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Comments Needed on EPA Registration Review and Proposed Decisions for Mancozeb

On July 3, the Environmental Protection Agency (EPA), Office of Chemical Safety and Pollution Prevention released a [proposed interim registration review for Mancozeb](#) (follow the link for a copy of the interim decision). A periodic review of existing pesticide registrations is required every 15 years as mandated by the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA). The previous registration review and decision for mancozeb was completed in 2005.

During review, the Agency determines whether a currently registered pesticide continues to meet FIFRA's registration standards. The EPA may include recommended mitigation measures and changes to labeling (including generics) to address risks of concern in an interim decision. The interim decision as posted is a document informing stakeholders of proposed changes to a pesticide's registration and allowed usage and is not a final decision. Crucially for growers, as part of the review process, there is a period to submit comments on an interim decision before the EPA completes its final registration decision. Comments are taken into consideration to limit the negative impact on growers, provided enough are impacted and those impacts are substantial enough to warrant not making the proposed changes.

Among the fruit crops important to Kentucky growers, mancozeb is currently registered for use on apples, pears, and grapes. Common application methods are through use of ground equipment (mechanically pressurized handgun, groundboom, or airblast sprayer) but aerial applications (plane and drone) and chemigation (sprinkler/overhead) uses are also permitted. Mancozeb provides substantial benefits to growers as it provides broad spectrum prevention and control of various fungal, oomycetes, and certain bacterial diseases. It is a multi-site mode of action fungicide that is frequently used in combination with single site mode of action fungicides to provide resistance management.

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However, during review the EPA has identified certain risks of concern to human health for handlers/operators and bystanders from exposure. Offsite drift to non-target aerial, terrestrial, and aquatic organisms, including those covered by the Endangered Species Act are also considered during review. Given the risks identified and considering the benefits, where appropriate, the EPA is proposing the following measures to “ensure mancozeb use does not present unreasonable adverse effects for human health or the environment.”

- Grapes – canceling the use of mancozeb on all types of grapes (including wine, table, juice, and raisin)
 - The reasoning for this proposal as stated in the interim decision is to address risks to workers entering a treated vineyard, considering that “multiple grape activities show failing margins of exposure (MOE’s) at 30 days post-treatment. A restricted entry interval long enough to bring the MOE’s above the LOC (levels of concern) would render mancozeb use on grapes impractical.”
 - Grapes, during a 2017 to 2021 survey had reported low usage of mancozeb nationally in terms of the percent of crop treated (PCT). The Agency found that use had “low or low to medium benefits” for grapes grown on the West Coast due to low disease pressure and/or availability of cost-effective alternatives. But did note that though national grape PCT was low “there were regional differences in mancozeb usage on grapes due to differences in disease pressure resulting from different moisture conditions.”

After an announcement is made in the Federal Register there is a 60-day period when comments may be submitted to the EPA based on the proposed labeling changes. The deadline to submit comments for review is September 16, 2024. Growers who would be affected by these decisions are encouraged to submit comments through the **Federal eRulemaking Portal** (direct link). Include in your comment the registration review case name and number (Mancozeb Case Number 0643) and docket ID number (EPA-HQ-Opp-2015-0291) for reference. Considerations for commenting on EPA dockets can be found at **<https://www.epa.gov/dockets/commenting-epa-dockets>**.

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How Dry Seasons Affect Woody Plants



By Nicole Ward Gauthier, Plant Pathology, Susan Fox and Kathy Wimberley, Horticulture - For more information on the subject, [click on ID-89](#)

Pattern, frequency, and amounts of rainfall are important components to plant health. Water is an essential plant component, making up 70 percent to 90 percent of plant mass. Growth, photosynthesis (manufacture of food), nutrient transport, important chemical reactions, and the production of secondary metabolites are all dependent upon water uptake from roots. Water expands and enlarges new cells within stems and leaves, which holds them upright (turgor pressure). During dry seasons and drought conditions, plants become stressed (Figure 1). Growth ceases, nutrient transport slows, and plants wilt as cells become water-deficient. Severe, long-term, or consecutive drought events may cause permanent damage.

