I have observed many fields of cantaloupe with magnesium deficiency or manganese toxicity. Watermelon plants may exhibit similar symptoms, but not as frequently as cantaloupe. Both disorders are related to acid (low pH) soils and usually occur in clusters in a field. Magnesium deficiency usually appears on sandy ridges and can be recognized by interveinal yellowing and death of tissues on older leaves (Figure 1). Manganese toxicity also first occurs on older leaves but appears in heavier or darker sands, often in low areas of the field. The diagnostic feature of manganese toxicity are the tiny pin-hole type lesions with yellow halos clustered between the veins (Figure 2). Leaves are best viewed when held up to the sun.

These disorders can easily be confused with an infectious disease. In particular, magnesium deficiency has been confused with Alternaria leaf blight. Symptoms may seem to “spread” from areas of the lowest pH to areas of somewhat higher pH. Individual rows may seem to be worse than adjacent rows. Such rows may have received less lime. The remedy for these disorders is to raise the pH of the soils involved with a lime that contains magnesium (dolomitic lime). This can be difficult to accomplish with crops growing under plastic mulch, because of the difficulty of getting the lime into the root zone. Magnesium deficiency alone can be alleviated by supplying a magnesium containing fertilizer.

Although growers may have soil tested and spread lime before the season, heavy rains in the early growing season can lead to areas with low pH. In addition, wet conditions can increase the likelihood of manganese toxicity because manganese is converted to a more soluble form in saturated soils.

Dan Egel, Horticulture Specialist, Purdue University.
Pest Management Field Day

On July 7, 2017 the University of Missouri will offer a Pest Management Workshop at Bradford Research Center beginning at 8 am and concluding with lunch at noon. We have a lot of good information to share. Some of the topics that will be featured by our speakers include:

- The current situation with off-target movement of dicamba in Missouri
- New research results related to dicamba formulations, volatility and movement with temperature inversions
- New options and tools for monitoring temperature inversions in Missouri
- Injury to ornamental trees, annual and perennial flowering plants, and common garden plants with 2,4-D and dicamba containing products
- Options for horseweed control and application parameters that make success more likely
- The status of herbicide resistance in Missouri horseweed populations
- Weed seed contamination of commercial seed mixes
- Factors that influence the likelihood of weed invasion in pastures
- At harvest weed seed destruction techniques

A comparison of current and future traits and weed management systems in soybean

In addition to all of the above, as usual we will have more than 1,000 weed management treatments in corn and soybean on display for attendees to look at on their own after lunch. PLEASE pre-register NOW by calling 573-884-7945 or emailing chismt@missouri.edu. We don’t want to run out of meals, field day books, or space on the tour wagons so it is very important that you pre-register so we can plan accordingly. Registration for the field day is $10 just to help reimburse us for some of the costs associated with meals.

Flood Information and Disaster Assistance:


www.DisasterAssistance.gov
800-621-3362 TTY: 800-462-7585

Have information ready when you apply:

- Social Security Number (One per household)
- Address of the damaged home or apartment
- Description of the damage
- Information about insurance coverage
- Telephone number
- Mailing Address
- Bank account & routing numbers for direct deposit
Select Heat Tolerant Cattle

Cattle that match their environment are more productive, less stressed, and are more effective at utilizing the resources available to them. Bottom line, matching cattle genetics to the production environment is profitable.

In Missouri, we need to select cattle that are heat tolerant and are able to graze toxic fescue without suffering production losses. The current tools available to breed cattle adapted to hot temperatures with high humidity levels is a short list.

- Introduce *Bos indicus* breeds into the herd
- Select cattle that shed their winter coat in early spring or summer

The ability to shed the winter coat early is an effective predictor of a cow’s ability to cope with heat stress. Calves from cows that shed their winter coat weigh more at weaning. Cattle with enhanced ability to shed hair can potentially tolerate fescue toxicosis better.

A hair shedding score is easy to evaluate and is a free management practice for producers to utilize. You may be able to identify genetic lines of cattle that have an increased ability to shed hair since there is a moderate heritability of hair shedding.

Shedding scores should be taken in spring or early summer and are scored on a 1 to 5 scale. A score of 5 indicates an animal that still has its complete winter coat with no evidence of shedding. A score of 1 is a completely slicked-off animal.

MU researchers are working on genetic predictions of hair shedding, but these predictions are not available yet. Until then, producers in hot, humid environments should consider a hair shedding score as one part of their selection criteria. Earlier shedding cattle are better suited for these environments and will be more productive and profitable.

