Greetings,

I hope fall field work has finished up! As you store machinery away for the winter, it might be a good time to focus on the implement of husbandry law. The Wisconsin legislation that was signed into law in April 2014 as Wisconsin Act 377, updates the definition of implements of husbandry (IoH), creates a definition for an agricultural commercial motor vehicle (Ag CMV), provides an additional weight allowance from a maximum single axle weight of 20,000 pounds to 23,000 and increases the maximum gross vehicle weight from 80,000 to 92,000 pounds. Other components of the law address length and width limits, safety concerns including lighting and marking, and clarifies rules of the road.

As local governments decide which option they prefer to govern IoH and Ag CMV, permits will need to be filled out by local farmers and haulers to abide by this law. More information on the permits can be found on the Wisconsin Department of Transportation website: www.agvehicles.dot.wi.gov.

Hopefully crop producers have started to become familiar with agriculture risk coverage (ARC) and price loss coverage (PLC). The Agricultural Act of 2014 eliminated the counter-cyclical program, average crop revenue election program, and the supplemental revenue assistance payment program and replaced them with ARC and PLC. Between now and February 27, 2015, owners can reallocate their base acres and update their yields through the Farm Service Agency.

Producers then have to make a one-time election decision of PLC, ARC County, or ARC Individual Coverage by March 31, 2015. More information can be found online at www.fsa.usda.gov/arc-plc. The FSA office in Calumet County will be undergoing some staff changes as of the first of the year, so I would suggest calling ahead to set up appointments.

As always, take a look at some of our upcoming programs, and please don’t hesitate to contact me with any questions.

Happy Holidays!

Eric Ronk
Agriculture Agent
UWEX – Calumet County
January 2015

6   Agronomy Update Meeting, 12:00 noon, Fond du Lac
7   Agronomy Update Meeting, 7:30 am, Liberty Hall, Kimberly
7   Dairy Modernization Meeting, 9:30 am, UW-Fond du Lac
8   Dairy Modernization Meeting, 9:30 am, The Ravine, Green Bay
13-15 Wisconsin Crop Management Conference, Madison
14   Holstein Breeder Annual Meeting, 12:00 noon, Neighborhood Pub and Grill, Brant
19-21 MFA/PNAAW Conference, Wisconsin Dells

February 2015

3   CAFO Meeting, 8:30 am, Tundra Lodge, Green Bay
4   CAFO Meeting, 8:30 am, New London
4 & 11 How Prepared Are You? Managing Dairy Employees Effectively – A Bilingual Middle Manager Training on Employee Management, 9:00-3:00 pm, UW-Fond du Lac
5 or 6 Forage Council Annual Meeting (TBD)
10  CAFO Meeting, 8:30 am, UW-Fond du Lac
10 & 17 How Prepared Are You? Managing Dairy Employees Effectively – A Bilingual Middle Manager Training on Employee Management, 9:00-3:00 pm, The Ravine, Green Bay
12  Private Pesticide Applicator Training, 9:00-3:00 pm, Courthouse, Room #017, Chilton
18  Grain Crops Clinic, 10:00-3:00 pm, Cobblestone Creek, Brillion
23-25 Midwest Manure Summit, Radisson Hotel and Conference Center, Green Bay
27 or 29 ARC/PLC Meeting (TBD)

Winter Manure Spreading Regulations

The Calumet County Resource Management Department wants to remind farms about manure spreading regulations on frozen ground. With the late harvest we had this year, there are still quite a few manure storage facilities in the county that need to be emptied going into the winter months.

When frozen or snow-covered soils prevent effective incorporation at the time of application implement the following (CAFO farms may have additional restrictions):
1. Do not apply nutrients to areas within 1,000 feet of a lake or pond
2. Do not apply nutrients to areas within 300 feet from a stream or river
3. Do not apply nutrients within 200 feet of a well, sinkhole, or fractured bedrock
4. Do not apply nutrients on slopes greater than 9% (12% if contoured)
5. Do not exceed the phosphorus removal of the following growing seasons crop when applying manure
6. Liquid manure applications are limited to 7,000 gallons per acre

The online Wisconsin Manure Management Advisory System offers Runoff Risk Advisory Forecast (http://www.manureadvisorysystem.wi.gov), a tool all farmers can use to assess how high the risk of runoff is for their general location before they spread manure. The tool uses weather forecasts of rain or melting snow, along with soil moisture, slope land cover, and snow cover.

