

Missouri Ag News

A Publication of University of Missouri Extension - Southeast Region

Volume 4, Issue 2

February 1, 2014

Hitting the Mark...Setting Yield Goals...

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Engineering	Livestock
Forestry	Other



While crop yields from 2013 still ring fresh in our minds and we are either excited or optimistic for the next year, hoping to do better or to have a repeat of last season. This is a good time to share a little information about setting realistic yield goals. Setting yield goals is nothing new, but this is one of those things we need a refresher now and again.

I can't say how many times I have heard farmers talk about the huge variation in crop yield from field to field on the same farm and even within the same field. Thus, logic would have it that we can't set the same yield goal for all the fields on the farm. This is because climate, genetics, crop management, and soils physical and chemical properties greatly influence crop yield. In Southeast Missouri, the soils are highly variable from farm to farm and even within a single field on most farms. This variation in soils is one of the major reasons for our high variation in yield. Therefore, it is very important to understand the need for setting realistic yield goal for each field each year.

Why Set Yield Goals?

Realistic yield goals are important, particularly for determining the amount of nitrogen (N) to apply.

Soil tests for N are generally unreliable, therefore N recommendations are often based on the yield goals. That is to say, that the yield goals that are written on that soil sampling sheet when you turn your samples in is the basis on which the N recommendation is based. Thus, if your yield goals are overly optimistic, the recommended application rate for N will be high. This can result in a dent in your pocket along with the increased risk of N getting into nearby streams and ground water.

Setting a Realistic Yield Goal?

Setting yield goals is difficult, but that should be expected. Like an athlete setting goals for the upcoming season, the goals should be challenging, but at the same time attainable. Goal setting is very individualistic. So there is no right or wrong way. One simply has to consider their situation and set goals based on their situation. While it may be tempting to set the same goals as your neighbor or for each field, one should recognize that no farm, field or farmer is exactly the same. Below are some suggestions that can be used as a guide for setting realistic yield goals.

Continued.....Hitting the Mark

Use Maximum Yield Produced in the Past...

This method uses the historic highest yield produced on your land. In using this approach it is good to recognize that good years are the exception, not the rule.

Use Farm and/ or County Average...

Farm average can be obtained from farm records, providing that good records are kept. Crop production averages by counties can easily be obtained from the national agricultural statistical service website <http://www.nass.usda.gov/>. This method is suitable for those who are satisfied with the status quo, but not for progressive farmers concerned with high farm profitability.

Adjust The Past Average...

This method is a practical and realistic approach that utilized past averages to set a realistic yield goal. If we think about our field productivity over the years it may be safe to think that a logical range for a yield goal should be somewhere above average to near the maximum yield in the last three to five years. For using this method two common approaches are often recommended:

Add 10 to 30% to the recent average yield; with the highest yield becoming the yield goal.

Take the average of three highest yields in the last five consecutive years.

To set realistic yield goals be positive, keep good production record of each field on the farm for at least five years, and aim for above average yields so crop yields will slowly increase over time. Regardless of the method you decide on, it is important to be consistent from one year to the next.

More Information on Yield Goals

Local information and experience is the best source for choosing realistic yield goals for your farm. Your local county or state extension office, state university agronomy department, or state department of agriculture can supply important information. More information about setting yield goals is available from:

Farmer's Guide to Agriculture and Water Quality Issues <http://www.cals.ncsu.edu/wq/wqp/index.html>

Nutrient Management Fact Sheet (NM-6): *Setting Yield Goals* <http://www.cals.ncsu.edu/wq/wqp/wqpollutants/nutrients/factsheets/FactsheetNM6.pdf>

US EPA Agricultural Compliance Center <http://www.epa.gov/agriculture/index.html>

USDA Nutrient Management Homepage <http://www.nrcs.usda.gov/technical/nutrient.html>

University of Minnesota: *Setting Realistic Crop Yield Goals* <http://conservancy.umn.edu/bitstream/51808/1/3873.pdf>

University of Nebraska: *Setting a Realistic Corn Yield Goal* <http://www.ianrpubs.unl.edu/epublic/archive/g481/build/g481.pdf>

A.J. Foster, Agronomy Specialist, University of Missouri, Bloomfield, MO.

