



# West Kentucky Vegetable Growers

## Newsletter

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### Special Topics of

#### Interest:

- Potential Replacement for Methyl Bromide Receives a 1-Year Registration in U.S.
- Lab Diagnostic Highlights
- U.S. Drought Monitor— Kentucky
- Dry Pesticide Rates for Hand-Held Sprayers
- Upcoming Events

**“Iodomethane is an alternative to methyl bromide, an extremely volatile soil fumigant that was widely used as a pre-plant treatment to control soil-borne plant pathogens, nematodes, weeds, and insects prior to implementation of the Montreal Protocol.”**

**Courtney Flood, Fruit & Vegetable Extension Associate, Editor**  
**Dr. Joe Masabni, Fruit & Vegetable Extension Specialist, Editor**

## POTENTIAL REPLACEMENT FOR METHYL BROMIDE RECEIVES A 1-YEAR REGISTRATION IN U.S.

**John Hartman, Kenny Seebold, and Paul Vincelli, Extension Specialists**

The U.S. Environmental Protection Agency recently granted approval to Arysta LifeScience for the use of iodomethane, also known as methyl iodide, for one year on strawberries, tomatoes, peppers, ornamentals, turf, trees, and vines. Iodomethane is an alternative to methyl bromide, an extremely volatile soil fumigant that was widely used as a pre-plant treatment to control soil-borne plant pathogens, nematodes, weeds, and insects prior to implementation of the Montreal Protocol. The latter stipulates that many uses of methyl bromide, including agricultural applications, be phased out due to the ozone-depleting nature of this compound. Currently, many uses of methyl bromide have been discontinued and others, such as pre-plant pest control for tomatoes, and peppers, are covered under "critical use exemptions" granted to certain states, including Kentucky. Critical use exemptions allow application of a limited amount of methyl bromide on high-value crops in situations where acceptable alternatives to the fumigant have not been identified; exemptions are granted on year-by-year basis. The cost of methyl bromide, consequently, has risen as supplies have diminished.

The combination of strong pest control and low environmental risk has put iodomethane at the top of the list of potential replacements for methyl bromide. Iodomethane is a close chemical relative of methyl bromide and shares many of its characteristics, including acute toxicity. However, the new material does not pose same threat to the ozone layer of our atmosphere as does methyl bromide. The reason for this is that bromine is extremely reactive with ozone, and can persist in the upper atmosphere for up to two years, while iodine is degraded in the lower atmosphere within 12 days of its release. In terms of efficacy, iodomethane's performance has been similar to methyl bromide across numerous trials.

The temporary registration that EPA granted for iodomethane contains very strict provisions to minimize potential risks associated with its use. The commercial formulation of iodomethane, called Midas, will be classified as restricted use. Buffer zones will be imposed to reduce off-target exposure, and size of zones will be based upon soil type, application rate, application method, and type of tarp (cover) used by the applicator. No more than 40 acres can be treated by an applicator per day, and the user must take measures to prevent re-entry into buffer zones for 48 hours (five days for treated fields) after

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application. Iodomethane cannot be used within 0.25 miles of schools, day-care facilities, hospitals, nursing homes, playgrounds, or prisons. Applicators and associated workers must wear appropriate protective equipment, including respirators, during the treatment process. At the end of the one-year registration period, iodomethane will be evaluated in terms of the effectiveness in mitigating risks to people and the environment along with other soil fumigants and full registration will depend upon the outcome of the evaluation.

The arrival of iodomethane has been welcomed by most producers, who see this compound as a safe and environmentally friendly replacement for methyl bromide. On the other hand, the EPA's announcement has aroused concern among some scientists. In the weeks before the EPA granted approval to iodomethane, a group of scientists that included several Nobel laureates drafted a letter to the agency expressing concern over wide-scale use of iodomethane and recommending that registration not be granted. High on the group's list of grievances was the acute toxicity of iodomethane, which the scientists believe poses an unacceptable risk to pregnant women, children, the elderly, and farm workers, and carcinogenicity. The EPA has countered that its decision was based upon extensive testing over a four-year period and thorough analysis of potential risks, and believes that risk-mitigation requirements are adequate to ensure safe use of iodomethane.

How this all plays out remains to be seen, but it appears that the EPA has taken extra precautions to minimize human exposure. Growers who use soil fumigants are aware that methyl bromide is also very toxic to humans and that extreme care is needed for its use. It would appear that introduction of iodomethane is merely substituting one widely used, but valuable, toxic chemical for another, but this time, one less harmful to the ozone layer.

## OCTOBER LAB DIAGNOSTIC HIGHLIGHTS

**From the desks of Paul Bachi and Julie Beale, Disease Diagnosticians**

Pythium stem rot has been found on broccoli, anthracnose on gourd and pumpkin, blossom end rot on gourd and pepper, bacterial soft rot on cabbage and ryegrass straw (used as substrate for commercial mushroom cultivation), and leaf spot on turnip (*Cercospora*).

