Agricultural Newsletter

UW-Madison College of Ag & Life Science
University of Wisconsin-Extension

January-February-March
2016
Volume 22 Issue 1

Table of Contents

UW Extension
University of Wisconsin-Extension

Soil Fertility Research Update

Phil Holman
Superintendent
Spooner Ag Research Station

At the UW-Extension Area Soil Update Meetings, Carrie Laboski, UW-Extension Soil Fertility Specialist, presented information on several fertilizer trials.

The first set of trials looked at nitrogen application on winter wheat. This trial looked at the 4 "R's" – 1. "Right" product (urea, SuperU, or ESN) 2. "Right" rate (0, 30, 60, 90, 120) 3. "Right"Time (fall, green-up, Growth Stage 30 or GS30) and 4. "Right" place. The quick take-aways from these trials were that there was no statistical difference between products, 60-70 lbs nitrogen per acre is most frequently the economic optimum rate, and the early spring green-up application was the best timing. In fact, yields from early spring application were significantly better than GS30 (waiting until early stem elongation). Thus, you should try to fertilize at spring green-up for optimum yields of winter wheat. These trials also looked at the use of "on the go" reflectance meters to try to determine nitrogen need. However, this is at the GS30 timing and reflectance results are inconsistent until a yield loss already has occurred.

The second set of trials looked at P & K yearly applications for corn and soybeans on an initially low testing soil for both P & K. These trials showed much greater response to K at various P application rates. Further trials are going to look at K response of crops especially with changes in cropping practices.

The third trials looked at corn starter fertilizer rates of N, P, K and S. A large number of rates and combinations were tested. Starter fertilizer nutrient composition and placement had minimal and inconsistent effects on grain and silage yield. Thus, it is most important to have starter versus worrying about what is in the starter. At the research station, with sandy soils and limited manure, I include sulfur in our corn starter as historically sandy soils respond well to sulfur.

Agricultural NEWSLETTER

produced by
University of Wisconsin-Extension and
UW-Madison College of Ag & Life Sciences

Representing Burnett, Sawyer, and Washburn Counties:

Kevin Schoessow
Area Ag Development Agent
715-635-3506 or 800-528-1914

Richard Otto Wiegand
Area Ag Agent
715-635-3506 or 800-528-1914

Phil Holman
Spooner Ag Research Station
Superintendent
715-635-3735

Representing Ashland, Bayfield, and Douglas Counties:

Jason Fischbach
Matt Cogger
Area Agricultural Agents
715-373-6104

Jane Anklam
Horticulture & Agricultural Agent
715-395-1515

How Much Nutrition is in Those Baled Corn Stalks?

Bruce Anderson
Extension Forage Specialist
University of Nebraska

Corn stalk bales can provide much needed feed over the winter. To use them most effectively, you'll want to find out what they have to offer nutritionally. Sample and test your bales as soon as possible so when snow gets deep or other feeds run out you will already know how to best feed your corn stalk bales.

Begin by testing the bales for protein and energy. You may be surprised at how variable the protein and energy content can be in corn stalk bales. I've seen protein as low as 3% and as high as 7%. Dry pregnant cows need 7-8% protein in their diet so high protein bales will need only a little protein to adequately care for the cows, however bales with 3% protein will need quite a bit of supplement to keep cows in good condition.

Use a protein supplement that is nearly all natural and mostly rumen degradable. Maintenance-level forage diets need degradable protein for the rumen microbes. Remember that urea and other non-protein nitrogen sources aren't used as well. Many bales have pretty good TDN levels, nearly 60%. Cows fed these bales should do very well up until calving with just corn stalk bales and adequate protein supplement. However, stalks rained on before baling can be below 50% TDN. Cows fed these lower quality bales will need some extra energy, too. If your bales came from stressed stalks, like from drought or hail, also get a nitrate test to be sure they are safe.