Farmer's Market Workshop

Tuesday, February 11 from 8:30 am to 3:00 pm

Black River Electric Cooperative in Fredericktown

This is a great opportunity to introduce your area Farmer's Market and welcome new vendors. It is a chance to network with other vendors and share information about growing produce and marketing.

Topics covered include:

Bare Bones of Taxes, Licenses, Insurance, New Invasive Insects, Cover Crops and Vegetable Grafting

The vegetable grafting is hands-on. Participants must bring a sturdy, enclosed, dark plastic container large enough to hold a 6-pack of transplants in order to take plants home (example: small cooler or plastic jug).

RSVP required by February 4 to ensure a spot. The registration fee is \$15.

Lunch will be served and there will also be an opportunity to certify scales in the morning. For more information and to register contact Katie Kammler at 573-883-3548 or <http://extension.missouri.edu/stegenevieve/>

For Sale: 3000 feet of above ground irrigation pipe (3" x 30' with risers).

Contact Richard Meyer with Teen Challenge in Cape Girardeau.

His number is 573-788-2613.

Wheat Management - Spring Green-Up

Fall 2013 wheat planting conditions were less than ideal for many areas of southeast Missouri. Those tough conditions are showing this winter and could be a problem when wheat begins green-up. If wheat tiller numbers are below target, applying a green-up nitrogen application should be considered. Typically green-up is mid-February for southeast Missouri. You have approximately a 30 day window between green-up and jointing for additional tillering. In fields with thin stands a green-up application should be applied.

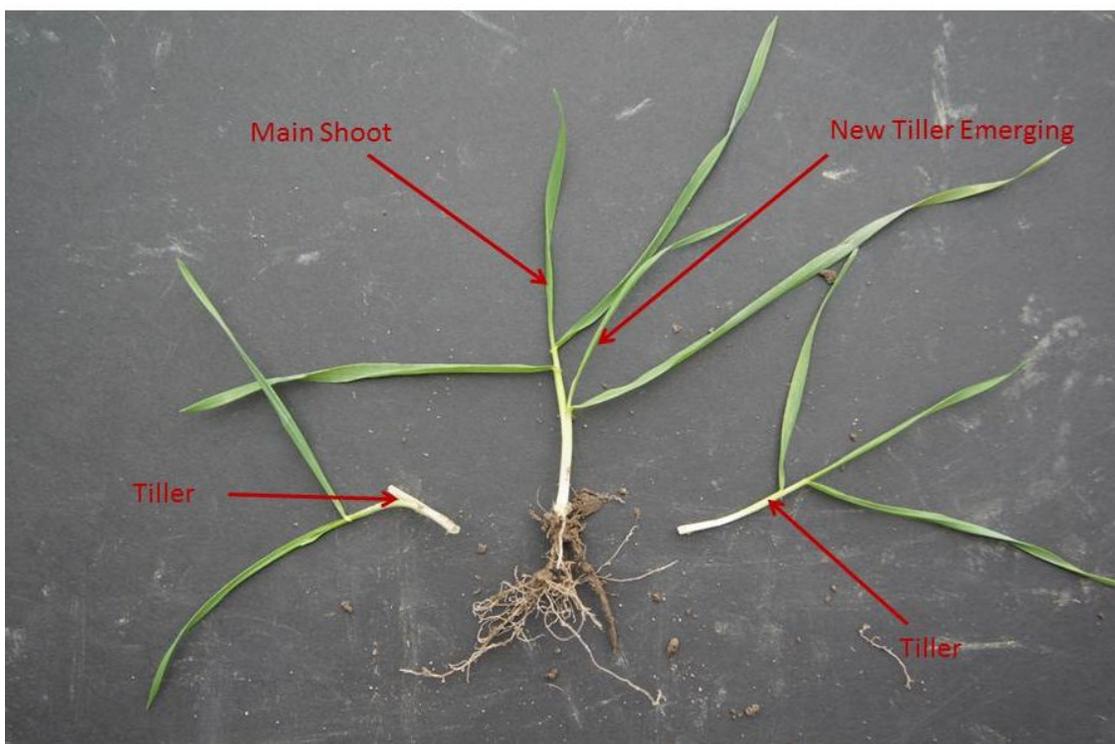
However, with adequate tillering, a nitrogen application should be delayed until pre-jointing, Feekes 5 (mid-March).