# U.S. Drought Monitor

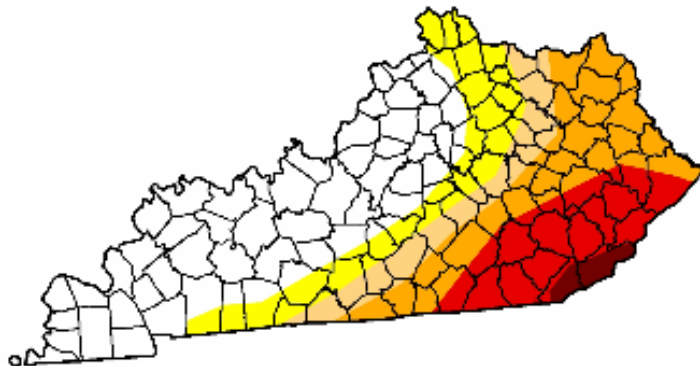
## Kentucky

November 6, 2007

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	43.6	56.4	41.8	33.1	15.5	1.7
Last Week (10/30/2007 map)	43.6	56.4	41.8	33.1	15.4	1.7
3 Months Ago (08/14/2007 map)	0.0	100.0	100.0	98.0	6.1	0.0
Start of Calendar Year (01/02/2007 map)	51.5	48.5	0.0	0.0	0.0	0.0
Start of Water Year (10/02/2007 map)	0.0	100.0	100.0	100.0	88.7	14.7
One Year Ago (11/07/2006 map)	100.0	0.0	0.0	0.0	0.0	0.0



**Intensity:**

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements



Released Thursday, November 8, 2007

Author: Douglas Le Comte, CPC/NOAA

<http://drought.unl.edu/dm>

### Drought Conditions for the Month of October (Percentage of Kentucky Affected)

Date	None	Abnormally Dry	Drought-Moderate	Drought-Severe	Extreme Drought	Exceptional Drought
Week of October 2	0	100	100	100	88.72	14.69
Week of October 9	0	100	100	100	99.53	14.69
Week of October 16	0	100	100	100	99.56	16.15
Week of October 23	0	100	100	76.01	50.10	14.23
Week of October 30	43.60	56.40	41.76	33.10	15.40	1.66

From the chart above you can see that the significant amount of rainfall that we received between October 16 and October 31 brought West Kentucky out of drought status. As recorded by the National Weather Service, Paducah, KY saw 5.82 inches of rain for the month of October which was greater than normal values.

# Dry Pesticide Rates for Hand-held Sprayers

See the University of Kentucky -College of Agriculture Publication HO-83 for the full text.

## Dr. Joe Masabni, Extension Specialist

Backpack and handheld sprayers are often used around the farm or home to treat small areas or a few infested trees. However, most pesticide labels focus on mixing and applying pesticides in quantities that far exceed the 1-, 3-, or 5-gallon (gal) sizes of common backpack and handheld sprayers. As a result, accurate conversions must be made to avoid a spray mix or application rate that could result in a treatment that is either stronger than recommended or too weak to be effective.

Two factors influence the accuracy of that conversion:

- properly measuring pesticides (especially dry pesticides) to be added to the mix, and
- applying the correct amount of that pesticide for the desired outcome.

## Spray Volume

### *Fungicides and Insecticides*

Most labels list the application rate either on a “per acre” basis (derived from 400 gal of diluted spray per acre), or on a “per 100 gal” basis. The 100-gal rate is easier to use, since it doesn’t require determining the acreage to be sprayed. The 100-gal rate is used in the publication in the fungicide and insecticide/miticide tables for determining the amount needed for 1-, 3-, or 5-gal spray volume.

### *Herbicides*

When it comes to herbicides, label recommended spray volumes are much smaller, e.g., 5 to 40 gal-per-acre (gpa). In the publication, a 20-gpa rate has been selected in determining the amounts needed for 1-, 3-, or 5-gal spray volumes. This 20-gpa rate is a mid-range value applicable for most herbicides.

Growers and homeowners must make sure that their sprayers are calibrated to deliver a 20-gpa rate. If not calibrated, the error in herbicide delivery will be magnified when using small-volume sprays. For example, a grower spraying the equivalent of 10 gpa will actually apply twice as much pesticide

as needed as when spraying with 20 gpa. Calibration must be tested and practiced often to ensure proper application rate. At a 20-gpa rate, 1 gal should cover 1/20 of an acre or 2,173 square feet, or an area of about 46 feet by 46 feet. Growers can measure their spray output and, with practice, can learn to spray close to the desired spray volume.

### Example

#### **Penncozeb 75DF**

Mix 1 gal of Penncozeb 75DF at a formulation of 1.5 lb per 100 gal.