Variety Trial Results at the UW-Spooner Ag Research Station

Phil Holman
Superintendent
Spooner Ag Research Station

2015 was a good year for crop yields. Frequent rainfall meant very little moisture stress on corn or soybeans. This year the silt loam variety trial site had its highest ever corn grain and soybean yields. Irrigated and dryland sand yields were above average for soybeans, corn silage and the dryland corn grain.

To determine corn variety genetic improvement, I have calculated a 10-year average for the irrigated variety trial. Using yield trends over the last 15 years, varieties are increasing yields by 2.66 bushels per acre per year. The irrigated trial does not have moisture stress complicating individual year results so should show a more *true* genetic ability of corn varieties. The dryland trial, however, is highly influenced by which years we have good rainfall and which years have moisture stress (drought).

Complete Variety Trial Results can be found at: Corn Grain and Silage: http://corn.agronomy.wisc.edu/; Soybean: http://soybean.uwex.edu/; Alfalfa: http://www.uwex.edu/ces/crops/uwforage/alfalfa.htm

Mastitis Severity Scoring Part of Educational Video Series

Pam Ruegg & Doug Reinemann
UW-Extension Dairy Team

In spite of considerable improvements in milk quality, mastitis continues to be the most frequent and costly disease of dairy cows. The use of on farm culturing to direct treatment of clinical mastitis gives farmers the opportunity to make better treatment decisions and reduce costs associated with milk discard and treatment of microbiologically negative cases.

UW-Extension Milk Quality Veterinarian Pam Ruegg has developed a new video series to guide individuals using on-farm culturing. In the fourth episode of the video series, Mastitis Severity Scoring, Dr. Ruegg discusses identifying cows that are eligible for selective mastitis therapies through a mastitis severity scoring program.

Mastitis Severity Scoring is one video of many in a new video series "Using On Farm Culturing to Improve Mastitis Treatment." Other episodes also include:

- Episode 1: Treatment Decisions for Clinical Mastitis
- Part 1: Will Antibiotics Help the Cow?
- Part 2: Using Culture to Make Selective Treatment Decisions
- Episode 2: How to Set Up Your On Farm Laboratory
- Episode 3: Selecting Culture Media
- Episode 4: Mastitis Severity Scoring

UW-Milk Quality promotes an integrated, team-based approach to best manage udder health and milk quality. Producing high quality milk is not a one-person job. It takes farmers and their local dairy advisors to be able to evaluate, manage and improve milk quality. At UW-Milk Quality, we develop tools and resources to help dairy producers meet their milk quality goals and increase farm profitability.

For more information regarding milk quality, please visit UW-Milk Quality or contact UW-Extension Milk Quality Specialist Pam Ruegg. Additional videos regarding milk quality can be found at the UW Milk Quality Channel on YouTube. For more information regarding milking systems, please visit UW Milking Research and Instruction Laboratory or contact UW-Extension Milking Systems Specialist Doug Reinemann.

Soybean Farmers Needed for State-Wide Survey

Kevin Schoessow
Area Agricultural Agent
Burnett, Sawyer & Washburn Counties

UW-Extension Soybean and Wheat Specialist Dr. Shawn Conley is asking soybean farmers from across the state for help in collecting data on current soybean management practices in Wisconsin. The goal of this survey is to identify soybean management practices that prevent Wisconsin soybean farmers from reaching maximum yields on their farms. The survey asks farmers to share management practices such as planting date, variety, seeding rate, seed treatment, tillage, fertilizer and pest management along with estimated yields.

As a local UW-Extension Agriculture Agent, I have been asked to help Dr. Conley to identify soybean farmers from NW Wisconsin who might be interested in this study and to help collect data. If you grew soybeans in 2014 and 2015 and are interested in participating in this survey, please contact me or other local UW-Extension Ag Agents for more information. The survey asks for farmers to provide information on four soybean fields on your farm and includes about 20 questions for each field.

The data will be sorted by regions and an in-depth analysis will be conducted to see what on-farm practices might be causing a yield reduction on producer farms. For example, based on data analysis it might be determined that seeding rate and planting date are key on-farm practices that might be limit your yields, or perhaps type of seed treatment or in-season foliar fungicides applications are holding your yields back.

