

# Missouri Ag News

A Publication of University of Missouri Extension - Southeast Region

Volume 2, Issue 1

January 1, 2012

## Feeding Cows Through Winter

### Inside this issue:

<a href="#">Feeding Cows Through Winter</a>	1
<a href="#">Bacterial Fruit Blotch Review</a>	4
<a href="#">Portable Chlorophyll Meter</a>	5
<a href="#">Value Added Ag Grant</a>	6
<a href="#">Food Safety Project</a>	7
<a href="#">Future Meetings</a>	8

Look for the color code to find articles related to the following.

Crops	Horticulture
Engineering	Livestock
Forestry	Other



Deciding on what and how to feed beef cows through the winter can be a daunting task. The first step is to know what the nutrient requirements of your cows will be. Knowing the weight of your animals and the stage of production is necessary to determine how much to supplement. A beef cow needs roughly 2% of her body weight in dry matter each day. A 1300 pound cow will eat about 26 pounds of forage and grain per day but a 1500 pound cow will eat 30 pounds. When you are feeding 50 cows, that can be a difference of 200 pounds of food per day. Lactating cows require much more nutrients than a dry cow, and if you need to put some weight on cows that also requires more nutrients.

If you are using hay as your main supplement the first thing you need to do is have it tested. By looking at the hay you cannot tell if it contains 11% protein and 50% TDN or 7% protein and 45% TDN. The information from the hay test will help you decide what supplement you need, if any at all. The key to choosing a feed or supplement is to figure the feed on a nutrient basis such as pounds of protein or TDN per pound of supplement. I will use corn gluten feed as an example. Corn gluten

feed is going for about \$215 per ton in bulk. It contains 23% protein and 80% TDN. If I am figuring on a protein basis it will be \$0.47 per pound of protein and \$0.13 per pound of TDN. (cost of feed/ton \* ton of feed/nutrient content)/ton = nutrient per pound example (\$215 /2000 \*2000 /.23) /2000=\$0.47.

The second point to consider when choosing a supplement is storage and delivery options. Many feeds cannot be stored in a typical grain bin and should not be considered. However, if you are storing on a concrete floor, then more options open up.

Feeding tubs can seem like an easy way to get nutrients to your cattle but do note it is an expensive option as you are paying for convenience. Also, most tubs typically supplement protein and can be lacking in much-needed energy. Another thing to consider is if all the cows access the tubs. It is understandable to think that hand feeding a supplement requires more labor but you are not necessarily tied to feeding every day. If you are feeding less than 1% of a cow's body weight per day in grain, you can stagger your feeding to every other day or even every 3 days. If you are supplementing your cows with 3

## “Feeding Cows Through Winter” ...continued

pounds of feed per head every day you would be able to give them 9 pounds every 3 days and achieve similar results as daily feeding.

A few rules of thumb when feeding supplements:

- Limit soybean hulls to 40% of dry matter intake.
- Limit corn gluten feed and distillers grains to 30% of dry matter intake.

- Limit corn to 3.5 pounds or less per head per day.
- Feed cows to gain condition before calving.
- Evaluate your mineral program for calcium and phosphorus.

Kendra Graham, Livestock Specialist, University of Missouri Extension, Greenville, MO.

Nutrient Requirements of Beef Cows

	Calves		Cows			Bulls
	Weaning	Yearling	Dry	Gestation	Lactation	Mature
Dry Matter, lbs.	12.2	22.1	22.4	24.1	27.8	37
TDN, %	59	60	46.9	52.3	60	50
Crude Protein, %	9.8	9.6	6.5	7.8	10.7	5.5
Calcium, %	0.34	0.34	0.16	0.25	0.31	0.16
Phosphorus, %	0.18	0.18	0.13	0.16	0.21	0.12

## Regional Soybean Meeting

January 18, 2012 from 8:00am to 12:00pm  
at the Clinton Community Building in Sikeston, MO