*Erin Larimore, Livestock Specialist, University of Missouri Extension, Jackson, MO.*

SEMO District Fair Livestock Nominations are due to the Cape Girardeau County Extension Office July 15, 2017. A nomination is required for market barrows, lambs, and goats to be eligible for the SEMO District Fair Livestock Show and Sale. Livestock entries will be due August 8, 2017, with the online entry system available in July. Nominations forms do not qualify as fair entry.

Entries for the October 20, 2017 SEMO Performance Tested Bull Sale are due August 18, 2017. Late entries will not be accepted. Entry form and requirements are available on our website: [www.semobeef.com](http://www.semobeef.com).
Nematodes

Root knot nematode is a pest of importance to crops produced in southeast Missouri. When nematode infect cucurbits the overall harvest can be reduced by 30% through delayed maturity and reduced number of melons produced.

Under suitable environmental conditions, eggs hatch and larvae emerge within 4 to 8 weeks depending on temperature. Nematode development is generally most rapid within an optimal soil temperature range of 70 to 80°F. This usually occurs during the growing season but in southeast Missouri nematode can multiply under the protection of black plastic in the winter.

When nematodes infest roots, foliar symptoms generally involve stunting, unthriftiness, premature wilting, slow recovery to improved soil moisture conditions, leaf chlorosis (yellowing), and other symptoms characteristic of nutrient deficiency.

When plants are pulled from soil, galls will be apparent on roots ranging in size from a few millimeters to large swollen masses (see picture).

Crop rotation can help with root knot nematodes when rotation occurs with a grain crop. Chemicals that can be used include Vydate at planting to reduce the impact of nematode populations. In addition, InLine or Nimitz can be used on direct seeded plants by broadcast, band, or through drip application. Telone II or Telone C-35 is also available for control. Follow label directions for use.

Sarah Denkler, Horticulture Specialist, University of Missouri Extension, Poplar Bluff, MO.
Delayed hay harvest calls for testing

This year’s delayed hay harvest calls for hay testing. Farmers benefit from routine hay testing as well.

Hay quality varies based on forage species, maturity, management, harvest conditions, and insect or disease damage. Guessing the quality of hay fed to livestock could result in lower profits. Knowing the hay’s nutrient value can help livestock owners decide if animals need supplements.

Farmers should sample each lot separately. A lot comes from the same field and forage makeup, and is grown and harvested under the same environmental conditions. Every field and cutting will be different.

Use a 12- to 24-inch hay probe that is 3/8 to 5/8 of an inch in diameter. Do not grab or hand pull samples. Samples collected that way do not provide uniform results and could lead to misleading values.

Sample multiple bales out of a hay lot. The lot should represent at least 10 percent, or at least 15 random bales.

The sampling method varies for each bale type. On large round bales, take samples on the curved side of the bale and remove the outer layer if moldy. Avoid sampling from the outside of the bale. On large square bales, take samples at a 45-degree angle on the side of the bale or 90-degree angle on the end of the bale. Sample small square bales through the center and end.

Keep each lot separate. Mix samples in a bucket and fill a quart plastic bag. Samples perish quickly, so send them to the lab on the same day as the sampling. If this is not possible, keep samples away from direct sunlight and store in a cool, dry place until sending. Freeze high-moisture samples (above 15 percent) such as baleage or silage if they cannot be sent right away.

Mark the sample by date, cutting, location and owner before shipping. Find information on hay sampling at crops.missouri.edu(forage).

Hay tests cost about $20 each at certified labs throughout the state. You can find information on how to read results at extension.missouri.edu/aginfo/f forage-testing.aspx.

Anthongy Ohmes, Agronomy Specialist, University of Missouri Extension, Jackson, MO.
Future Meetings & Events -

**Pest Management Field Day** - Friday, July 7. The Bradford Research Center 4968 Rangeline Road, Columbia, MO, 65201. Contact Thresa Chism for more information at 573-884-7945


**Show-Me Soybean College** - Friday, July 14. The Bradford Research Center 4968 Rangeline Road, Columbia, MO, 65201. Contact Thresa Chism for more information at 573-884-7945. Register online: [https://mosoy.org/fieldday/](https://mosoy.org/fieldday/)

**Vegetable Grower Field Day** - Thursday, August 3. The Bradford Research Center 4968 Rangeline Road, Columbia, MO, 65201. Contact Thresa Chism for more information at 573-884-7945

**Commodities and markets** - [http://extension.missouri.edu/scott/crop-budgets.aspx](http://extension.missouri.edu/scott/crop-budgets.aspx)

Contributions to this publication are made by University of Missouri agriculture food and natural resource specialists. If you would like to receive this publication please send an email with request to: denklers@missouri.edu

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