Each participating farm will receive feedback on what production system factors might be holding back your current yields and how you can improve soybean yields on your farm.

For this project to be successful, we need a wide range of soybean producers from across the state. Data from beginner, advanced, progressive and less progressive soybeans producers is needed. The project is sponsored by the Wisconsin Soybean Marketing Board and the North Central Soybean Research Group.

If you are interested please call Kevin Schoessow at the Spooner Area Ag Agents Office at 1-800-528-1914 or 715-635-3506.

Corn and Soybean Market Outlook – Nov 2015

Brenda Boetel
Ag Economist
UW-River Falls

Corn has traded lower this last week in anticipation of the USDA WASDE report. The report was even more bearish than most analysts expected. USDA increased the average yield per harvested acre from 168 to 169.3. Harvested acres remained the same. Production increased to 13.654 billion bushels, up 0.7% from last month's estimates. In additional to supply changes, the USDA increased the estimated usage for feed and residual 0.5%, but reduced ethanol usage by 1.4% and exports by 2.7%. Carryover increased then by 199 million bushels, 12.7%, giving a stocks to use ratio of 12.9%. The weekly progress report showed corn harvest 93% complete vs. 88% on average. Basis remains strong in parts of Wisconsin, but some areas have experienced significant variability. Ethanol margins are finding some support from the firmer energy trade and ethanol production increased last week. While Brazilian corn exports of 5.55 million tonnes were a record in October. On the December chart support is at the $3.57 contract low. Upside resistance is at the $3.77 20-day moving average. The seasonal trend is for corn prices to continue lower throughout November, and then increase into April 2016. As a producer, if you have unpriced corn in storage, you will want to monitor basis levels. The stronger than expected basis will provide some pricing opportunities. Remember that storage should be a basis decision, not a price decision, as the market trend is for prices to increase throughout the spring. If basis is strong and you want to take advantage price increases throughout the spring, store on paper. Producers can do this by marketing their corn and buying back March futures to take advantage of the currently weak spread between December and March. Another option would be to consider selling call options. This will limit upside potential, but will provide revenue to add to crop sales later.

Soybeans have also traded lower the last few weeks. The USDA WASDE increased the average yield per harvested acre from 47.2 to 48.3 bushels. Harvested acres remained the same. Production increased to 3.981 billion bushels, up 2.3% from last month's estimates. Analysts anticipated a 0.6%. USDA increased the estimated crushings at 1.890 billion bushels, up 0.5%, and exports at 1.715 billion bushels, up 2.4%. Carryover increased by 465 million bushels, up 1.4%. The weekly progress report showed harvest 95% complete vs. 93% on average. On the January chart, support is down at the $8.57 contract low which we came within a penny of this yesterday. First resistance is at the 10-day at $8.75 then the 20-day at $8.87. The seasonal trend is for price to increase from now into May 2016, but there is very limited long-term upside potential for soybeans based on current supply and demand factors. Remember that when a market has no new news, it tends to move lower. It will take significant bullish news to move soybean prices higher. Likely producers have very little unpriced soybeans in storage. If you are storing unpriced beans, look for short-term pricing opportunities. For more information, visit ipcm.wisc.edu/.

Understanding Milk Urea Nitrogen

Adapted from Matt Lippert
UW-Extension Dairy Team

Milk Urea Nitrogen (MUN) is often routinely included in the lab report received from the milk plant. High MUN levels have been implicated with lower fertility. Research trials on fertility have been inconclusive (Elrod and Butler, 1993; Elrod et al., 1993; Ferguson et al., 1993; Butler et al., 1996 Carroll et al., 1988). Grazing herds have high rumen degradable protein and typically high MUN levels, but not lower fertility.

TMR diets have been trending lower in total protein as nutritionists have begun to utilize amino acid and protein fraction balancing instead of using crude protein as the standard for formulation. As diets have dropped in protein, fewer high MUN tests have come back from dairy plants as well. MUN is not a measure that is no longer necessary, however.

