

AGRICULTURE RESOURCE NEWSLETTER

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RETURN SERVICE REQUESTED

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"A seedling never hardened off through stressful conditions never becomes as strong and productive."

Steven Sigmund

Dealing With Stress

Uncertainty in future commodity prices, export markets and labor supply are causing a lot of stress for farmers these days, as well as those who work in agricultural sales, service and supply. UW-Extension employees are also facing a lot of stress with statewide restructuring and uncertain staffing decisions in the months ahead. According to John Shutske, Biological Systems Engineer and Extension Specialist at UW-Madison, consider these proven top-ten ways when dealing with stress...

- 1) Acknowledge physical and psychological effect of stress on memory, distractibility, decision making, irritability, health, communications and your relationship with others.
- 2) Work to regain a sense of positive control. Strive to see things based on facts, including written numbers, goals, next steps, timelines, and resources.
- 3) Set goals, preferably write down on paper. The SMART approach offers a good framework for developing your written goals (*S* – specific; *M* – measurable; *A* – achievable; *R* - realistic, relevant; *T* – timely).
- 4) When helping someone deal with stress, have patience and LISTEN. You may see things as clear as day, but because of the impact from stress on the brain, those under stress will likely not see things as clearly.
- 5) Use local support systems, including family, friends, colleagues, industry professionals, clergy, educators, trusted and experienced advisors, as well as other trusted “elders” in the community.
- 6) Understand dealing with stress takes time. Know that some individuals and families might focus on something YOU may not think is a high priority. This is where listening and patience is needed most. With time, it can lead to fact-based assessment with specific written SMART goals as a future action plan.
- 7) A HOLISTIC APPROACH OFTEN WORKS BEST. If multiple resources are needed, don’t overlook or underestimate the role of health professionals.
- 8) Realize that stress is a call to action. As Dr. Kelly McGonigal says, “Stress gives us access to our hearts. The compassionate heart that finds joy and meaning in connecting with others...your pounding physical heart, working so hard to give you strength and energy. And when you choose to view stress in this way, you’re saying that you trust yourself to handle life’s challenges and you appreciate not having to face them alone.”
- 9) Everyone needs support. Follow up in a pre-planned, scheduled way. Be positive. Recognize and celebrate progress. Listen. Be patient. It might take multiple times to make significant progress. But, all forward progress is good progress. And slip-page in the backward direction, when properly framed, can be a great learning opportunity.
- 10) Take care of yourself. Get support from others. Ask for help and listen with intent to connect. Know when you need a break and plan time to get away. Never be afraid to ask or lean on others for help.



Upcoming Events:

May 5

*Farm Mgmt / Ag Lender Seminar
10 AM Liberty Hall, Kimberly*

For additional information about upcoming educational activities and events, go to the Waupaca County UW-Extension Office website at:

<http://waupaca.uwex.edu/>

Follow the Waupaca County UW-Extension Office on Facebook at:

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twitter.com/uwexwaupacaco

**UWEX Farm Management /
Ag Lender Seminar
May 5, Liberty Hall**



Northeast Wisconsin farm managers, Ag lenders and other Ag industry professionals are invited to attend the annual UW-Extension Farm Management Update for Ag Professionals on Friday, May 5th at Liberty Hall in Kimberly from 10 AM to 3 PM. Topics include:

- ◆ Cropping Decisions and Grain Marketing for 2017
- ◆ Dairy Herd Hoof Health in NE WI
- ◆ Safety Considerations with On-Farm Manure Storage
- ◆ Making “Cents” of Cover Crops & Soil Health
- ◆ Ag Finance Outlook

The Ag Finance Outlook will also include a panel of experienced Ag lenders moderated by Greg Blonde, Waupaca County UW-Extension Agent, featuring: Doug Lund, statewide Farm Loan Specialist with USDA Farm Service Agency; Dan Gitter, Greenstone FCS and Dave Kappelman, Denmark State Bank.

Registration is due Friday, April 28. See page two for more details.



