carefully review Appendix B in the Arkansas *General Fumigation Manual*, as well as pages 164-165, and 190-192 in the National Core Manual.

ADDITIONAL TRAINING REQUIREMENTS

Fumigants are the most hazardous of all pesticides. Extreme care and careful compliance with the label are necessary to reduce risks.

Some fumigant products require additional training. The label will specifically state that applicants must participate in the product training program. As always, the label is the law; this means that product specific training is legally required prior to using these products.

FUMIGANT MANAGEMENT PLANS

Some products require the development of Fumigation Management Plans (FMPs). The FMP is a written record that describes all required procedures and other important information. Measures in the FMP address the safety of the applicators, site employees, the surrounding community, and the environment. It is also designed to ensure a legal and effective fumigation by specifically outlining all required procedures needed to be in compliance with the label and other requirements.

The FMP is intended to:
1. Prevent accidents
2. Ensure compliance
3. Define procedures in case of accident

An FMP is a site-specific plan prepared ***before any*** fumigation begins. It is intended to ensure that all aspects of the fumigation have been planned ahead of the actual work, and includes specific details about how the certified applicator is planning to conduct the fumigation and comply with label requirements, as well as emergency response, monitoring, contact information, and other details. The FMP should be kept on site during any activities related to the fumigant and must be made available to any fumigant handlers, DEC, and any first responders in case of emergency.

The certified applicator in charge of the fumigation must review, sign, and date the FMP to verify that it is accurate and complies with the product label. FMPs and verification of participation in training should be kept with application records for at least two years.

The label will provide specific information about what must be included in an FMP, and the product may even provide a template for use. Most FMPs will include the following elements:

- Contact information: Certified applicator, owner contact, emergency services, etc.
- Fumigation site information and description
- Fumigant application information; dosage, exposure time, aeration time, etc.
- Monitoring plan
- Emergency response plan
- Posting, notification, and communication plans
- Disposal and cleanup plan
- Fumigant handler information, training, and PPE
- Pesticide product labels
- Safety Data Sheets

POST APPLICATION SUMMARY

The post application summary (PAS) describes:

- Any actions that differed from the FMP.
- Measurements taken to comply with Good Agricultural Practices (when applicable).
- The National Weather Service forecast during application and 48 hours following application (when applicable).
- Details about application, monitoring results, etc.
- Any incidents or complaints.

The certified applicator in charge of fumigation must complete the PAS within 30 days following the application and must keep a copy of the PAS for two years.

The label will provide specific information about what must be included in a PAS, and the product may even provide a template for use.

FUMIGATION IN RODENT BURROWS

The Arkansas manual covers fumigation of stored products and raw agricultural commodities, such as whole grains and other unprocessed products. It also covers methods of structural fumigation. It does not address the use of fumigants in rodent burrows, which is another use of fumigants which is certified under this Category.

The active ingredient in fumigants for rodent burrows is Aluminum Phosphide (or occasionally magnesium phosphide). Small pellets or larger tablets of the product are placed in the entrance to rodent burrows, which are then blocked with soil. Atmospheric moisture activates the product, releasing hydrogen phosphide (phosphine) gas.

There are many factors which will affect how well this fumigant works, including temperature and humidity, which affect how quickly the chemical reaction occurs; soil porosity and burrow size and shape, which affects how much gas accumulates in the burrow; and wind speed and

direction, which can dissipate gas. Most of these products cannot be used when burrow temperatures are below 40° F because the reaction will not occur quickly enough; this is an important consideration in Alaska where soil temperatures may not reach acceptable temperatures most or all of the year.

In recent years there have been a number of very high profile deaths of children as a result of incorrect use of fumigant products to control rodents. As with all fumigants, these products can be very dangerous. There are a number of controls and limitations designed to ensure that people and pets are protected. This includes a distinctive warning odor, similar to garlic or decaying fish; detailed requirements for planning and safety preparedness; and prohibitions on placing the products near inhabited buildings. Strict compliance with all label requirements is critical to prevent accidental poisonings.

Before Using Any Pesticide

STOP

All pesticides can be harmful to health and environment if misused.

Read the label carefully. Use only as directed.