Figure 1. Water loss during drought reduces the amount of water and nutrients taken up by roots and, thereby, amounts reaching leaves and needles.

Water Uptake in Plants

The driving force for transport of water throughout plants is transpiration. Evaporation from pores (stomata) on leaf surfaces creates a negative pressure that draws water up through plants. During periods when rainfall accumulation amounts are below average or when rainfall distribution is uneven, plant health declines. Thus, water is a vital resource for plant life.

Plant water and mineral uptake begins at delicate root hairs on feeder roots. Ninety percent of these root hairs are located on root tips that often occur in the top 12 to 15 inches of soil, and usually extend well beyond the driplines of trees. Thus, upper layers of soils require adequate moisture for optimum water and mineral uptake, and plant health. Under hot, dry conditions, water availability may be reduced to feeder roots and they can become permanently damaged. Damaged roots are unable to absorb and transport water to upper plant parts.

The physical characteristics of soils largely govern water-holding capacity and availability. For example, clay and clay loam soils have high water-holding capacities. Fine-textured clay soils hold much of their stored water for long periods of time. Conversely, coarse-textured soils (sands and sandy loams) have lower capacities to provide plant-available water. These coarse-textured soils cannot store enough water to last longer than a few days after rain or irrigation.

Symptoms and Effects of Drought

Wilting—As leaves in some plant species lose water turgor, wilting is often the first visible effect. Lack of moisture usually affects all leaves on multiple branches or entire plants. Leaves that are exposed to afternoon sun and prevailing winds are usually affected first and most severely. During early stages of drought and soil drying, wilt may be temporary, and leaves will be turgid again by the next morning. In more severe drought conditions, plants wilt permanently and do not recover overnight. Extent of wilt may also depend upon physical properties of leaves. While most plants lose leaf water during dry conditions, visible signs depend upon leaf thickness and support tissue within leaves.

Leaf scorch—In some species, leaf scorch can occur in response to a water deficit. Older leaves, which are thick and rigid, and most conifer leaves (needles) may not wilt. Instead, they may turn brown entirely or just at tips (Figure 2) or margins (Figure 3). As conditions progress, marginal or tip browning may spread into areas between veins. After that, oldest leaves on weak branches turn brown and begin to fall. Species most susceptible to leaf scorch include flowering dogwood, maple, horse chestnut, ash, elm, and beech.

Leaf drop—Wilted or scorched leaves often drop. In this process an abscission layer is formed between twig and leaf, and nutrients are reabsorbed back into the plant from the leaf prior to dropping. This leaf loss improves the root-to-shoot ratio, helping to reduce transpiration. However, reduced photosynthesis can cause plant stress. Note that in some species, leaves do not abscise; they die and remain attached.

Root loss—In dry soils, roots are unable to absorb sufficient water. They lose turgor, thereby losing contact with soil. Root hairs may become suberized (coated with waxy suberin), which prevents water loss. However, this process permanently reduces the ability of that root hair to take up water, even when soil moisture increases. Full water uptake and photosynthesis is not fully restored until new roots are produced.

Dieback—If drought conditions progress or worsen, both roots and woody tissues are affected. As feeder roots dry and lose functionality, water uptake is reduced, and stems are deprived of water and nutrients. Dieback is a common symptom of severe drought conditions. Even when soil moisture is replenished, root loss may not allow for sufficient uptake. This continued deprivation can result in continued abscission of twigs and branches. The dieback process resizes the canopy so it is proportionally similar to root capacity.



Figure 2. Conifers such as pines do not wilt; instead needle tips turn brown in response to drought



Figure 3. Water deficiency in leaves may cause scorch of leaf margins. Shown: Maple leaves with scorch.