All farmers are required to follow a nutrient management plan when applying nutrients. We advise all farmers to work closely with their crop consultant to determine the best fields and rates whenever manure applications need to occur.

For further assistance or questions regarding manure spreading please contact Amanda Kleiber in the Resource Management Department at (920) 849-1493 ext. 274. Also please let Amanda know if you have a storage facility that is not being used or will have extra capacity over the winter months.

Private Pesticide Applicator Training

Thursday, February 12, 9:00-3:00 pm, Calumet County Courthouse, Room #017

For those interested in becoming certified or recertifying as a private pesticide applicator, there will be training offered on Thursday, February 12. This training will take place in Room #017 of the Calumet County Courthouse from 9:00 am to 3:00 pm.

Participants need to stop in at the UW-Extension Office to pick up the manual at least one week prior to the training. Cost for the manual and certification process is $30.00 per person and is payable at time of registration.

The training session will begin with presentations, there will be a 45 minute break for lunch, but lunch is own your own and finish up with the exam in the afternoon. The minimum score to pass the examination for those attending the training session is 50 percent.

The State of Wisconsin requires any person taking a certification exam to provide positive identification and their Social Security Number. Positive forms of identification include a birth certificate, state-issued identification card, or a driver’s license. Also, on the day of the training, please bring your training manual and a calculator.

If you have any questions, please contact the Calumet County UW-Extension Office at (920) 849-1450.
February 18, 2015
10:00 am to 3:00 pm
Registration begins at 9:30 am

4 CCA credits have been applied for

Presentations*

Wet Corn Mitigation: How Do We Keep Drying Costs Down?
- Joe Lauer, UW-Extension Corn Specialist

Systematic Optimization of Yield-enhancing Applications in Soybean:
A Regional and National Overview
- David Marburger, Soybean PhD Candidate

Managing N, P, and K in a Low Grain Price Environment
- Carrie Laboski, UW-Extension Soil Fertility Specialist

Opportunities for Improved Crop Management Using Remote Sensing
- Brian Luck, UW-Extension Precision Agriculture Specialist

Agricultural Risk Coverage or Price Loss Coverage – Which is Right for Me?
- Kevin Jarek, UW-Extension Crops, Soil and Horticulture Agent
- Scott Reuss, UW-Extension Crops, Soils and Horticulture Agent

*Presentation times will vary by location

Grain Crops Production Clinic Registration Form - Please register by Wednesday, February 13, 2015

Name: _____________________________________________________ Phone: ____________________________
Address: _________________________________________________ City: ___________________ Zip: ________

Where do you plan to attend?
_____ Cobblestone Creek, Brillion
_____ Doxbee’s Banquet & Buffet, Seymour

_____ person(s) x $25/person = $_______

Return registration to:
For Brillion:
Grain Crops Clinic
Calumet Co. UWEX
206 Court Street
Chilton, WI 53014
920-849-1450 x5

For Seymour:
Grain Crops Clinic
Outagamie Co. UWEX
3365 W. Brewster Street
Appleton, WI 54914
920-832-5121

Make check payable to:
UW-Extension
Milk prices continue to show weakness from their peak back in September. Factors that are pushing milk prices lower include the increase in U.S. milk production, holiday orders by buyers of cheese and butter are about complete, and a continued decline in U.S. dairy exports. USDA’s estimate of U.S. milk production shows October production up 3.8% from a year ago, the result of 0.8% more milk cows and 2.9% more milk per cow. The September milk production increase was revised upward to 4.2%. While milk production was flat at this time last year, this is a relatively high increase. Of the 23 reporting states, 13 had added milk cows from year ago with increases of 32,000 head in Texas, 17,000 in Michigan, and 10,000 head in Idaho. Cow numbers were unchanged for California and down 3,000 head in Minnesota and 2,000 head in Wisconsin. Milk cow numbers have increased by 78,000 head since the end of last year. No state had less milk per cow than a year ago.

Milk production increases for October from a year ago were led by Texas 11.6%, Colorado 9.7%, Utah 7.6%, Michigan 7.1%, and Kansas 6.9%. Milk production was up 2.7% in California. 5.1% in Idaho, 3.0% in New York, 4.0% in Iowa, 2.8% in Minnesota, 4.0% in South Dakota, and 2.4% in Wisconsin.

