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If you will need any type of accommodation or assistance as you attend any UW-Extension sponsored event, please contact the host county or Scott at the Marinette County office at least two days prior to the event. All requests will be confidential.

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## May, 2015 Newsletter (Annual Alfalfa Alert edition)

This year's planting season has been a pleasant surprise compared to what most of us were expecting it to be like after last year's wet fall. However, we did have unpleasant surprises in some areas due to alfalfa winterkill/stand thinning issues.

If you are interested in quantifying your alfalfa stand density after planting, I am taking part in a state-wide project to do just that, at 30 days and 5 months after planting. We want a mix of seed types (coatings, treatments, etc..) and a mix of soil types - so if you're at all interested, let me know. The only thing I will need from you is your planting information.

Scott Reuss

### Tractor & Machinery Safety Training

Plans are now being finalized for a tractor & machinery safety training course. It will be held in July in the Pound/Coleman area and will cost approximately \$35. The flier will likely be in the June newsletter.

### Oconto-Marinette FSA Service Center is Moving

The Oconto-Marinette Service Center will be moving soon! Although we don't have an exact moving date at this time, it is being planned for the week of May 25, 2015. Our new location will be at 410 ½ East Main Street, Lena, behind the Fast Stop convenience store and gas station. If you are planning on visiting the office soon, please contact us ahead of time at (920) 834-2366 Ext. 2, to check the status of our move and current location.

### Newsletter Table of Contents

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### Local program Calendar of Events

May 20	6:30 pm	Harmony Arb.	Tree Planting & Young Tree Care workshop
May 18, 21, 26, 29, June 1, 4, 8, 11			
All likely alfalfa forage quality collection dates			
May 30	10 a.m.	Harmony Arb.	Monarch Spring Migration Workshop
June 4	6:30 p.m.	Harmony Arb.	Companion Planting for Pollinating Insects
June 14	Oconto County Breakfast on the Farm - Golden Corners Dairy (flier in June edition)		
June 28	Marinette County Breakfast on the Farm (see flier - pg 2)		

# Marinette County Breakfast on the Farm

**Sunday, June 28, 2015**

**7:30 a.m. to 12:00 p.m.**

The Anderson Family Farm is currently owned and operated by Mark and Connie Anderson. Their children Jacob (Molly), Joshua (Amy), Andrew (Melissa), Ashley and grandchildren Lily, Landen, and Ethan all contribute to the successful operation of the farm. In 1959 Mark's parents, Andrew and Glorianne Anderson bought the farm. Mark took over the farm in 1976 after his father passed away, starting with 13 cows. Mark and his wife Connie purchased the farm from his mother in 1985. Over the years many improvements have been made, including a manure storage system, heifer facilities, and most recently a 115 cow free stall barn and double eight swing milking parlor. They are currently milking 95 cows with 65 young stock. The farm currently owns and rents 265 acres of cropland growing alfalfa and corn used to feed the cows.



*Pancakes, eggs, sausages, cheese curds, maple syrup, applesauce, milk, juice, coffee, ice cream sundaes*

*Petting zoo, face painting, balloons, kids bouncy play area, viewing of barns & cattle, wagon rides, music*

(No advanced ticket sales)

**Adults – \$7.00 / Children 6-10 -\$4.00**

**Children 5 yrs & under – FREE**



**Thank you** to the following businesses for supporting the 2014 **Breakfast on the Farm** in money or in kind donations:

**Platinum—\$1,000 or more**

**A&C Sawdust**

**Beaver Brook Maple Syrup**

**Beaver Machine Inc**

**Dan, Sue, Eric, Jamie Van De Walle**

**Dave & Julie Bushmaker**

**Eric's Garden Center**

**Graese Electric**

**Hoida Construction**

**Jeff & Lisa Fischer**

**Jerry & Tricia Zeitler**

**Jim & Carla Bushmaker**

**Kay Reuss**

**Keith & Nancy Hartwig**

**Kuchta Farms**

**Patz Corporation**

**Pelkins Piggly Wiggly**

**Petal N Roots Greenhouse**

**Scott Reuss**

**Troy & Katie Van De Walle**

**Van De Walle Farms & Families**

**Wisconsin Public Service**

**Gold—\$500- \$999**

**Agropour Inc**

**American Food Groups**

**BelGioioso Cheese Inc**

**BMO Harris Bank**

**Genex Co-op Jeff Jahnke Jeff Fischer**

**Greenstone Farm Credit Services**

**Hosking Electrical Services**

**Land O' Lakes**

**John Veriha Trucking**

**KBM Construction**

**Larsen Cooperative**

**Lee's Family Foods**

**Mt. Morris Mutual Ins; Turner Gross**

**Panes-of-Art**

**Peshtigo Feed Mill**

**Rural Mutual Ins. & Mel Gross**

**Saputo Cheese USA**

**Scheffen Electric**

**Waste Management**

**Witts Piggly Wiggly &**

**Witts Ace Hardware**

**Silver—\$250-499**

**Ag Venture, LLC**

**Biehl Construction**

**Cornette Farm Supply & Vita Plus Corp**

**Culver's**

**Dan Risner & Son Excavating**

**Franks Logging**

**Kotecki Veterinary Service**

**Kozlovsky Dairy Equipment, Inc**

**Larsen Cooperative**

**Marinette County Farm Bureau**

**Meatski's**

**N-K-S Tire Sales & Service**

**P & D Sales & Service**

**Peshtigo National Bank**

**Patz Maple & Honey Farms**

**Peshtigo Times/Times Saver**

**Peters Concrete Co**

**Riesterer & Schnell Inc**

**Vanderloop Equipment**

**WI Building Supply**

**WI-MI Insurance Agency**

**Bronze—\$100-249**

**Airgas**

**Animal Health Clinic**

**Animart**

**Associated Bank**

**BarnStormers**

**Centruylink**

**Countryside Veterinary Clinic LLC**

**Country Visions Cooperative**

**Crivitz Veterinary Clinic Inc.**

**Dair—Ray Vet Service**

**Dan Bieber Equipment LLC**

**Dennis Graef Trucking**

**Dumke Bros.**

**Elanco Animal Health**

**Equity Livestock Auction**

**Fabral Metal Wall & Roof Systems**

**G&G Midwest Enterprises LLC**

**Gendron's Inc**

**Golden Ridge Dairy LLC**

**Graef Livestock Trucking**

**Graetz Mfg.**

**H.J. Dudkiewicz & Sons, Inc.**

**Holley's Harvest**

**Ideal Tent & Party**

**Jakes Jumpers**

**Jandt Farms**

**Jung Seed Genetics**

**Katie's Subs**

**Kaufman Farms**

**Kevin J. Pepin, D.D.S., S.C.**

**Maplewood Meats**

**McDonalds**

**Northwood Flooring**

**Oconto County Lumber, Inc**

**Oconto Electric Cooperative**

**Precision Carts**

**Premier Co-op**

**Ranger City Distruting, Inc**

**Ranks Northern Distributing LLC**

**Rhodes-Charapata Funeral Home**

**Rymer Heating LLC**

**Schroeder Milk Transit**

**Seefeldt Farms**

**Servco FS**

**Schaffer Park Resort**

**Springside Cheese Corp**

**St. Joseph & Edward Parish**

**St. Louis Concrete**

**Toby's Spray Painting & Sandblasting**

**United Cooperative**

**Village Pharmacy, Inc**

**Wagner Sugar Hill**

**Wagner-Casper Ins. Agency**

**Waldvogel Trucking**

**Witt Ford**

**Zeitler Agri-Center, Inc**

**Zorn Trucking**

# Using Fungicides on Alfalfa for Dairy Production in Wisconsin

Damon L. Smith, Scott Chapman, Bryan Jensen, Greg Blonde, Bill Halfman and Dan Undersander