Specifically, fields with less than 60 tillers per square foot at green-up, apply 30 to 40 pounds of nitrogen to increase tillering and head size. For fields with 60-80 tillers per square foot apply 20 to 30 pounds.

Applying nitrogen at green-up in a field with over 90 tillers can lead to a thick lush canopy which may increase the risk of disease, lodging and injury from a late cold snap. The time of greatest nitrogen uptake is between jointing (Feekes 6) and flowering. Therefore pre-jointing applications would supply this upcoming demand and reduce plant damage from ground applicators. Research shows a yield boost by splitting applications on less nitrogen efficient sandy and clay soils. Tissue tests just before jointing can help determine

nitrogen needs at jointing.

Remember that low organic matter (<3%), low CEC (<10) soils of southeast Missouri are also prone to low sulfur conditions and sulfur fertilizers should be part of the nutrient program to prevent deficiency. Most low sulfur soils require 10 to 15 pounds per acre of sulfur. Spring sulfur should come in the form of sulfate sulfur found in products such as ammonium sulfate.



Wheat plant with fully emerged tillers separated from main shoot for visual demonstration. Photo by P. Sylvester, University of Delaware

For more information on wheat management during stem elongation see IPM 1022 - Management of Soft Winter Wheat or find it on the web at <http://extension.missouri.edu/>.

Anthony Ohmes, Agronomy Specialist,
University of Missouri, Cape Girardeau, MO.

Cotton Production & Outlook Conference

Tuesday, February 4, 2014

The Fisher Delta Research Center

Portageville, MO

Agenda:

- | | |
|----------------|--|
| 7:30-8:00 am | Registration |
| 8:00-8:20 am | Soil Health and New Irrigation Program-Dr. Gene Stevens, Professor, Fisher Delta Research Center |
| 8:20-8:40 am | Cotton Insect Update-Dr. Moneen Jones, Research Entomologist, Fisher Delta Research Center |
| 8:40-9:00 am | Cotton Weed Control-Jim Heiser, Research Associate, Fisher Delta Research Center |
| 9:00-9:50 am | Cotton Variety Trials-Andrea Jones, Research Associate, Fisher Delta Research Center |
| 9:50-10:10 am | Break |
| 10:10-11:00 am | Products from Industry 5@10 Minutes each |
| 11:00-11:30 am | Missouri Water Use Reporting-Brian Fredrick, Department of Natural Resources, Jefferson City |
| 11:30-12:00 pm | Cotton Outlook and Marketing Strategies-David Reinbott-Agriculture Business Specialist, Scott County |
| 12:00 noon | Introduction of Sponsors-Dr. Mike Milam, Regional Agronomist, Dunklin County |

Lunch

Registration starts at 7:30 am. The first presentation will be at 8:00 am. The program will conclude with a sponsored lunch. For additional information, contact Mike Milam at 573-888-4722 at the Dunklin County University of Missouri Extension Office.

Spring Pasture Weed Control

Late February to mid-March is the recommended spring timing to control biennial and winter annual pasture weeds. The other recommended timing to control these weeds is in the fall. The reason for these timings is stage of growth and development of the target weeds. Applying herbicides to small actively growing weeds is critical to achieve maximum control and prevent seed production. Many biennial and annual winter weeds have two basic stages of development, which are basal rosette (vegetative stage) followed by bolting stalk (reproductive stage). For these plants the herbicide application timing would be the basal rosette stage. An example of this type of development is thistles.