Retail sales of butter and cheese are always a seasonal high during the holidays. Retail buyers need to build inventory for these peak sales by early November. Thus, buyer purchases are now lower resulting in lower wholesale butter and cheese prices.

World milk production continues well above a year ago for major exporters of dairy products, in particular New Zealand, Australia and the EU-28 countries. China has backed off from its very aggressive buying of dairy products on the world market earlier in the year (China was the second largest customer for the U.S.) as they have accumulated stocks of dairy products. The Russia/Ukraine issue where Russia has banned imports from the EU-28 has disrupted EU exports. The result of these factors has been a drop in world dairy product prices by about 50% from earlier in the year putting prices well below U.S. dairy product prices. U.S. dairy exports were setting new record highs the first half of the year and are now experiencing declines. The latest export data for September showed the following exports compared to a year ago: butter down 79%, cheese still 9% higher but new orders declining, nonfat dry milk down 29%, dry whey exports down 13%, whey protein concentrate down 19%, with lactose up 7%.

Stocks of dairy products have been well below year ago levels for butter and relatively tight for cheese. Dairy product production is increasing with more milk and stocks will become less tight. Butter production was still running 1.6% lower than a year ago in September. Compared to September a year ago American type cheese production was 4.0% higher with cheddar production 5.9% higher, and production of all types of cheese up 4.7%. Nonfat dry milk production was 54.1% higher with skim milk powder production 24.5% lower reflecting reduced exports. September 30th stocks of butter were still 37.3% lower than a year ago, American cheese stocks 4.5% lower, total cheese stocks 5.4% lower, but nonfat dry milk stocks 17.9% higher.

Dairy product prices continue to show weakness. CME butter set a record high in September at $3.06 per pound, averaged $2.31 for October, has been around $2 thus far for most of November, but as of the 19th it had fallen to $1.9875. CME cheddar barrels were as high as $2.49 per pound in September, averaged $2.154 for October, and as of November 19th the price was below $2.00 at $1.915. The 40-pound cheddar block price was as high as $2.45 per pound in September, averaged $2.20 for October, and as of November 19th the price was well below $2 at $1.80. Nonfat dry milk which was trading near $1.40 per pound in October is now $1.28 and dry whey which was about $0.61 per pound in October is now about $0.59. We can expect additional weakness in these dairy product prices as we close out this year and head into next year.

These lower dairy product prices will put the November Class III price near $21.75 compared to a record of $24.60 in September. The Class III price may be near $18.55 for December. For the year the Class III price will average near $23.40, about $5.40 higher than the $17.99 average in 2013. The November Class IV price will be near $18.05 compared to its peak of $23.89 back in August, and may be as low as $16.90 for December. The Class IV price will average about $22.10 for the year, about $3.50 higher than the $19.50 average in 2013. The November U.S. All Milk price will be near $23.10 compared to the peak of $25.70 back in September, and may be near $19.95 for December. The U.S. All Milk price will average near $24 for the year, about $4 higher than the $20.05 average for 2013.

As we look into 2015 milk prices will show further weakness, but opinions of the extent of weakness vary considerably. The record milk prices experienced in 2014 will encourage more milk production going into 2015. USDA’s projecting milk production will increase 3% in 2015 as cows are added and with lower feed costs dairy producers feed for more milk per cow. But, dairy producers appear to be expanding cow numbers rather slowly as replacement numbers are rather tight and of high value, and cow slaughter prices remain high. Dairy producers recognizing milk prices will be lower may be more cautious as well in expanding. So the 3% increase in milk production could be a little on the high side. There is a much uncertainty as to the level of dairy exports for 2015. Milk prices are at a 5 year low in New Zealand and have declined in the EU-18 countries. This may slow the increase in milk production in these major exporters. China could come back stronger in world product purchases by the second half of the year. World dairy product prices could be at their low point and will likely show some strength as we move through the year. But, it appears that U.S. dairy exports will be lower in 2015 than 2014.