## Introduction

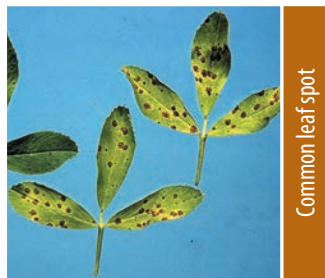
Recently new fungicides have been labeled for use on alfalfa for dairy production systems. Interest in using these products has increased among farmers in the state of Wisconsin. Data from the 1980s suggested that fungicides applied to alfalfa controlled foliar diseases and increased yield. However, alfalfa varieties, management practices, and disease control products have changed dramatically since this research was conducted. Therefore, new research was conducted to evaluate modern fungicide products such as Headline® on alfalfa grown under 21<sup>st</sup> century management practices.

## Foliar diseases of alfalfa

There are many foliar diseases of alfalfa. In Wisconsin, it isn't uncommon to observe common leaf spot (*Pseudopeziza medicaginis*), Leptosphaerulina leaf spot (*Leptosphaerulina briosiana*), spring black stem and leaf spot (*Phoma medicaginis*), or Stemphylium leaf spot (*Stemphylium* spp.). These foliar diseases can damage leaves and stems, resulting in defoliation, yield and quality loss. Timely cutting of alfalfa helps reduce these diseases. In dairy-production alfalfa systems, symptoms of foliar disease often are not observed until three or four weeks after the previous cutting. In a 30-day cutting system, this might mean that little to no defoliation will result before the next cutting.







Common leaf spot



Leptosphaerulina leaf spot



Spring black stem



Stemphylium leaf spot

*Typically in a 30-day cutting interval, like that used in dairy production in Wisconsin, foliar diseases cause minimal damage. Coupled with the heightened risk of fungicide resistance development toward these modern fungicides, **application of fungicide on alfalfa for dairy production is not recommended unless heavy disease pressure is observed.***

## Fungicides available for use on alfalfa

The fungicide Headline® (BASF Crop Protection; active ingredient is pyraclostrobin) was recently labeled in Wisconsin for use on alfalfa. This fungicide belongs to a group of fungicides called the quinone outside inhibitor (QoI) or strobilurin fungicides, which function on a specific metabolic pathway that limits energy production in fungal organisms.

Other fungicide products have also been labeled, including other strobilurin fungicides such as Quadris® (Syngenta; active ingredient is azoxystrobin) and newer succinate dehydrogenase inhibitor (SDHI) fungicide products, such as Fontelis® (DuPont; active ingredient is penthiopyrad). A complete list of fungicides labeled for use on alfalfa in Wisconsin can be found in the publication, A3646 *Pest Management in Wisconsin Field Crops*. In addition, strobilurin fungicides have been attributed to having an effect on plant metabolism that could result in an increase in yield and quality of a crop in the absence of disease ('plant health' promotion). However, strobilurin fungicides are at high risk for fungicide resistance development by various plant pathogens. Therefore, excessive spraying of these products might eventually result in fungicides failing to control certain fungal diseases of crop plants.

The combination of disease control, the possibility of 'plant health' promotion or enhancement, and increasing alfalfa hay prices has resulted in a lot of interest in spraying fungicide on alfalfa for dairy production systems. However, little was known about the utility or the economics of this practice. Therefore, research trials were conducted from 2011-2014 in Wisconsin to evaluate the practice of spraying fungicide on alfalfa in a 30-day cutting system.

## Research trials using fungicides on alfalfa

Trials were located at various locations in each of the research years and included plots in Monroe County, Waupaca County, and Columbia County. Treatments in all trials were replicated four to six times. Each individual plot comprised a minimum area of 400 square feet. Treatments were applied using a backpack small-plot sprayer calibrated to deliver 20 gallons per acre. All treatments were applied at six to eight inches of growth after each of the three cuttings. Alfalfa was harvested for each cutting using a small plot harvester. Foliar disease data were collected for some trials. For all trials, quality was evaluated by the University of Wisconsin Soil and Forage Testing Laboratory located in Marshfield, Wisconsin. Yield, quality, and, where applicable, disease data were evaluated for each cutting, at each location, for each year. An economic analysis was also conducted using data and variability associated with the application of the fungicide Headline®. The variable costs such as the value of hay and the cost to apply fungicide were included in the analyses to calculate the probability of recovering the investment made when applying fungicide.