Products containing 2,4-D, dicamba, triclopyr, picloram, aminopyralid, or pre-mixed products containing two or more of these products provide good to excellent control of broadleaf weeds in pasture. Use caution: these products are safe at labeled rates on grass species but can kill or severely injure desirable broadleaves in grass-legume pasture mixes. In some cases spot treatment of areas may provide adequate

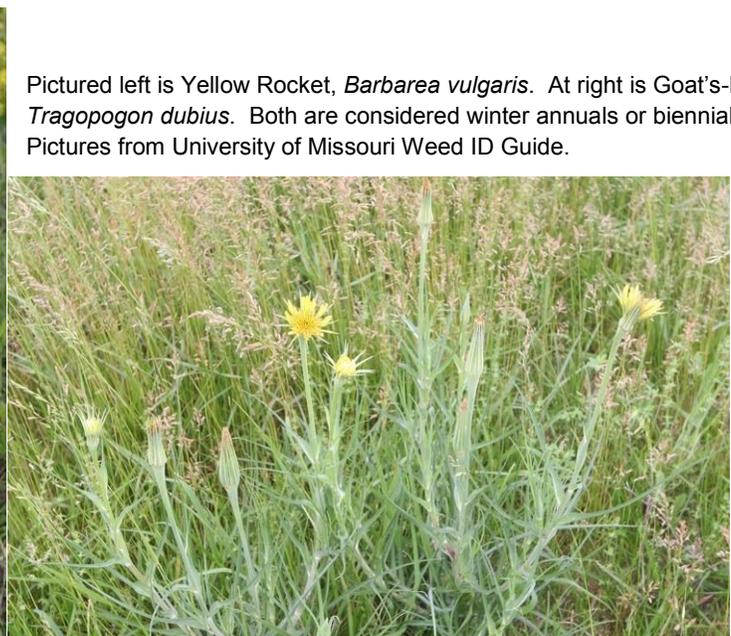
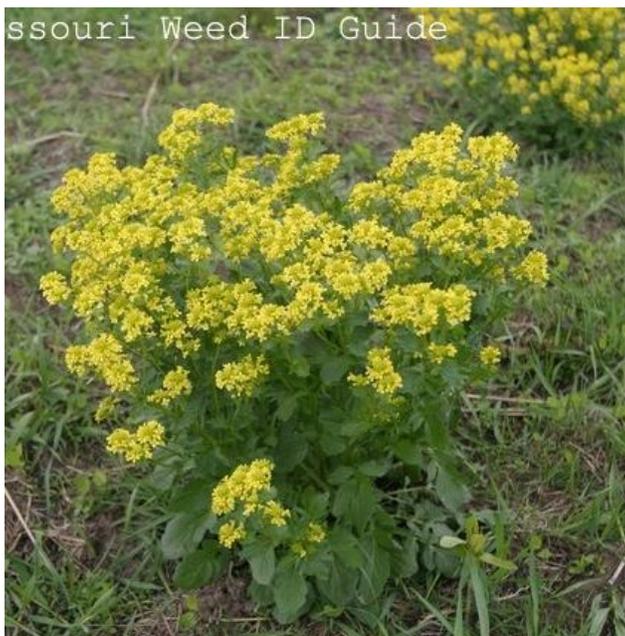
control. Always read label for proper rates, target weeds, and grazing or harvest restrictions.

In addition to herbicide applications, timely mowing will help suppress seed production. Successful mowing for seed suppression must occur prior to pollination. In many cases, a combination of both timely herbicide application and timely mowing will be needed during the growing season to manage weeds and improve pasture health.

For more information refer to MP 581 - Weed and Brush Control Guide at: <http://extension.missouri.edu/p/MP581> or MU Extension Pasture and Brush Control at: <http://extension.missouri.edu/cedar/documents/MUPastureWeedBrush.pdf>

The University of Missouri Extension offers an app for weed identification. Look for [ID Weeds](#) or go to <https://itunes.apple.com/us/app/id-weeds/id559906313?mt=8>

Anthony Ohmes, Agronomy Specialist,
University of Missouri, Cape Girardeau, MO.