The Class III price could be below $18 by January and in the low $17’s February through June. While earlier it looked like the Class III price could stay above $17 for all of 2015, a Class III price in the mid to high $16’s May through June could well happen before showing some strength for the last half of the year. Some are predicting a Class III price below $16 this summer which it possible if the increase in milk production runs a good 3% and exports are weaker. With much lower butter and nonfat dry milk prices the Class IV price could be near $16 by January and below $16 through June with some strengthening thereafter. While milk prices will average considerably lower in 2015, milk prices are very sensitive to small changes in milk production, milk sales and exports making final prices for 2015 in a range of possibilities.
Dairy Modernization Meeting - 2015
“Building Our Dairy Future”

Wednesday, January 7
UW-Extension Fond du Lac
400 University Drive, Fond du Lac, WI

Thursday, January 8
The Ravine
2633 Manitowoc Road, Green Bay, WI

9:30 a.m. Registration (milk, coffee, juice and rolls available)
10:00 am How to Milk 100 Pounds Per Cow Per Day
   - Dr. Nigel Cook, Professor of Medical Sciences and Food Animal Production Medicine, UW Madison
     School of Veterinary Medicine.
11:00 am Basic Financials—What Does a Lender Look For
   - Paul Dietmann, Emerging Markets Specialist, Badgerland Financial (Fond du Lac)
   - Laurie Schetter & Michelle Backhaus, Senior Financial Services Officers, Greenstone Farm Credit
     Services (Green Bay)
11:45 am Financing and Loan Options
   - Tom Brandt, Farm Loan Specialist, USDA Farm Service Agency
12:15 pm Lunch and Sponsor Introduction
1:00 pm Waste Storage Facilities—Cost and Quality
   - Drew Zelle, Engineering Specialist, D.A.T.C.P. (Fond du Lac and Green Bay)
   - Ryan Rice, Engineering Specialist, Fond du Lac L.W.C.D. (Fond du Lac)
   - Matt Woodrow P.E.—Engineering Unit Leader, D.A.T.C.P. (Green Bay)
2:00 pm Smooth Transitions—How to Keep Your Fresh Cows Fresh
   - Dr. Nigel Cook, Professor of Medical Sciences and Food Animal Production Medicine, UW Madison
     School of Veterinary Medicine.
3:00 pm Wrap-up & Questions

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Dairy Modernization Meeting Registration Form
Registration Deadline: December 29

Name: _______________________________ Phone: _______________________________

Address: _______________________________ City: _______________________________ Zip: ______________________

E-Mail Address: _______________________________

_____ January 7, Fond du Lac UW-Extension Office

Return registration and payment to:
Dairy Modernization Meeting
UW-Extension Fond du Lac Co.
Room 227 Administration/Extension Bldg
400 University Drive
Fond du Lac, WI 54935
920-929-3171

_____ January 8, The Ravine, Green Bay

Return registrations and payment to:
Dairy Modernization Meeting
UW-Extension Oconto Co.
Courthouse
301 Washington Street
Oconto, WI 54153
920-834-6845
The Department of Agronomy will offer Crop Production and Management Meetings at eight locations during 2015. Joe Lauer, Dan Undersander and Shawn Conley will present the latest information on hybrid/variety performance, an analysis and discussion of last year’s growing season, and updated recommendations for field crop production. The registration fee includes a meal and information materials. Certified Crop Advisor CEU credits have been requested (3.0 hours-Crop Management).

**Discussion Topics include:**

**Forages**
- Alfalfa stand changes stand over time.
- Performance of GM alfalfa varieties and
- Potential for gene transfer to non GMO fields
- When to use alfalfa-grass mixtures

**Corn**
- Corn Response to Seeding Rate: The Implications for Variable Rate Seeding
- Is the corn-soybean rotation sustainable? Evidence from long-term cropping system trials

**Soybeans and Small Grains**
- WI Soybean and Winter Wheat Year in Review
- Multi-State High Yield Soybean Project Results: a First Look
- Should we consider in-furrow applications in soybean

A “walk-in” fee will be charged to those who have not preregistered. Extra information packets are available for $18.00 each. **Make your reservations with the host agent one week prior to the scheduled meeting date.**

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**Dairy 30x20 Grant Applications**

DATCP has just released the 2015 Dairy 30 x 20 grant applications. Additional information can be found at [http://datcp.wi.gov/Farms/Dairy_Farming/](http://datcp.wi.gov/Farms/Dairy_Farming/). Applications are due January 15, 2015.