Registration starts at 7:30am

Call Anthony Ohmes (573-683-6129) or David Reinbott (573-545-3516) to pre-register

## 2012 Ag Expo

Friday, January 20 from 1 to 8 pm

Saturday, January 21 from 9 am to 3 pm

At the Black River Coliseum in Poplar Bluff, MO

Family Ag Event

118 Vendors, 4 educational seminars, PAT training, Auction, 7 contests, a petting farm, entertainment, kids garden adventure

<http://extension.missouri.edu/butler/AgExpo.aspx> for more information

Free to the public

## Great Plains Growers Conference

January 5 - 7, 2012 in St. Joseph, MO

Thursday workshops include:

- High Tunnels - Essential Tools for the Market Farmer
- Community Supported Agriculture (CSA) Mini-school
- GAP/ Food Safety
- Fruit Growers Tree Fruit Workshop I
- New this year - The Basics of Beekeeping in the Midwest

Friday and Saturday include hourly seminars under four subject branches related to vegetable and fruit production.

For more information go to [www.greatplainsgrowers.org](http://www.greatplainsgrowers.org)

# Bacterial Fruit Blotch Review



If unable to attend the Annual Melon Meeting held on November 30, 2011 some important information regarding Bacterial Fruit Blotch (BFB) was missed.

Dr. Dan Egel of Purdue University provided attendees with some simple information that could aid in production of melons next season.



In our climate the winter is cold enough that the pathogen which causes BFB will not survive. However, the pathogen does set in seed so if any wild vines are growing around the field they should be destroyed to eliminate any chance of contamination of crop vines.

If you have an infection of BFB and are 'lucky' the first symptoms appear on

seedlings as small lesions that appear water soaked. If these symptoms are present the plant should be tested for the pathogen. If the test proves positive for BFB then the transplants should be removed and destroyed. Continue to scout the crop for other signs of the disease.

The problem is that BFB also resembles anthracnose and gummy stem blight so positive identification can be tricky without a test.

In 2011 many of those who found the disease did not notice signs before fruit set. Once the disease is established it cannot be eliminated.

As you scout the fields looking for lesions on leaves be aware that any area of contamination can be spread to healthy vines by equipment, pollination or by you as you walk.

A sanitation plan should be prepared and set into practice. If you notice a small area of contamination, do not enter that area or if you must then sanitize your shoes afterward. Do not move through the field while vines are still wet. This helps prevent contamination of healthy vines.

Proper identification is key. If you have anthracnose that can be treated with little effect on the crop. If you have BFB, especially if vines are young then those vines should be destroyed to prevent further contamination of the field. When the disease is established early there is usually a 100% loss of crop on those vines. You are better off removing them to protect the rest of the field.

Sarah Denkler, Horticulture Specialist, University of Missouri Extension, Poplar Bluff, MO.

Compare the look of lesions between these three melon diseases. Top picture: Bacterial Fruit Blotch, Middle: Anthracnose, Lower: Gummy Stem Blight.

Pictures courtesy of University of Missouri, Cornell and Purdue Universities.

## Portable Chlorophyll Meter to Manage Nitrogen in Rice

December is not the time to worry about rice fertilization... or is it? If Santa brings you a Chlorophyll Meter, now might be a good time to study and work out the bugs so it is ready for decisions next spring.

Nitrogen fertilizer, more than any other nutrient amendment, has helped increase commercial rice yields. Managing crop nitrogen in rice fields is challenging because flooded soils have several pathways for nitrogen loss.

The goal of rice farmers is to apply enough nitrogen fertilizer to avoid deficiency without applying too much. Overfertilization with nitrogen can lead to increased insect and disease occurrence, maturity delays, and lodging.

To combat nitrogen loss in rice production, growers distribute the risk of loss over a period of months by making early and midseason applications of urea fertilizer. Rice plants need nitrogen early in the season to stimulate tillering and later as the plant begins the reproductive stages. For drill-seeded rice, the recommended method is to apply two-thirds of the total nitrogen each season immediately before permanent flood with the remaining one-third broadcast in two midseason applications.