MUN is measured in milligrams per deciliter (mg/dl) ranging from below 6 to as high as 20 on individual cows with a slightly lower range for bulk tank samples. Season, sampling time, breed, animal age and stage of lactation are all factors in this number, but the largest factor is related to the ration. The amount and type of protein and carbo-hydrate, and the manner in which they are fed are the largest factors affecting MUN. High MUN is an indicator of protein fed but not fully utilized by the cow. Using the milk sample to identify this ration inefficiency can help reduce excess purchased protein. Often high MUN is associated with milk production

that has not been realized. Reaction to a high MUN may be one or a combination of several feeding changes. It may not be the total protein that is the problem, rather the rate at which the protein is broken down in the rumen and whether there is a complimentary carbohydrate source available for the rumen bacteria. The amount of protein and carbohydrate fractions must be in the right ratio and availability so that rumen microbes can build new proteins and utilize dietary protein.

Monitoring and reacting to changes in MUN also have value as dairy producers implement increasingly close nutrient management plans. A response to a high MUN if ration protein level is moderate may be an increase in grain feeding, it might be a review of the particle size of the grain or the starch availability in the silage, or maybe introduction of a sugar source is indicated. If high protein forage such as alfalfa haylage is fed, a change of the types of supplemental proteins or inclusion of other forages in the diet may be a solution. The solution not always an easy one, but without MUN, the problem would not even be noticed. Very low MUN may suggest increasing amounts of protein sources. In response to heat stress or crowding, cows may change their meal size and eating frequency. These changes may affect MUN levels without any change in the diet fed to the herd. MUN can be used as an indicator of the consistency of the diet and the cow's environment. If MUN has been steady but is starting to be more random, it has serves like a canary in the coal mine to give us early notice of potential problems and provides opportunity to improve cow environment and diet.

Discover the Benefits of Using Cover Crops

Adapted from
Wisconsin Natural Resources Conservation Service

A cover crop is grasses, legumes, forbs or other herbaceous plants that are established for seasonal cover and conservation purposes. Cover crops are planted in the late summer or fall around harvest and before spring planting of the following year's crops. Common cover crops used in Wisconsin include winter hardy plants such as barley, rye and wheat. Other less common, but also effective cover crops include oats, spring wheat, hairy vetch, red clover, turnips, canola, radishes, and triticale. This practice may be used to reduce wind or water erosion by establishing cover after a minimal residue crop, to use up excess nutrients in the soil profile, for weed suppression, to provide nutrient for the next crop, to increase carbon sequestration and improve soil structure. Cover crops may be used on all lands needing vegetative cover for natural resource protection and improvement. They are an excellent tool for helping to improve soil health.

Cover crop benefits include: (1) reduce soil erosion, (2) improve soil health, (3) increase soil porosity and infiltration, (4) fight weeds, (5) improve soil microbiology, (6) produce / scavenge crop nutrients, (6) reduce soil compaction, (7) improve nutrient cycling, (8) improve soil organic matter, (9) protect water quality, (10) protect the environment, (11) enhance wildlife habitat, and (12) increase yields.

Cover crops can be seeded with drills, broadcast equipment, or aerially applied to get the cover crop started early enough to achieve the desired results. Cover crops are ideal for planting after early harvested crops such as wheat, sweet corn, seed corn, peas or other vegetables, and silage corn. They can be interseeded under corn and soybeans. To get the maximum benefit from cover crops, they need to become an integral part of your cropping system. Whether you grow just corn and soybeans or you have a more diverse rotation that includes wheat or vegetable crops, livestock and manure, there are opportunities to include cover crops in your production system. When you select a cover crop, make sure it provides benefits that meet your farming objectives.

For more information about cover crops such as cover species, seeding dates and seeding method, visit your local USDA service center, or visit the Wisconsin NRCS website at www.wi.nrcs.usda.gov/topics/technical resources.