Farm Management Update for Ag Professionals
Friday, May 5, 2017
Liberty Hall, Kimberly

9:30 am	Registration, milk, coffee, juice, and rolls
10:00 am	<p>"Decisions Impacting the Profitability of the 2017 Crop"</p> <ul style="list-style-type: none"> - Kevin Jarek, UW-Extension Outagamie County Crops, Soils, & Horticulture Agent
10:30 am	<p>"The Prevalence of Digital Dermatitis in Eastern WI Dairy Herds"</p> <ul style="list-style-type: none"> - Aerica Bjurstrom, UW-Extension Kewaunee County Ag Agent
11:00 am	<p>"Grain Marketing: The Year Ahead"</p> <ul style="list-style-type: none"> - Darrell McCauley, UW-Extension Winnebago County Ag Agent
12:00 pm	Lunch
1:00 pm	<p>"Manure Storage Safety Update: Inquiry & Investigation on Recent Human and Animal Death Events"</p> <ul style="list-style-type: none"> - John Shutske, UWEX/UW-Madison, Professor & Extension Specialist - Liz Blinversie, UW-Extension Brown County Ag Educator
1:45 pm	<p>"Do Cover Crops and Soil Health Make Cents?"</p> <ul style="list-style-type: none"> - Jamie Patton, UW-Extension Shawano County Ag Agent
2:15 pm	<p>"Opportunities & Challenges for Ag Finance"</p> <ul style="list-style-type: none"> - Moderator: Greg Blonde, UW-Extension Waupaca County Ag Agent - Panel: Doug Lund, FSA Statewide Farm Loan Specialist Dave Kappelman, Senior VP Ag Lending, Denmark State Bank Dan Gitter, VP Commercial Lending, Greenstone FCS
3:00 pm	Adjourn

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Extension
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**Farm Management Update for
Ag Professionals
Registration Form**

Name(s): _____

E-Mail(s): _____

Business: _____

Address: _____

City: _____

Zip: _____

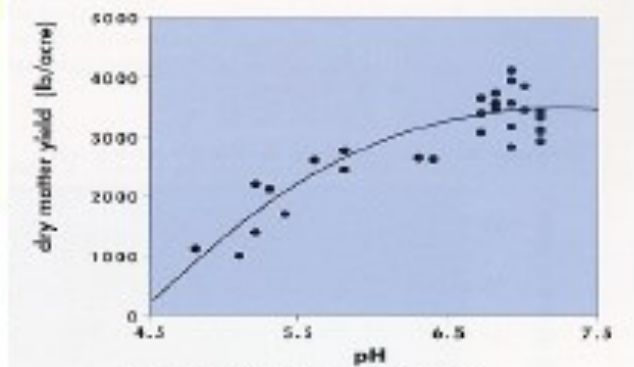
Phone: _____

Registration Fee: \$40 per person
Make check payable to: Waupaca County
Mail this registration form and check to:
Waupaca County UW-Extension
811 Harding Street
Waupaca, WI 54981
715-258-6231
Registration Deadline: April 28, 2017

Seeding Failures

1. Seeding depth – seeds must be placed at 14 to 1½ inch deep. If deeper the seed may not be able to push the growing plant to the soil surface, if too shallow, soil moisture may not be adequate for germination
2. Soil pH must be 6.8 for alfalfa and 6 to 6.2 for grasses and clovers.

Figure 2. First-cutting alfalfa yield relative to soil pH.



Source: Hölzlshenke and Urdanovics;
University of Würzburg, 1991

3. Soil packing -- failure to pack soil around seed inhibits the seed's ability to take up soil moisture necessary for germination.



- c. Press wheels close to disc opener are second best they reduce the disc crossing a furrow or ridge separately from the press wheel.



How to get a good stand of alfalfa or grass

A properly maintained Brillion or drill seeder can consistently get good forage stands while reducing seeding cost from \$40 to \$100 per acre.

- High seeding rates may be necessary with poor seeders since few seeds germinate.
- Lower seeding rates can be used with better seed placement and packing.
- Research has shown that, no matter how much is seeded, forage stands will thin to 25 to 35 plants per square foot by fall.

Seeder Calibration

1. Different lots of seed flow at different rates as shown in this table where seeding rates of two different seeders were measured for different seed lots with no change in drill settings.

Variety/ Seed Lot	Brillion Seeder	John Deere Drill
	lbs seed/ acre	lbs seed/ acre
1	18.3	21.4
2	17.0	20.8
3	15.0	18.3
4	18.8	18.8
5	20.8	18.5
6	20.9	18.8

Ever run out of seed?
This could be why.

*Calibrate seeder by monitoring
acres seeded from first half of
bag.*

2. Worn seed metering devices may have different seeding rates for different rows. Box on right is seeding at twice the rate on the left.



Recommended maximum is 75 seeds/sq ft. Final desired plant count is 25 to 30 plants/sq ft at end of season.



IF YOU'RE TRYING TO MAKE YOUR SOIL HEALTHIER, YOU SHOULDN'T SEE IT VERY OFTEN.