Pictured left is Yellow Rocket, *Barbarea vulgaris*. At right is Goat's-beard, *Tragopogon dubius*. Both are considered winter annuals or biennials. Pictures from University of Missouri Weed ID Guide.

Missouri Rice Producers Conference

When: Tuesday, February 25, 2014
Where: The Eagles Club, Dexter, MO – HWY 60 & 25, ¼ mile S.
Time: 7:30 a.m. Registration, Program 8:00 a.m. to Lunch
CEU's: Will be applied for.

Agenda: Moderator: Sam Atwell MU Agronomy / Rice Specialist

7:30 am – Registration, coffee, doughnuts

8:00 am – Welcome

8:05 am – MU Rice Insect Program, - Dr. Moneen Jones MU Research Delta Center

8:20 am – Irrigation, Pumps & Wells – Joe Henggeler, MU Research Delta Center

8:50 am – Rice Issues – Dr. Michael Aide, SEMOU Research Cape Girardeau

9:20 am – Rice Varieties / Breeding – Dr. Donn Beighley, SEMOU Research Malden

9:50 am – Break

10:00 am – Rice Weed Control – Jim Heiser MU Research Delta Center.

10:30 am – Guest Speaker

11:00 am – Rice Production Research – Dr. Gene Stevens MU Research Delta Center

11:20 am – Rice Market Outlook – David Reinbott, MU Ag Business Specialist Scott Co.

11:40 am – US Rice Domestic & Foreign Markets – Greg Yielding, MO Rice Council / US Rice Prod. Assoc.

12:00 pm – Lunch

Industry Representatives on hand to answer questions about their products.

University of Missouri Extension and MU Delta Research Center in partnership with MO Rice Council and Southeast Missouri State University want to thank:

Our Speakers, Eagles Club Mr. Bill Huechel, Rice Consultants and all our Company Sponsors. Be sure to thank all of those mentioned for their support of all MU Extension and Research Programs.

Fertilizer recommendations for Missouri Rice 2014

It's another year and I hope that you have already finished planning for your 2014 rice crop. Like any professional event you plan, now is the time to visualize making your 2014 rice crop. After deciding acreage, selecting fields and varieties, building a fertilizer plan is next on the list. Most rice is in a rotation with soybeans so below are charts for nutrient removal from last season's soybean and rice crop. From your soil sample reports and these charts you can make a judgment on how to put your fertility program into your seasonal rice crop. Your desired soil Phosphorus should be (45 lbs/ac) and Potassium (220 lbs + 5X CEC).

Crop	Portion	N	P ₂ O ₅	K ₂ O	Ca	Mg	S
Soybean	Seed	4.2	0.9	1.5	0.2	0.23	0.2
	Residue	1.3	0.3	0.9	1.5	0.22	0.25
Rice	Grain	0.65	0.28	0.17	0.04	0.05	0.04
	Straw	0.4	0.12	0.9	0.12	0.06	0.08
	Total	1.05	0.4	1.07	0.16	0.11	0.12

Fertilization:

Nitrogen (N):

- Rice varieties differ in the amount of nitrogen (N) fertilizer required to produce optimum grain yields.
- Amounts can range from 0 to 180 pounds of N per acre with 150 pounds being most common.
- Two N application options: 1) 100% applied pre-flood on dry soil when able to maintain timely and seasonal flood. 2) About 70% applied pre-flood on dry soil with remainder (45 lbs. N/acre) applied as a single mid-season application.
- Treat urea with an NBPT-containing urease inhibitor if timely flood application is a concern (less than 2 days for silt loam soils, less than 7 days for clay soils) or use ammonium sulfate.

- Nitrogen sources:
Urea (46-0-0) or DAP (18-46-0) or Ammonium Sulfate (21-0-0-24).

Phosphorus (P) and Potassium (K): Tables below are recommendations for pounds of P and K where soil samples range from low to high and the goal is for 200 bu/acre yield.

Zinc (Zn):

- Zinc deficiency normally occurs on silt and sandy loam soils or precision graded fields.