The purpose of the grants are to help support long-term viability of Wisconsin’s dairy industry through services to achieve an annual milk production of 30 billion pounds by 2020 to meet the growing demand of the marketplace. Provide assistance to dairy farmers, without regard to size or type, focusing on long-term, sustained operation through a client based service delivery system that utilizes a multi-agency, private-public network for services and referrals. Improve profitability through management and operational system changes, business and legal structure, and herd health and milk production. Beginning farmer assistance. Many of us have utilized the grants through on-farm dairy management teams. Farmers have used them to assist in farm transition planning or dairy modernization/expansion projects. Grants are up to $5,000 with a 20% producer cost-share.

For more information regarding the Dairy 30 x 20 grants, please visit [http://datcp.wi.gov/Farms/Dairy_Farming/](http://datcp.wi.gov/Farms/Dairy_Farming/) or contact DATCP’s Mel Zech at 855.943.2479 or [mel.zech@wisconsin.gov](mailto:mel.zech@wisconsin.gov).
“The key to success in any business is to help other people be successful in their jobs.” Effective employee management is a critical aspect of any successful agri-business. Developing the necessary management skills doesn’t happen overnight, and they are difficult to achieve without some guidance. The challenge of training good managers is important to the profitability of any business.

The transition from employee to manager can be a tough road to navigate. In this two day workshop, UW-Extension agents will share “people skills” with participants to help them be successful in their jobs: communication, conflict management, trust and respect, and leadership.

**Agenda**

**Day 1:**
- 9:00 am: Introduction—Why are we here?
- 9:30 am: Maximizing your Potential: Using the REAL Colors System
- 11:30 am: Communication Cultural Barriers
- 12:15 pm: Lunch
- 1:00 pm: Using Style to Manage Conflict
- 2:15 pm: Behaviors and Characteristics of a Good Leader

**Day 2:**
- 9:00 am: Review of Day 1
- 9:30 am: Assertive Management
- 10:30 am: Establishing Trust and Respect: Multicultural Aspects
- 11:30 am: Lunch
- 12:15 pm: Conducting Performance Reviews, Firing with Dignity
- 1:15 pm: Leadership Through Time Management
The transition from employee to manager can be a tough road to navigate. This program geared toward middle managers who have an interest in learning more about effective employee management. Provided in English and Spanish, participants will:

- Learn about and develop their own management style
- Learn effective ways to improve communication
- Learn to effectively manage conflict

**Pricing for one:**

- 3 or more individuals from the same farm:
  - 1 Day: $60 per person
  - 2 Days: $100 per person

Register Online [http://goo.gl/7nm631](http://goo.gl/7nm631) or return form to appropriate location:

Name:________________________________________ Phone:____________________
Address:____________________________________ City:______________________ ZIP:__________
E-Mail Address:______________________________ Farm:____________________________________

Make Check Payable to: **UW-Extension**

- _____ X Two Day Session
- _____ X Day 1 only
- _____ X Day 2 only

_______ X Spanish speaking individuals attending
_______ X English speaking individuals attending

$_______ Total Enclosed

Please select location:

- **January 21st and 27th**
  - MAIL TO: UWEX Marathon County
  - Attn: Heather
  - 212 River Dr. Suite # 3
  - Wausau, WI 54403
  - Registration deadline Jan 9

- **February 4th and 11th**
  - MAIL TO: UWEX Fond du Lac County
  - Attn: Tina
  - 227 Admin/Extension Bldg
  - 400 University Drive
  - Fond du Lac, WI 54935
  - Registration deadline: Jan 28

- **February 10th and 17th**
  - MAIL TO: UWEX Kewaunee County
  - Attn: Aerica
  - Kewaunee Co Admin Ctr
  - 810 Lincoln Street
  - Kewaunee, WI 54216
  - Registration deadline: Feb 3
2015 Annual CAFO Meeting Update & Registration

An update meeting for WPDES permitted CAFO owners & managers, nutrient management plan writers and engineers.

Session goals: Improve nutrient management plan implementation; improve communication between plan writers, permit holders and WDNR; and also provide other information on regulations that may affect large farming operations.