In other words, soil should always be covered by growing plants, their residues, or a combination of the two. Keeping the soil covered all the time makes perfect sense when you realize that healthy soils are full of life and that the microorganisms living in the soil have the same needs as other living creatures. They need food and cover to survive, which benefits your crops.

When you have a vegetative cover on the soil, especially a living cover, you offer those microbes both food and shelter. Some scientists say when you till the soil and remove crop residues, the effects are as devastating to soil microbes as a combination of an earthquake, hurricane, tornado, and forest fire would be to humans. From the perspective of the living creatures within the soil, a tillage tool has the effect of disturbing the ground like an earthquake; removing residue is like a tornado ripping the roof off a house; uncovered soil can be washed away by water and wind like that of a hurricane—or scorched in the hot sun like a wildfire.

STOP THE SPLASH, HARVEST THE BENEFITS

When a falling raindrop explodes as it hits bare soil, it dislodges unprotected soil particles, and begins the process of soil erosion. Cover crops and crop residue prevent that violent splash on soil, protecting soil aggregates from being pounded by falling raindrops.

Safe from disintegration by the hammering energy of raindrops, the structure of healthy soils remains intact, which prevents soil crusting. In this protective environment, water infiltrates the soil and becomes available to plant roots.

A mulch of crop residues or living plants on the soil surface also suppresses weeds early in the growing season, giving the primary crop a competitive advantage and increasing yields.



Want to learn more?
Visit:
www.nrcs.usda.gov

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Grain Management Considerations in Low-Margin Years

Producing grain in years when profit margins are low can be extremely challenging. When managing complicated agricultural production problems, we are tempted to find a silver bullet, a one-stop shop, a cure-all or just some good old luck!

But we know better.

The first thing to remember is to stay focused on the data you have in hand and systematically consider your inputs and goals. Some decisions can be made in the off-season (ex., variety/hybrid choice), while some can only be made in-season (ex., to spray an insecticide or not). Regardless of when decisions need to be made, it is important that those decisions are based on data* and/or experience that has been proven to be profitable on your farm or on farms in a similar environment.

Resist the temptation to buy an untested solution that promises to improve yield.

What follows below and is expanded on in the following pages are considerations to help you make informed decisions about your production system in a low-margin production year.

* replicated research data from a trusted source

Start with recent soil tests to make decisions on profitable soil fertility management.		Choose a variety or hybrid that performs well in multi-location performance trials and optimize its management for your farm.		What follows below and is expanded on in the following pages are considerations to help you make informed decisions about your production system in a low-margin production year. * replicated research data from a trusted source	
		PEST MANAGEMENT			
Optimize seeding rates for your variety/hybrid.		CROPPING	Rotate crops.		Use integrated pest management (IPM) tools and scouting to make educated decisions about cost effective management strategies for insect and diseases.
					Manage known weed resistance issues on your farm.
Use the technology that you already have.		Negotiate lower cash rent based on yield history and price expectations, along with your own costs		Know your own cost of production based on your input prices and rates, your machinery operations, your land rents and custom services.	
ECONOMIC				Develop a marketing plan based on your costs and willingness to bear risk.	

What's Standing Alfalfa Worth in 2017?



One of the challenges in coming up with a value for standing hay is the lack of established market price information like we have for corn and soybeans. Another challenge is multiple cuttings of hay versus a single harvest for grains. So it's no wonder the price for standing hay can vary between farms, even between fields. So, here's one way to consider for pricing standing hay in 2017.

Assuming a four (4.0) ton dry matter (DM) yield/acre for the entire year of dairy quality alfalfa hay worth \$100 to \$150/ton baled (\$0.06 to \$0.09/lb DM), half the value is credited to the owner for input costs (land, taxes, seed, chemical and fertilizer), and half the value is credited to the buyer for harvesting, field loss and weather risk.

Using a standard yield distribution for a three cut (43% / 31% / 26%) or four cut (36% / 25% / 21% / 18%) harvest system, the following price range (rounded to the nearest \$5) may offer a starting point for buyers and sellers to negotiate a sale of good to premium quality standing alfalfa in 2017:

	4 cuts	3 cuts
1 st crop...	\$ 85-130/a	\$100-155/a
2 nd crop...	\$ 60- 90/a	\$ 70-110/a
3 rd crop...	\$ 50- 75/a	\$ 60- 95/a
4 th crop...	\$ 40- 65/a	

In this example, the standing value for the entire alfalfa field could range from \$230 to \$360/acre for the entire growing season. Keep in mind ownership costs can run \$300 to \$400/acre when the seller considers lost rent, establishment costs and top-dress fertilizer to maintain soil fertility. That's why the same price is not always the right price for everyone. Ultimately, a fair price is whatever a willing seller and an able buyer can agree to.