Midseason nitrogen applications are not always necessary.

Factors such as rice variety, pre-flood nitrogen fertilizer rate, and weather conditions influence the availability of nitrogen in the soil. The use of instruments such as chlorophyll meters shows potential for predicting when midseason nitrogen is needed.



Measuring green pigment in rice plants with a Minolta SPAD chlorophyll meter.

Chlorophyll, a green pigment present in plants, captures the sunlight that is used in photosynthesis. Nitrogen is a key element in chlorophyll molecules. A lightweight, portable instrument developed by the Soil-Plant Analyses Development (SPAD) unit of Minolta Camera Company can be used to estimate chlorophyll levels in plants. This instrument estimates the amount of chlorophyll present by measuring the amount of light that is transmitted through a leaf. In essence, it determines "how green is this plant." Chlorophyll meters can provide instantaneous, on-site information in a nondestructive manner throughout the year.

Sample rice leaves with the

chlorophyll meter before scheduling aerial applications of midseason nitrogen. Normally, this is done shortly after the internode begins to elongate in the rice stems (Figure 2). Insert the newest fully expanded leaf from each plant while avoiding old or immature leaves.

Chlorophyll meter readings can be influenced by many factors other than nitrogen alone. Anything that can alter the color of plants (e.g., diseases, nutrient deficiencies, variety differences) can influence chlorophyll meter readings. Do not take readings on leaves with lesions or with bronzing around the margins.

In fields with an average chlorophyll meter reading of 40 or greater, midseason nitrogen applications are as likely to cause yield loss as yield increase.

Growers should understand that the chlorophyll meter does not indicate how much nitrogen to apply, but only when nitrogen may be needed. Chlorophyll meters, when used in combination with other available diagnostic tools, provide improved opportunity to manage nitrogen in rice.

Mention of trade names does not constitute endorsement by MU.

Gene Stevens, Extension Professor, Delta Center, Portageville, MO and Steve

## Value Added Ag Grant Proposals due January 13

“ ...it is essential that we begin the proposal immediately. ”



The Missouri Agriculture and Small Business Development Authority (MASBDA) value added agriculture grants are due January 13, 2012.

These grants are from the Missouri Department of Agriculture, for the development of value added agriculture enterprises in Missouri. The grants must be used for the creation and development of a value added agriculture business in Missouri. An agriculture product must be used in the business, and physically changed into another product. For example milk into cheese, soybeans into soybean meal etc. Funds can be used for feasibility studies, marketing studies, marketing plans, legal assistance,

business plans, operational consulting and prospectus development for farmer owned cooperatives of corporations.

Funds cannot be used for business start up, business expansion, paying off debt, substituting existing research, covering institutional overhead costs, production costs, operational costs (payroll, inventory etc.), buying land and the application

fee. Salaries cannot be paid to those involved in the grant. Therefore, a third party must be hired to do the study.

Ten percent of the funds must go to projects under \$25,000. This opens the door for smaller projects that would benefit the individual producer. However, once again, funds cannot go to those who will benefit directly from the information.

Request for proposals are usually released annually, therefore, there will probably not be another call for proposals until 2013. Over the years I have assisted farmers and farmer groups in writing and submitting several MASBDA proposals. It typically takes me about 3-5 days to write the proposal, and several days to accumulate needed information for the proposal. Finding third party individuals to do the studies has been problematic. The proposal must identify those third parties doing the study.

I am willing to work with farmers and farmer groups to submit a proposal. However, because of limited time, it is essential that we begin the proposal immediately. If you are interested in pursuing a MASBDA grant, please contact me, Van Ayers, at 573-568-3344 or [ayersv@missouri.edu](mailto:ayersv@missouri.edu).

Van Ayers, Agriculture and Rural Development Specialist, University of Missouri Extension, Bloomfield, MO.