Registration: 8:30AM
Meeting topics (session times: 9:00AM to 3:30PM)

- Why Every Heifer Should be Raised on Pasture/Heifers on Pasture & Permit Impact – (Adam Abel; NRCS)/(Jones, Block, Uvaas; WDNR)
- Understanding Citizen Concerns – (Sarah Williams; Midwest Environmental Advocates)
- Implements of Husbandry Update - (Liz Binverise, Green Bay; Tina Kohlman, Fond du Lac; Greg Blonde, New London UWEX)
- Karst Reminders: Recognizing Features, Preventing Problems - (Baeten; WDNR)
- EPA Update – (Cheryl Burdett); Fond du Lac Only
- Fall/Winter Spreading Panel - (Agronomists, Farmers, & Haulers)
- New Fields Submittals using SharePoint – (Baeten; WDNR)
- Updating and Reviewing Emergency Response Plans – (Jones; WDNR)
- Ask DNR Panel – (Jones, Baeten; WDNR staff)

$30 in Advance; $45 after registration deadline and walk-ins (at the door)
Lunch included
Make check(s) payable to: BCT (Brown County Treasurer) or cash only; NO Credit/Debit Cards

To register mail, fax, or email the following information to:
Brown County UW-Extension, Attn: Joan, 1150 Bellevue Street, Green Bay, WI 54302
Fax: 920-391-4617
Email: Laehn_jm@co.brown.wi.us

Name(s) of Attendee(s)___________________________________________________________________________

Firm/Farm Name _____________________________________ _  Phone________________________ ___________

Address ______________________________________________________________________________________

Email ________________________________________________________________________________________

Circle location attending:  Green Bay  New London  Fond du Lac

Before date:  Number of people_______ x $ 30.00 = $_______

After date:  Number of people_______ x $ 45.00 = $_______

Topic you are most interested in (circle one or write in):  Public Notice New Land  Manure Irrigation

Spreading setbacks/monitoring  Recordkeeping  Enforcement  Other: ____________________

University of Wisconsin, U.S. Department of Agriculture and Wisconsin counties cooperating. An EEO/AA employer, University of Wisconsin Extension provides equal opportunities in employment and programming, including Title IX and American with Disabilities (ADA) requirements. Contact Kevin Erb at 920-391-4652 for more information on this program.
2014 Wisconsin Soybean Variety Test Results

The 2014 Wisconsin Soybean Variety Test Results are now available. Click on the following link to view the results:
http://www.coolbean.info/pdf/soybean_research/variety_trail_results/2014_Soybean_Trials_FINAL.pdf

It Is Time To Order Your Trees Again!

The Calumet County Resource Management Department in cooperation with the Outagamie County Land Conservation Department is once again putting on The Tree, Shrub and Wildflower Sale. The brochure and order form are posted on the Tree Program/Forestry page of the Calumet County website, which is listed below. Brochure and order forms are also available in the Resource Management Department, located in room 227 on the second floor of the Courthouse in Chilton. Stop by our office to pick one up or call to receive a brochure and order form by mail. When ordering, please indicate your preferred pick up location, Appleton or Chilton. The trees normally arrive about the end of April. You will be notified in advance of the pickup date.

Orders for wildflower seed are still available. Information on wildflower seed mixes will be posted on the Outagamie County website only: http://www.outagamie.org/index.aspx?page=64.

There are a limited number of trees available and they must be purchased in groups of 25 trees. If you are looking for smaller numbers of trees we recommend getting together with neighbors, clubs, and civic organizations to place group orders.

For questions contact Ben Kingery at (920) 849-1442. If you want to order trees after January 1, 2015, please check availability by contacting the Outagamie County Land Conservation Department at (920) 832-5073.

Here is the link to the brochure and order form: http://www.co.calumet.wi.us/index.aspx?NID=191.

