

**BEFORE THE DIRECTOR OF THE  
DEPARTMENT OF PESTICIDE REGULATION  
STATE OF CALIFORNIA**

**In the Matter of Ratto Brothers, Inc.**

Request for Approval of  
Reduced Volatile Organic Compound  
Emissions Field Fumigation Method

**DECISION**

**(California Code of Regulations, Title 3, section 6452)**

**RATTO BROTHERS, INC.**

**Mr. Raymond A. Ratto, Jr.  
Ratto Brothers, Inc.  
6312 Beckwith Road  
Modesto, California 95358**

**Summary**

Ratto Brothers, Inc., submitted a request to allow drench applications of potassium N-methyl dithiocarbamate (metam-potassium). As part of the Department of Pesticide Regulation's (DPR's) efforts to reduce volatile organic compound (VOC) emissions, this fumigation method is not allowed within several ozone nonattainment areas (NAAs) during May–October, under Title 3, California Code of Regulations (3 CCR) section 6450.1(c). However, the regulations include a provision for the DPR Director to grant interim approval of fumigation methods with emissions no greater than the field fumigation methods allowed in the regulations (3 CCR section 6452). DPR has completed its evaluation of the fumigation method as specified in 3 CCR section 6452. No data was submitted, but even assuming 100 percent VOC emissions, the application rate is low enough to meet the requirements for approval as an interim method. Effective immediately, DPR grants approval for interim use of the drench application method using either metam-potassium or metam-sodium, with limits on the application rate. The emission rating assigned to this method is 100 percent. This method may be used for three years from the date of this decision. Continued use beyond three years is contingent on the submittal of an acceptable study to document the emissions from this fumigation method.

**Background**

VOCs contribute to the formation of ozone, a major air pollutant in several regions of California. Under the federal Clean Air Act, California's State Implementation Plan for ozone includes an element to track and reduce VOC emissions from pesticides. On January 25, 2008, DPR adopted regulations to control VOC emissions from fumigants during the May–October peak ozone season in five ozone NAAs: Sacramento Metro, San Joaquin Valley, Southeast Desert, South Coast, and Ventura. The regulations include provisions that only allow fumigation methods for which DPR has adequate data to determine the VOC emission rates. However, the

regulations include a provision for interim approval of fumigation methods with emissions no greater than the field fumigation methods allowed in the regulations in the respective areas (3 CCR section 6452).

In a letter dated April 24, 2008, Ratto Brothers, Inc., requested that DPR approve an exemption for a soil drench application method using potassium N-methyl dithiocarbamate (metam-potassium; methyl isothiocyanate [MITC]-generating pesticide). The fumigation method is critical to Ratto Brothers farming of specialty crops like leafy green vegetables, herbs, and root vegetables because most other pesticide products are not registered for use on these crops. Ratto Brothers, Inc., asserts that other fumigation methods allowed probably have higher VOC emissions.

### **Regulatory Standards and Considerations**

Section 6452, 3 CCR, sets different standards by which to evaluate whether a new fumigation method will be allowed; one for the Sacramento Metro and South Coast ozone NAAs, and one for the San Joaquin Valley, Southeast Desert, and Ventura ozone NAAs. Sacramento Metro and South Coast have a less stringent standard because no further VOC reductions from pesticides are needed in these ozone NAAs. Both “low-emission” and “high-emission” methods can be used in these two areas. Only “low-emission” methods are allowed in the San Joaquin Valley, Southeast Desert, and Ventura ozone NAAs during the May–October peak ozone season. The key information is the emission rating (percent of the fumigant applied that is emitted to the air) and the emission rate (emission rating multiplied by the maximum application rate). Either the emission rating or the emission rate can be no greater than the current methods allowed within the ozone NAAs by the regulations. The following table shows the standard for approval of an interim method for MITC, based on DPR’s current emission estimates.

<b>Ozone Nonattainment Area</b>	<b>Maximum Allowed MITC Emission Rating (percentage)</b>	<b>Maximum Allowed MITC Emission Rate (pounds/acre)</b>
Sacramento Metro, South Coast	77	140
San Joaquin Valley, Southeast Desert, Ventura	28	51

In assessing whether the new method meets the standard, DPR must assess the scientific data submitted to establish the emission rating, normally consisting of field monitoring data. In evaluating this data, 3 CCR section 6452 requires DPR to consider the following factors:

- whether the information is sufficient to estimate emissions.
- whether the results are valid as indicated by the quality control data.
- whether the conditions studied represent agricultural fields.