[- For more information on the subject, click on ID-89 -](#)

ORCHARD FIELD WALK



September 18, 2024

4 – 6 p.m. (EDT)

University of KY North Farm
1925 Research Farm Road

(Entrance - north on HWY 922/Newtown Pike from Lexington
close to the I 75/I 64 Newtown Pike exchange)
Lexington, KY 40511

Join us for an orchard walk at the new Modern Orchard Systems and Climate Resilience Research and Extension Orchard at the University of Kentucky's North Farm in Lexington. The event will begin with an open house/self-guided tour starting at 4 p.m. (EDT), then a guided tour and group discussion starting at 5 p.m. Participants will learn about new training systems and production techniques in apples, pears, and peaches as well as special considerations for pest and disease control in young orchards from UK extension faculty in horticulture, plant pathology, and entomology. This event will be useful for new growers interested in starting orchards and for existing producers who want to learn the most up-to-date techniques. Spanish translation will be provided for both written and oral materials; please bring a cell phone with head phone/ear bud capabilities.

Registration is required and can be found here: [Orchard Field Walk](#)

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Disabilities
accommodated
with prior notification

What's in the Garden for September?

Use up your last peppers in the garden to make this delicious recipe. These colorful Quesadillas might be the perfect dish for a Labor Day picnic or as a football tailgait muncher for the crowd.



Confetti Chicken Quesadillas

1 small green bell pepper, seeded and diced
1 small red bell pepper, seeded and diced
1 **tablespoon** hot pepper, minced (optional)

1 **pound** skinless, boneless chicken breast, diced
1 (**1 ounce**) packet fajita seasoning mix
1 **tablespoon** olive oil

10 (**10 inch**) whole-wheat tortillas
1 (**8 ounce**) package reduced fat cheddar cheese, shredded

Preheat the broiler and prepare baking sheet with non-stick spray. **Toss** the diced chicken with the fajita seasoning and place on the baking sheet. **Spread** chopped peppers on baking sheet. **Place** under the broiler and broil until the chicken pieces are thoroughly cooked and no longer pink in the center, about 10 minutes. **Brush** skillet with oil and heat to medium. **Place** one tortilla in skillet. **Layer** half of tortilla with approximately one-third cup chicken

and pepper mixture. **Sprinkle** with 3 tablespoons cheddar cheese. **Fold** over and flip tortilla to crisp other side. Repeat until all quesadillas have been prepared. **Cut** each quesadilla into wedges and serve with salsa, if desired.

Yield: 10 servings

Nutritional Analysis: 270 calories, 10 g fat, 3 g saturated fat, 40 mg cholesterol, 880 mg sodium, 2 g sugar, 23 g carbohydrate, 2 g fiber, 19 g protein



Buying Kentucky Proud is easy. Look for the label at your grocery store, farmers' market, or roadside stand.

Kentucky Peppers

SEASON: June through the first frost, usually September.

NUTRITION FACTS: Sweet peppers are low in calories, high in vitamin C and a good source of vitamin A. One raw, medium-sized pepper contains about 20 calories. Red peppers are higher in both vitamins C and A than green peppers.

SELECTION: Select peppers that are heavy for their size, with bright, shiny skins. Avoid flabby, wrinkled or soft peppers.

STORAGE: Store in the refrigerator for 3 to 5 days. Place them in the vegetable crisper or in plastic bags.

PREPARATION: To prepare peppers, wash carefully without bruising.

Source: www.fruitsandveggiesmatter.gov

Peppers can be served raw, grilled, stuffed or roasted. Add them to salads, casseroles or Chinese and Mexican dishes.

PRESERVING: Wash, stem and seed peppers. Package, leaving no head space. Seal and freeze.