References:

- Risk Management Fact Sheet-Cover Crops" http://www.rma.usda.gov/pubs/rme/fctsht.html
- Wisconsin NRCS Practice Standard 340
- Cover Crops Wisconsin Agronomy Technical Note 7
- Cover and Green Manure Crops Benefits to Soil Quality
- NRCS Cover Crop Termination Guidelines
- RMA cover crop fact sheet http://www.rma.usda.gov/pubs/rme/fctsht.html
- RMA 2014 crop policies and insurance: http://www.rma.usda.gov/policies/2014policy.html

2015 Grass Forage Trial – Spooner Ag Research Station

Otto Wiegand
Area Agricultural Agent
Burnett, Sawyer, & Washburn Counties

Phil Holman
Superintendent
Spooner Ag Research Station

A grass forage trial was begun in May and completed in October at Spooner Ag Research Station including a new crabgrass forage variety, teff, perennial ryegrass, orchard grass and smooth brome. This trial was conducted by Phil Holman, the Superintendent of the Spooner Station, Professor Yoana Newman of UW-River Falls, Randy Gilbertson, the NW Graziers Network Planner, and Otto Wiegand. Dave Fogerty, a Burnett County bison farmer, obtained the crabgrass seed from a supplier in Oklahoma. The crabgrass, an annual hybrid grown in the Plains States, is considered to be drought-tolerant and not invasive. Teff is an annual grain crop originally from Ethiopia. It can be grown for forage, has moderate to good yields and is highly-digestible. Fogerty has grown teff on his farm for three years.

There were three planting dates from May to June, except for the teff which is not frost-tolerant. Periodic follow-ups were done both at the Dave Fogerty Farm, where crabgrass and teff were also planted, and at the Station. Two student field trips from UW-River Falls with Professor Newman occurred in October. The grass yields were low at the Station, probably due to very light soil and low fertility, but forage qualities were good. The orchardgrass, brome and ryegrass did not establish very well. Only crabgrass and teff were analyzed. The crabgrass was allowed to re-seed itself for next year. Trial yields and forage analyses are attached below. Crude protein was higher for the second cutting. Acid-detergent fiber (ADF), neutral-detergent fiber (NDF) and relative forage quality (RFQ) were consistent. The RFQ values for both crabgrass and teff were high enough to be of dairy-quality, however both would require significant protein supplementation for a dairy ration. There were not enough replications to run statistics.

Forage Quality (1 sample) - July

	%C.P.	ADF	NDF	RFQ
Crabgrass Planting 1	9.3	33	57	154
Crabgrass Planting 2	9.8	32	57	150
Crabgrass Planting 3	10.2	32	56	148
Teff Planting 2	8.4	35	63	131
Teff Planting 3	8.9	34	62	134

Forage Quality (1 sample) - Sept

	%C.P.	ADF	NDF	RFQ
Crabgrass Planting 1	12.9	33	56	156
Crabgrass Planting 2	11.6	34	58	147
Crabgrass Planting 3	12.2	34	59	142
Teff Planting 2	12.6	33	60	142

Total Yield 2015 Yield (tons/acre)

	Plant 1	Plant 2	Plant 3	Average
Bromegrass	0.30	0.24	0.64	0.39
Crabgrass	1.16	1.31	1.68	1.38
Orchardgrass	0.46	0.52	0.45	0.47
Perennial Ryegrass	0.17	0.24	0.51	0.31
Teff	not planted	0.93	1.75	1.34

This Quarter's Events

Contacts: UW-Extension Ag Agents Otto Wiegand or Kevin Schoessow, Spooner Station, 715-635-3506, Jane Anklam, Douglas Co, 715-395-1363, Jason Fischbach or Matt Cogger, Ashland & Bayfield Counties, 715-682-8393, Tim Jergenson, Barron Co, 715-537-6250 for more information.