### **Summary and Evaluation of the Submitted Information**

Ratto Brothers, Inc., proposes to apply K-Pam (metam-potassium) using a drench application method. K-Pam label requirements for this method include pre-irrigation to achieve 50 to 80 percent field capacity and an application rate of 30 to 60 gallons of K-Pam per treated acre. Ratto Brothers, Inc., applies K-Pam using low-pressure booms with nozzles 9 to 10 inches above the top of the beds at a rate of 15 to 23 gallons of K-Pam in 1,900 gallons of water per acre. However, additional information from Ratto Brothers, Inc., indicates that their application rate is on a broadcast acre basis, not treated acre basis. Applications are made in the early morning and are followed by a 0.15 to 0.20-inch water treatment within 30 minutes of the application and three additional water treatments over the first 24 hours. Ratto Brothers, Inc., proposes to fumigate up to 15 acres per day for a total of 1,000 to 1,500 acres using this method.

*NOTE: The application rates described in this document are based on broadcast applications, unless otherwise noted. Drench applications are normally applied to beds or rows, and labels frequently refer to application rates on a treated acre basis. Application rates on a treated acre basis must be converted to the broadcast equivalent (bed/row treated area plus furrow untreated area) to determine compliance with specified application rate limits.*

Ratto Brothers, Inc., did not submit any data documenting the VOC emissions ratings associated with a MITC drench application. DPR is not aware of any emissions data for this fumigation method. In addition, this method is substantially different from any other fumigation method with available data. DPR staff are not confident in using other data as a surrogate for this fumigation method. However, the proposed application rate is very low. Even if the emission rating is 100 percent, the VOC emission rate would range from 43 to 66 pounds of VOCs per broadcast acre, depending on the application rate. A metam-potassium application rate of 98 pounds active ingredient per broadcast acre (17 gallons/acre of K-Pam) would be equivalent to the San Joaquin Valley's maximum allowed MITC emission rate of 51 pounds of VOCs per broadcast acre.

## **Findings**

Ratto Brothers, Inc., did not submit any data documenting the VOC emissions associated with a MITC drench application and no data is available to reliably estimate the emission rating. Therefore, the emission rating assigned to MITC drench applications is 100 percent.

## **Conclusions**

The 100 percent emission rating and proposed application rate of 87 to 133 pounds active ingredient per broadcast acre of metam-potassium support approval of this fumigation method. Effective immediately, the MITC drench application method is approved for use in the San Joaquin Valley, Southeast Desert, and Ventura ozone NAAs with the following restrictions during May 1–October 31:

- Metam-potassium application rate must not exceed 98 pounds active ingredient per acre.
- Metam-sodium application rate must not exceed 90 pounds active ingredient per acre.
- Soil moisture at the time of application must meet the requirements described in 3 CCR section 6450.1(b).
- Fumigations must start no earlier than one hour after sunrise and must be completed no later than one hour before sunset.
- Two post-fumigation water treatments as specified in 3 CCR section 6450.1(d)(2)(A) must be applied.
- Pesticide use reports must identify these applications using field fumigation method code 1413.

Effective immediately, the MITC drench application method is approved for use in the Sacramento Metro and South Coast ozone NAAs with the following restrictions during May 1–October 31:

- Metam-potassium application rate must not exceed 270 pounds active ingredient per acre.
- Metam-sodium application rate must not exceed 246 pounds active ingredient per acre.
- Soil moisture at the time of application must meet the requirements described in 3 CCR section 6450.1(b).
- Fumigations must start no earlier than one hour after sunrise and must be completed no later than one hour before sunset.
- Two post-fumigation water treatments as specified in 3 CCR section 6450.1(d)(2)(A) must be applied.
- Pesticide use reports must identify these applications using field fumigation method code 1413.

The only restriction, other than labeling requirements, outside the May 1–October 31 period is to include field fumigation method code 1413 on pesticide use reports.

DPR grants interim approval of this fumigation method for three years from the date of this decision. Continued use of this fumigation method beyond three years is contingent on the submittal of an acceptable study to document the emissions. Since DPR must adopt regulations to include these new methods prior to the expiration of the interim approval, the study should be submitted within 12 months. DPR recommends that Ratto Brothers, Inc., submit a draft protocol for DPR scientific staff review prior to initiating the study.

By:                                          for \_\_\_\_\_  
Mary-Ann Warmerdam, Director  
Department of Pesticide Regulation

Date:           05/15/08