Pregnancy Diagnosis Using Milk PAG Testing

Paul M. Fricke, Ph.D., Professor of Dairy Science and Extension Specialist
University of Wisconsin – Madison

Identification of nonpregnant dairy cows early after AI improves reproductive efficiency and pregnancy rate by decreasing the interval between AI services thereby increasing the AI service rate. Thus, new technologies to identify nonpregnant dairy cows and heifers early after AI may play a key role in management strategies to improve reproductive efficiency and profitability on dairy farms. Chemical tests for early pregnancy diagnosis that use qualitative measures of pregnancy-associated glycoproteins (PAGs) originating from the placenta have been developed and commercialized. Because PAGs are produced specifically by the placenta, the presence of PAGs in blood can be used to accurately determine pregnancy status. Currently, three nonpregnancy tests based on detection of PAGs in maternal blood are commercially marketed:

BioPRYN - BioTracking, LLC, Moscow, ID
http://www.biotracking.com/dairy

DG29 - Conception Animal Reproduction Technologies, Beaumont, QC
http://www.conception-animal.com/test_an.html

IDEXX Bovine Pregnancy Test - IDEXX Laboratories, Inc., Westbrook, ME,

None of the tests listed above are cow-side or on-farm, so blood samples must be collected by farm personnel and sent by courier to a local or regional laboratory that runs the assay. Results are then returned to the farm via email, usually within 24 to 72 h.

Recently, IDEXX Laboratories (Westbrook, ME) released a milk PAG test marketed through regional DHIA testing centers throughout the United States. Detection of PAGs in milk samples eliminates the need for drawing blood samples and can be done at the DHIA testing center on the same milk samples sent in for determining milk components and somatic cell score. Because PAGs have a long half-life in circulation after calving, cows must be a minimum of 60 days post-calving for accurate results. In addition, PAGs increase slowly in milk early in gestation, so cows must be ≥28 days post-insemination for the milk PAG test to be accurate.
We recently conducted an experiment to characterize milk PAG levels throughout the first trimester of gestation in dairy cows and to assess the accuracy of pregnancy outcomes compared to transrectal ultrasonography (Ricci et al., 2014). A total of 141 lactating Holstein cows were hormonally synchronized to receive their first postpartum timed artificial insemination (TAI). Milk samples were collected 25 and 32 days after TAI, and pregnancy status was determined 32 days after TAI using transrectal ultrasonography. Cows diagnosed pregnant with singletons 32 days after TAI continued the experiment in which milk samples were collected and pregnancy status was assessed weekly from 39 to 102 days after TAI using transrectal ultrasonography. The incidence of pregnancy loss from 32 to 102 days after TAI for cows diagnosed with singleton pregnancies was 13%, and these cows were removed from the data set. Thus, a total of 48 cows maintained a singleton pregnancy from 32 to 102 days after TAI. Mean relative levels (S-N values) of PAGs in milk from pregnant cows are shown in the upper panel of Figure 1. Milk PAGs increased from 25 days after TAI to an early peak 32 days after TAI. Milk PAGs then decreased from 32 days after TAI to a nadir from 46 to 67 days after TAI followed by a gradual increase in PAG levels from 74 to 102 days after TAI.

To determine the accuracy of milk PAG test outcomes (Figure 1, lower panel), pregnancy outcomes based on PAGs in milk were classified based on cutoff levels (dashed lines in the upper panel of Figure 1) specified by the manufacturer. Overall, pregnancy outcomes for pregnant cows reflected the PAG levels in milk. Clearly, testing at 25 days after AI is too early based on the proportion of “not pregnant” and “recheck” outcomes generated for cows that we knew were pregnant. By contrast, milk PAG test outcomes for pregnant cows exceeded 98% “pregnant” outcomes 32 days and 39 days after TAI for cows we knew were pregnant. The proportion of milk PAG test outcomes of “not pregnant” and “recheck” then increased for cows that maintained pregnancy concomitant to the temporal decrease in milk PAGs during the nadir and then decreased as milk PAGs increased as gestation ensued.

Based on PAG profiles in milk samples collected weekly, the best time to conduct a first pregnancy diagnosis is around 32 to 39 days after TAI when milk PAGs are at an early peak in pregnant cows. Because we only collected milk samples weekly, we are not able to determine the earliest day when milk PAG testing is accurate, so we recommend following the manufacturers recommendation of ≥28 days after AI. By contrast, conducting the milk PAG test during the temporal nadir in milk PAGs from 46 to 67 days after AI would result in a lesser overall accuracy of the test outcomes and the possibility of aborting a few pregnancies if prostaglandin F2α is administered based on “not pregnant outcomes.” Finally, because of the occurrence of pregnancy loss, all pregnant cows should be submitted for a pregnancy recheck at 74 days after AI or later when relative PAG profiles in milk of pregnant cows have rebounded from their nadir.

Reference