KENTUCKY PEPPERS

Kentucky Proud Project

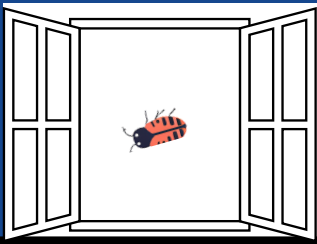
County Extension Agents for Family and Consumer Sciences
University of Kentucky, Dietetics and Human Nutrition students

August 2013

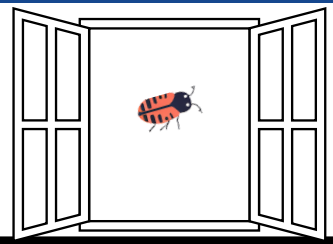
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COOPERATIVE
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UK
UNIVERSITY OF
KENTUCKY
College of Agriculture,
Food and Environment



FALL INVADERS



Photos: Lee Townsend, UK Entomology, unless otherwise noted)



Cluster Flies

Photo: Michigan State University Diagnostict Service)



Box Elder Bugs



Brown Marmorated Stink Bug

Lady beetles, stink bugs, boxelder bugs, and flies are some of the creatures actively seeking protected overwintering sites as days get shorter and cooler. Many produce stains or unpleasant odors if crushed. Some, such as wolf spiders or wood roaches, are accidentally invaders. No matter which, over-reaction to pests may lead to excessive insecticide use indoors that can have serious consequences. The best strategy is to keep as many as possible from getting indoors. Pest-proofing tips in the publication [How to Pest-proof Your Home \(ENTFACT-641\)](#) will get you off to a good start.



Wolf Spider

UK Entomology, R. Bessin, 2002

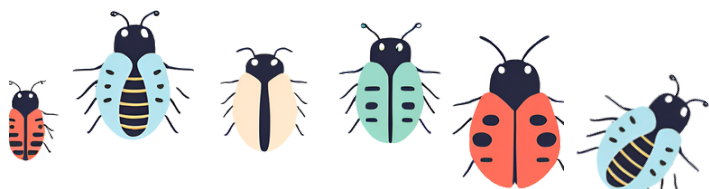


Asian Lady Beetle



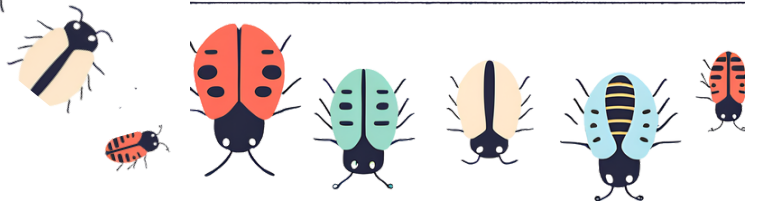
Wood Roach

Whitney Cranshaw, Colorado State University, Bugwood.org



Insects

Know Your



You Should Know

The December and January *Growing Gardeners Newsletter* will be combined into one newsletter, and mailed in mid-December

September Gardening Tips

- Mid to late September is a great time to add accent plants, like vivid mums and starry asters, that will provide autumn colors in the landscape. Use them along with cool-colored ornamental cabbages and kales to replace bedraggled annuals in containers as well.
- Lawns can be renovated or repaired between late August and mid- September for best results. New grass should started well before fall leaf drop.
- Examine houseplants carefully for insect pests before bringing them back inside. Give them a good grooming if necessary. You may want to spray plants with insecticidal soap after hosing off the foliage. Let the plants dry before applying the soap.
- Remove and compost spent annuals and fallen leaves.
- Weed and mulch perennial beds using a loose organic material such as bark chips or leaves to keep down weeds, preserve moisture, and give roots a longer time to grow before the soil freezes.
- Perennials like day lilies and bearded irises can still be dug up and divided.
- If you haven't already, start planning what spring flowering bulbs you will add to your gardens in October. Consider planting the bulbs among perennials, under trees and shrubs, or in larger groups for a splendid spring show.

Adapted for use in Kentucky by Sharon P. Flynt, Agent, Scott County Cooperative Extension Horticulture

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Photo from the National Park Arts Foundaton