P2O5 recommendation			
pH	Low	Medium	High
----- lbs. of P2O5 per acre -----			
≥ 6.5	90	60	50
< 6.5	50	30	0
K2O recommendations:			
----- lbs. of K2O per acre -----			
	Low	Medium	High
	120	90	60

- Apply 10 lbs. of granular Zn fertilizer before emergence on silt and sandy loam soils when Zn levels are <4.1 ppm and pH is >6.0.
- Apply liquid Zn sources at a rate to deliver at least 1 pound of actual Zn per acre.
- Apply Zn to the seed at a rate of 0.25 to 0.5 pounds of Zn per hundredweight of seed.

Sulfur (S):

- Rice does not normally require sulfur fertilizer to produce high yields in Missouri.
- Sulfur is most likely to be needed on sandy soils.
- Sulfur may be needed when the SO₄-S soil test level is <10 ppm or a deficiency has occurred in the past.
- 100 lbs. of ammonium sulfate equals 24 lbs. of actual S which will supply sufficient amounts of sulfur.

Sam Atwell, Agronomy Specialist, University of Missouri, New Madrid, MO.

Missouri Blueberry School

February 21-22, 2014

Missouri State University Campus in Springfield, MO

Topics will include spotted winged drosophila, soil health management, preserving blueberry fruit by flash freezing, the Food Safety Modernization Act and its implications for Missouri blueberry producers, disease identification and diagnostic techniques, and updates on the 2014 Small Fruit and Grape Spray Guide.

The second day of the conference, Feb. 22, will include visits to area blueberry farms for hands-on demonstrations of blueberry management.

Registration for the two-day 2014 Missouri Blueberry School is \$50 per person (\$35 for each additional person from the same family or farm) and includes educational materials and a spotted wing drosophila monitoring trap (one per farm or family).

For a registration packet, please contact Kelly McGowan at 417-881-8909 or McGowanK@missouri.edu, or register online at extension.missouri.edu/blueberry/registration.aspx.

For more information about the conference, go to extension.missouri.edu/blueberry or contact Patrick Byers at 417-881-8909 or ByersPL@missouri.edu.

For more information contact Curt Wohleber at 573-882-5409.

Soil Health Workshop: The Keys to Soil Health

Tuesday, March 25, 2014 The Clinton Community Center Sikeston, MO

Wednesday, March 26, 2014 Eagles Lodge in Kennett, MO

9 a.m. to 4 p.m.

This workshop will give basic knowledge of how soil works and how management practices affect the soil. Topics include:

- Soil biology demystified - learn how microbial life is needed for crop nutrient uptake
- Dynamic properties of soil translated - managing for soil structure can help crops withstand drought
- Cover crops rationalized - a great tool for improving soil health but just one part of the whole picture
- Management techniques analyzed - learn how to protect the greatest resource on your farm

\$10 Registration for lunch by March 12, 2014. Call Jill Staples at 573-239-2179



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:

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Future Meetings & Events -

The Missouri Cotton Production and Outlook Conference - Tuesday, February 4, 2014. The Fisher Delta Research Center, Portageville, MO. is at 7:30 a.m. For information, contact Mike Milam at 573-888-4722 at the Dunklin County University of Missouri Extension Office.

Farmer's Market Workshop - February 11, 2014. Black River Electric Cooperative, Fredericktown, MO. Begins at 8:30 a.m. Registration of \$15.00 should be completed by February 4 by calling 573-883-3548.

Cover Crops and Soil Health Forum - February 18, 2014. Perry County MU Extension Center, Perryville, MO. To register call 573-547-4504.

Missouri Blueberry School February 21-22, 2014. Missouri State University Campus, Springfield, MO. Contact Curt Wohleber at 573-882-5409 for more information.

Missouri Rice Meeting - February 25, 2014. The Eagles Club, Dexter, MO. To register call Sam Atwell at 573-748-5531.

Commodities and markets - <http://extension.missouri.edu/seregion/fmmkt.htm>