1. Convert to a 1 gal rate  
 $1.5 \text{ lb} \div 100 \text{ gal} = 0.015 \text{ lb/gal}$
2. Convert to grams  
 $(\text{lb} \times 454 = \text{g})$   
 $(\text{oz} \times 28 = \text{g})$   
 $0.015 \text{ lb} \times 454 = 6.81 \text{ g/gal}$
3. Using Table 1 from the publication, convert to teaspoons  
 $(\text{Penncozeb 75DF} = 2.84 \text{ g/tsp})$   
 $6.81/2.84 = 2.4 \text{ tsp/gal}$   
 $= 2.5 \text{ tsp/gal (after rounding)}$

### **Helpful Hints**

- Make sure the pesticide concentration and formulation you are using *exactly* matches those found in the publication.
- Some of the pesticides may be out of circulation or may be found in various formulations. If a pesticide is available in more than one dry formulation, do not assume the values presented for one formulation are applicable to all.
- Values are presented in teaspoons for 1 and 3 gal and in tablespoons for 5 gal whenever possible. In some instances where the rate is high, resulting in very large teaspoon values, the numbers have been converted to cups for ease of use.
- Reminder: 1 cup is equal to 16 tbsp or 48 tsp.

Amount of Dry-Formulated Pesticides Needed for a 1 Gallon Spray Mix, Based on Actual Dry Weights								
Herbicides	Rate/A	Tsp/gal	Insecticides/ Miticides	Rate/A	Tsp/gal	Fungicides	Rate/A	Tsp/gal
Axiom 68 DF	8 oz	4.25	Ambush 25 WP	3.2 oz	0.5	Bayleton 50 DF	2 oz	0.25
Chateau 51 WG	6 oz	3.5	Diazinon 50 W	2 lb	5.75	Benlate 50 WP	2 oz	0.3
Dacthal 75 WP	8 lb	1.5 cup	Dipel 50 DF	0.25 lb	0.5	Cabrio 20 DF	8 oz	0.75
Define 60 DF	12 oz	6	Dursban 50 WP	1 lb	2	Captan 50 WP	3 lb	3.75
Devrinol 50 DF	4 lb	0.6 cup	Guthion 50 WP	1.5 lb	4.5	Carbamate 76 WDG	3 lb	6.25
Direx 80 DF	0.75 lb	6	Imidan 70 WP	1.3 lb	2.5	C-O-C-S WDG	20 lb	27.5
Gallery 75 DF	0.67 lb	6.75	Kelthane 50 WP	2.5 lb	7	Dithane 75 DF	1.5 lb	2.33
Karmex 80 DF	2 lb	14	Lorsban 50 W	2 lb	4.67	Kocide 2000	1.5 lb	2
Kerb 50 WP	2 lb	21	Orthene 75 S	0.3 lb	0.5	Manzate 75 DF	1.5 lb	2.33
Matrix 25 WG	1 oz	0.5	Savey 50 DF	3 oz	0.67	Nova 40 W	3 oz	0.5
Maverick 75 WG	0.66 oz	0.33	Sevin 50 W	2.5 lb	4.25	Penncozeb 75 DF	1.5 lb	2.5
Option 35 WG	1.5 oz	0.75	Thiodan 50 WP	2 lb	3.5	Pristine 38 WG	6 oz	0.67
Pursuit 70 WDG	1.08 oz	0.5				Rovral 50 WP	1 lb	3
Sandea 75 DF	0.5 oz	0.20				Ridomil	2 lb	4
Sinbar 80 WP	0.5 lb	4.67				Sovran 50 WG	3.2 oz	0.33
Solicam 80 DF	2.5 lb	15.75				Topsin M 70 WP	1 lb	3.5
Spartan 75 DF	0.25 lb	1.67						

## **UPCOMING EVENTS**

**DECEMBER 4 (TUESDAY)- 3<sup>RD</sup> ANNUAL VEGETABLE PRODUCTION INFORMATION FAIR FROM 4:00-8:00PM AT THE DAVIESS COUNTY EXTENSION OFFICE. FEATURES SEED AND IRRIGATION DEALERS, UK SPECIALISTS, AND A MEAL WILL BE PROVIDED.**

**DECEMBER 6 (THURSDAY)- ORGANIC VEGETABLE PRODUCTION WORKSHOP AT THE UK RESEARCH & EDUCATION CENTER FROM 1:00-5:15PM**

**JANUARY 7 & 8 (MONDAY & TUESDAY)- KY FRUIT & VEGETABLE CONFERENCE & TRADE SHOW AT EMBASSY SUITES IN LEXINGTON**

**[CONTACT US](#) OR YOUR COUNTY AGENT FOR DIRECTIONS OR ADDITIONAL INFORMATION.**

## COOPERATIVE EXTENSION SERVICE

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