# Food Safety Project

As food safety continues to be a hot topic for the media and in the consumers thoughts it is becoming more and more important for the producer to be prepared in the event that a food issue arises.

For many producers one big hurdle has been the preparation of the food safety plan. This document is the basic manual needed to prove that your operation is conscious of safety issues and working toward minimizing them. Producers may be doing what is needed to keep food safe but who wants to create more paperwork?

A new project has been completed that will aid small fruit and vegetable farmers to create a food safety manual and it is as easy as answering yes and no.

The development of this tool has taken a year. It allows growers to generate a customized on-farm food safety plan based on their input. This tool can be found at [www.onfarmfoodsafety.org](http://www.onfarmfoodsafety.org).

Here growers register and answer a series of yes or no questions, moving through the tool by hitting next. After completing each page, 'SAVE' the information and when finished the "Your Latest Manual' page allows producers to save and print the manual for use. Forms are also available that will aid in documentation of on farm practices.

This tool was formed in cooperation between the USDA, FDA, Institute for Agriculture and Trade, many farm associations, groups and alliances, Cornell University and others in the food chain. The tool is free to use.



**On-Farm Food Safety Project**

FamilyFarmed.org

About | How to Get Food Safety Certified | [Create a Food Safety Manual](#) | Forms/Training Materials | Resources | Press | Sponsors

## Need Help Creating a Food Safety Plan?

The On-Farm Food Safety Project is a comprehensive national program that offers fruit and vegetable farmers, food safety professionals and agricultural extension specialists technical assistance to utilize and teach best practices in food safety.

This website includes the bulk of these resources including a free online tool, based on a comprehensive risk based framework, which generates customized on-farm food safety plans based on user input. The tool is designed for use by small to mid-scale fruit and vegetable growers and provides a full set of record keeping tools to document their food safety program and to provide training to their employees.

**PROJECT LAUNCH:**  
Washington DC Press Conference  
with Kathleen Merrigan

**Learn About Food Safety and Start Your Plan:**

[How to Get Food Safety Certified](#)

[Create a Food Safety Manual](#)

*We are grateful that many leaders in food safety contributed to the development of this tool as members of the technical advisory committee and advisory board.*

All content © 2010-2011 FamilyFarmed.org | [Contact Us](#) | [Privacy Policy](#) | [Terms of Use](#) | [Disclaimer](#) | Website by Paul J. Ott

UNIVERSITY OF MISSOURI  
 **Extension**

**Donna Aufdenberg - Horticulture**

aufdenbergd@missouri.edu 573-238-2420

**Sam Atwell - Agronomy (Rice)**

atwells@missouri.edu 573-748-5531

**Van Ayers - Ag and Rural Development**

ayersv@missouri.edu 573-568-3344

**Sarah Denkler - Horticulture**

denklers@missouri.edu 573-686-8064

**Kendra Graham - Livestock**

grahamkk@missouri.edu 573-224-5600 x8

Missouri Ag News is a publication of the University of Missouri Extension, compiled by Agriculture Specialists in the Southeast Region of Missouri. Contributions to this publication are made by:

**Mike Milam - Agronomy (Cotton)**

milammr@missouri.edu 573-888-4722

**Anthony Ohmes - Agronomy (Corn)**

ohmesa@missouri.edu 573-683-6129

**David Reinbott - Ag Business**

reinbottd@missouri.edu 573-545-3516

**Frank Wideman - Ag Engineering**

widemanf@missouri.edu 573-547-4504

If you are interested in receiving this publication via e-mail or being removed from the email list please send a request to denklers@missouri.edu.

## Future Meetings & Events -

Cotton and Rice Conference - January 31 to February 1, 2012 at the Tunica Convention Center in Tunica, MS. <http://www.nctd.net/graphics/confregistration1.pdf>

MU Annual Rice Meeting - February 2012 at The Eagles Club in Dexter, MO

MU Extension Cotton Meeting - February 2012 at the MU T.E. "Jake" Fisher Delta Center in Portageville, MO