## Trial results

In total, 35 separate trials (cutting per site per year) were conducted over the four-year period. In the majority of the trials, disease levels were low and no significant difference in foliar disease and defoliation was identified between treatments. Some detectable differences in quality were identified between treatments in some trials. However, relative forage quality was typically greater than 150 (Prime Grade) for both treated and non-treated alfalfa. Yield was statistically greater in fungicide-treated plots in 12 of the 35 trials. Average yield gain when applying Headline® fungicide specifically was 0.11 tons of dry matter (220 lbs) per acre per cutting, which was a significant increase over not applying fun-

gicide. Average yield gain when applying Quadris® was 0.05 tons of dry matter (100 lbs) per acre per cutting, however fewer comparisons with the non-treated control were made with Quadris® compared to Headline®.

Additional analyses evaluating cutting timing were also conducted. Based on these analyses, there was no advantage of applying a fungicide at a particular cutting. For example, a fungicide application prior to the first cutting had an equal chance of resulting in a yield increase compared to an application prior to the second cutting.

## Economics of applying Headline® fungicide

The economics of applying Headline® fungicide can be highly variable depending on alfalfa price and fungicide application costs. Table 1 provides breakeven yields (tons/acre) needed at different hay prices and fungicide application cost scenarios. For example, if a fungicide application cost is \$30 (fungicide plus custom applicator fee) and the hay is sold for \$100 per ton of dry matter (TDM), then a 0.30 TDM/acre increase in yield is required when applying fungicide to pay for its application.

Using our trial results from testing Headline® fungicide against non-treated plots, we can calculate the probability of recovering the fungicide application costs at various hay prices; we can estimate application costs based on the aver-

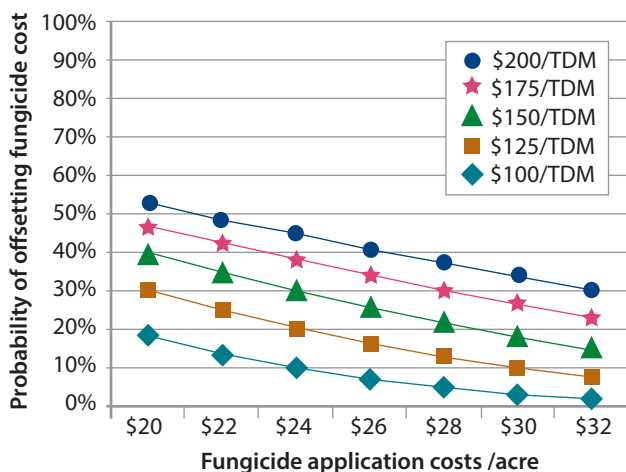
*In Wisconsin where alfalfa production is generally targeted toward dairy production, Headline® fungicide application will often result in a slight increase in yield, but that increase might not be large enough to offset the cost of the applying the product.*

**Table 1.** Breakeven scenarios (tons/acre) needed to recover fungicide application costs

		Fungicide Application Costs (\$/acre)				
		\$22	\$24	\$26	\$28	\$30
Alfalfa Price (\$/TDM)	\$100	0.22	0.24	0.26	0.28	0.30
	\$125	0.18	0.19	0.21	0.22	0.24
	\$150	0.15	0.16	0.17	0.19	0.20
	\$175	0.13	0.14	0.15	0.16	0.17
	\$200	0.11	0.12	0.13	0.14	0.15
	\$225	0.10	0.11	0.12	0.12	0.13
	\$250	0.09	0.10	0.10	0.11	0.12
	\$275	0.08	0.09	0.09	0.10	0.11

*For example, if a fungicide application cost is \$30 (fungicide plus custom applicator fee) and the hay can be sold for \$100 per ton of dry matter (TDM), then a 0.30 TDM/acre increase in yield is required when applying fungicide to pay for its application.*