Jan 12-14, Tues-Thurs – Wisconsin Crop Management Conference and Agri-Industry Showcase, Madison – Alliant Energy Center, advance registrations by Dec 18, contact 608-265-2660, or register at http://go.wisc.edu/w51b57

Jan 14-16, Thurs-Sat – GrassWorks Grazing Conference, Wis. Dells – Chula Vista Resort, early registration discount by Jan. 1, visit Grassworks.org or contact Heather Flashinski 715-289-4896

Jan 19-20, Tues-Weds, 10-3:30 – Rice Lake Farm Show – Red Cedar Mall

Jan 22, Fri, 9-3:30 - Organic Vegetable Production Winter Workshop, Amery - Hungry Turtle Institute, contact Heidi Doering 715-531-1930

Jan 24-26, Sun-Tues – Wisconsin Fresh Fruit and Vegetable Conference, WI Dells – Kalahari Resort & Convention Center, contact 920-478-4277

Jan 26, Tues, 6-8 PM - Farm to Table Tasty Vegetables, Superior - featuring Julie Dawson, UW-Madison Hort. Dept, modern heirloom vegetable varieties for local food markets, farm to table, and direct market sales, contact 715-394-5712 to register.

Jan 30, Sat – Northern Wis Beef Producers Annual Meeting, Rice Lake – Turtleback Conference Center, contact Kate Whiting 715-642-0804

Feb 4, Thurs, 10-2:30 – CAFO Meeting, Rice Lake – WITC, contact Tim Jergenson, 715-537-6250

Feb 6, Sat – Indianhead Shepherds Clinic, Rice Lake – WITC, contact Tim Jergenson 715-537-6250, or register on-line at Indianhead Sheep Breeders Assoc.

Feb 13, Sat, 9:30-3:30 - Heart of the Farm Women's Conference, Spooner – Ag Research Station, contact Otto Wiegand or Kevin Schoessow 715-635-3506 (See article)

Feb 24, Weds – Midwest Cover Crops Conference, Madison – UW Campus, visit www.mccc.msu.edu, or contact Matt Ruark at mdruark@wisc.edu.

Feb 25-27, Thurs-Sat – MOSES Organic Conference, LaCrosse – early registration discount by Jan 18, contact MOSES at 715-778-5775, or www.mosesorganic.org

Mar 4-5, Fri-Sat – Wisconsin Ag Women's Summit, Madison – Marriot West, Middleton, WiAgWomensSummit.com

Mar 5, Sat, 9:30-3:30 – NW Graziers Annual Conference, Hayward – LCO College, agenda yet to be determined, Otto Wiegand or Kevin Schoessow 715-635-3506

Mar 9, Weds, 9:00-3:00 – Pesticide Applicator Training, Spooner – contact Kevin Schoessow 715-635-3506 – other sites are Balsam Lake Jan 21, Barron Feb 16, Douglas or Ashland sometime in March

Mar 11, Fri – Dairy & Beef Well-Being Conference, Platteville – UW Campus & Pioneer Farm, contact Jennifer Blazek, Dane County UW-Extension, at 608-224-3717, or http://fyi.uwex.edu/animalhusbandryconference/home/

Mar 12, Sat – Economic Sustainability Conference, Hayward – LCO Convention Center, featuring Winona LaDuke, contact Amber Marlow 715-634-4790 x156

Mar 21-22 – St Croix Summit, UW-River Falls - contact St Croix River Assoc, 715-483-3300

Heart of the Farm – Women in Agriculture Conference

Sat. February 13, Spooner, WI

Mark your calendars! A Heart of the Farm - Women in Agriculture conference will be held at the Spooner Ag Research Station on Saturday, February 13. The Heart of the Farm-Women in Agriculture conference series is a UW-Extension program that is committed to addressing the needs of farm women by providing education on farm business topics, connecting them with agricultural resources and creating support networks.

This conference will provide women with the opportunity to network with other farm women and learn about farm business arrangements, how you, as farm women, can make a difference and how to balance your life. The agenda is not yet finalized but will include a talk on communicating between generations. The conference begins with registration at 9:00 a.m. and will end at 3:15 p.m. with door prizes.

Inside This Issue

find us on Facebook **www.facebook.com/spoonerag**

Agricultural Newsletter

January
February
March

2016

Kevin A. Schoessow

Kevin Schoessow
UWEX Area Agricultural Agent