**Figure 1.** Probability of recovering fungicide application costs at various hay prices and fungicide costs when applying Headline® fungicide



*For example, if hay is priced at \$125 TDM and the fungicide application cost is \$30, the probability of recovering the fungicide application cost on alfalfa for dairy production in Wisconsin is 10%.*

age yield increase and the inherent field variability that exists in alfalfa fields in Wisconsin. Figure 1 demonstrates these calculations across a number of scenarios. The probability of recovering fungicide costs when applying Headline® fungicide in the absence of heavy disease pressure is generally below 50%. Using our previous example, if hay is priced at \$125 TDM and the fungicide application cost is \$30, the probability of recovering the fungicide application cost on alfalfa for dairy production in Wisconsin is 10%.

## Conclusions and recommendations

In Wisconsin where alfalfa production is generally targeted toward dairy production, Headline® fungicide application will often result in a slight increase in yield, but that increase might not be large enough to offset the cost of applying the product. Typically in a 30-day cutting interval, like that used in dairy production in Wisconsin, foliar diseases cause minimal damage. Coupled with the heightened risk of fungicide resistance development toward these modern fungicides, application of fungicide on alfalfa for dairy production is not recommended unless heavy disease pressure is observed (this will be a rare event). While most of the analysis presented here targeted Headline® fungicide, testing with other fungicides yielded similar results.



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**Peer Review:** Jerry Clark, UW-Extension, Craig Grau, Emeritus, Plant Pathology, UW-Madison, and Daren Mueller, Iowa State University

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# Planning First-crop Forage Harvest

## Planning Harvest Timing

First, try not to let other people dictate your decision making. Yes, I fully understand the significant role that timing of custom harvesters' availability plays in your decision making, but you need to end up with the type of feed necessary for your farm. Planting season progressed nicely the first part of May, but it is raining now and one never knows what will happen the rest of the month. Hopefully, there won't be too many farms which need to struggle with the decision between planting and harvesting, as many did last year.

Okay, all that said, here's your annual reminder about forage quality realities

A normally expected RFQ (Relative Forage Quality) drop per day would be about four or five points. Warm, sunny weather will accelerate maturation such that the RFQ will drop more quickly, as much as 8 or 9 pts/day. It is always a bit risky to plan on any particular number drop, but use the 5 point average as your best guess. Conditions this year make me believe that when we get some sustained warmth, the alfalfa quality is going to drop relatively quickly, as growth could be substantial. See the next page for dates when new alfalfa data will be available, or conduct your own PEAQ analysis for your fields and then plan as best you can.

### What does this mean?

- #1. Harvesting causes at least a 10% quality loss. Thus, you need to harvest fields by the time they reach an RFV of 180 so that you end up with 160 RFQ hay/haylage. You also have to take into account daily drops in quality and begin early, such that all your fields are harvested according to your quality goals.
- #2. Use this information to plan around your forage needs.  
Grassy or weedy fields will have lower RFQ values than will pure alfalfa stands, usually by about 10-15%. Your forage needs will dictate your harvesting order. If you only need dairy-quality forage, I would start harvesting the grassy/weedy fields first and leave the pure alfalfa stands for the end, as they should still be in the correct range.  
If you need lower-quality forage feedstuffs, you have some time before you get started.  
If you need a mix of forages, I would strongly consider harvesting pure alfalfa stands first for high-quality forage and leaving the grassy/weedy stands for high-yielding heifer & dry cow or beef hay.
- #3. Red clover stands will hold their feed value longer. These fields can likely be harvested last and will probably still have RFQ values in the 150 range.
- #4. Weigh the trade-offs for your operation. Every day you wait to cut, you lose quality, but gain quantity. Decide which is most important for your operation and plan your cutting schedule on those needs.
- #5. If in doubt, ask. First crop is our most critical forage crop, as it usually makes up 40-60% of our total yield for the year, depending on your cutting management. If you are uncertain what the best harvest schedule is for your operation, please call either myself at the UWEX office, 715-732-7518 or 1-877-884-4408 OR call other agronomists, your nutritionist, or other consultants that can help you weigh this very important decision point.
- #6. Be ready to go with any post-harvest treatments, such as fertilization or manure spreading. You really need to get any post-harvest driving on those stands done as fast as possible, so that you minimize the wheel damage, preferably getting everything done within four days of cutting. This is particularly important if you have lower fall dormancy alfalfa cultivars in your fields.
- #7. Do you know what you're doing with your alfalfa acres after harvest? I don't ask this to be rhetorical. There are going to be at least some acres of alfalfa killed and then planted to something else, or inter-seeded immediately after first-crop. Know what you're going to do, so that you have no more delays than necessary. This will be especially true for some of you that experienced winter kill or winter stand thinning. Those should probably also be your first fields harvested, as they will usually be lowest in forage quality due to lower density and thicker stems.

Of course, nature trumps all our planning some years!

### **Where to get up-to-the-minute forage quality data:**

Option #1. Conduct PEAQ (Predictive Estimated Alfalfa Quality) testing on your own fields. If you need the PEAQ table, it is available all over on the web, including at <http://www.uwex.edu/ces/forage/pubs/rfv-peaq.html>. This works very well. My comparison of doing PEAQ and Scissors Clip for many years leads me to believe that PEAQ is actually more accurate than Scissors Clip, especially on less-mature forages.

Option #2. Contact one of the following for our local First Crop Quality Data, updated at least every fourth day: Marinette & Oconto County Scissors Clip Hotline 1-877-884-4408 or 715-732-7518.

e-mail to [scott.reuss@ces.uwex.edu](mailto:scott.reuss@ces.uwex.edu)

Online at <http://www.uwex.edu/ces/ag/scissorsclip/> to get data from across the state as well as local data. You can look at how alfalfa quality is progressing further south, and simply click on our region to see our most recent data set.

Scott will be collecting PEAQ data at least twice each week starting May 18<sup>th</sup>, probably going through at least June 8<sup>th</sup>. The use of PEAQ allows for a larger number of fields to be sampled, so there should be a field relatively close to your locale that you can use as an indicator.

By using PEAQ, I am able to collect data from a large number of fields, so I should have data within shouting distance of you, wherever you are located. If you're interested in having one of your fields on the rotation, let me know. The message each time will give the place and the average RFV for each individual site.

**Use of Inoculant** - UW-Extension does recommend use of a Lactobacillus inoculant on first cutting because bacteria levels are naturally low on alfalfa grown under cool weather conditions. The value of added inoculant to chopped forage is increased when cool or outright cold weather occurs in days leading up to harvest. Use of inoculant has been shown to be most beneficial if the forage can be ensiled rapidly; forage left laying in the field for more than two days will likely not benefit from added inoculant. Also, benefit of inoculant use for baleage is doubtful due to inability to get good coverage as forage is being baled.

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### **Top 5 Recommendations for soybean establishment and Yield**

As written by Shawn Conley - UW/UW-Extension Soybean & Small Grains Agronomist (If you want to view this entire blog article and other such information, visit <http://thesoyreport.blogspot.com/>) This article is in the 2014 archive, but the most current one is a great discussion regarding soybean maturity group and planting date impacts on yield.

1. Planting date matters for northern soybean growers. Our recent planting date data is very supportive of early planting. Not only have we seen a synergistic yield response with today's genetics to early planting, we also average ~0.36 bu per day cost to delaying planting past the first week of May.
2. Use a fungicide and insecticide seed treatment, as well as an appropriate inoculant. Given today's seed input costs and commodity price our data suggests reduced economic risk and increased profitability utilizing these inputs.
3. Plant your soybean seed 1" deep.
4. Conduct minimum tillage, as appropriate. In short....if rotating with corn no tillage is required!
5. Last but certainly not least, invest in a residual herbicide program for your soybean crop. Not only is it an effective tool for herbicide resistance management (remember we have multiple confirmed glyphosate resistant weed populations in WI) it also widens the application window for glyphosate and usually provides growers with a positive Return on Investment.