To help farmers and landowners better evaluate their pricing options, Greg Blonde, UW-Extension Agriculture Agent developed a mobile app for pricing standing hay. With nearly two thousand users across the country, the app provides quick access to baled hay market prices for reference calculations, with value per acre by cutting displayed using annual yield and harvest cost projections. The Android app is free to download at the Google Play store (search for **Hay Pricing**) or by going to:



<https://play.google.com/store/apps/details?id=com.smartappsconsulting.haypricing>

By Greg Blonde, Waupaca County UW-Extension Agent. April 2017

What To Do With Frosted Alfalfa?

Although alfalfa started growing very early this year, Dan Undersander, Extension Forage Specialist at UW-Madison recommends the following advice:

- Temperatures from 25 to 30°F may cause some leaf injury during early development, but prior and later emerging leaves will not be affected.
- Night time temperatures must fall to 24°F or lower for four hours or more to freeze alfalfa top-growth. This means temperatures at or just below freezing (28-32°F) will not damage alfalfa. In fact, snow at or above 24°F won't damage growing alfalfa.
- The only way to tell if alfalfa is damaged from cold spring weather is to wait 2 - 4 days to determine if the leaves wilt or turn black. Unless this damage is present there is no frost injury. Damage will occur mainly to top of the plant since that is where the plant is most exposed to the cold temperatures. So...
 1. If leaf edges only are blackened or show signs of 'burn', damage is minimal with little to no yield loss and nothing should be done.
 2. If only a few leaves are lost, but not the bud, yield loss is be minimal, nothing should be done. (for both of these first two scenarios, use a PEAQ stick for timing high quality forage harvest, even if late April early May).
 3. If the entire stem top (leaves and bud) are wilted and turn brown, then the growing point (bud) has been killed by frost and that stem will not grow any further except from axillary shoots that may redevelop at leaf junctures on the stem. The plant is not dead and new growth will occur from buds on the crown. When entire tops are frosted significant yield loss will occur. If frozen stems are too short to justify harvest, do nothing. New shoots will develop from crown and axillary buds. Yield will be reduced and harvest will be delayed while the new shoots develop. If frozen stems are sufficient for economic harvest (14+ inches), do so. There is no toxin in the frozen top-growth and it will provide good high quality forage. Mow immediately and harvest as normal. Regrowth will be slow and some total season yield loss will occur. After harvest ensure that soil fertility is adequate for good growth. Let the next cutting grow to first flower to improve stand condition.

Timing First Crop Alfalfa Harvest



The Waupaca County Forage Council is again sponsoring the annual PEAQ (Predictive Equations for Alfalfa Quality) first crop alfalfa monitoring program this year. Field data from cooperating farms/consultants will be available mid-May through early June to help improve timing of first crop harvest. Measurements will be taken on Mondays and Thursdays and posted on-line at: www.uwex.edu/ces/ag/scissorsclip/

How to use PEAQ stick:

Step 1: Choose a representative area in the field.

Step 2: Identify the most mature stem in a 2 sq. ft. sampling area using the criteria in the table (right).

Step 3: Measure the length of the tallest stem in that area from the soil surface (next to plant crown) to the tip of the stem just below the top leaves (NOT to the leaf tip). Straighten the stem for an accurate measure of its length. (note, the tallest stem may not be the most mature stem.)

Step 4: Based on the most mature stem and length of the tallest stem, use the chart above to estimated the relative forage quality (RFQ) of your standing alfalfa forage. Step 5: Repeat in several areas across the field. Start harvesting 10-15 points above desired relative feed value level to offset quality declines during harvest.

Height of Tallest Stem (from soil surface to stem tip)	Stage of Most Mature Stem		
	LATE VEGETATIVE	BUD STAGE	FLOWER STAGE
	Vegetative (>12") No buds visible	1 or more nodes with visible buds. No flowers visible	1 or more nodes with open flower(s)
-inches-	-----Relative Feed Value-----		
16	237	225	210
17	230	218	204
18	224	212	198
19	217	207	193
20	211	201	188
21	205	196	183
22	200	190	178
23	195	185	174
24	190	181	170
25	185	176	166
26	180	172	162
27	175	168	158
28	171	164	154
29	167	160	151
30	163	156	147
31	159	152	144
32	155	149	140
33	152	145	137
34	148	142	134
35	145	139	131
36	142	136	128
37	138	133	126
38	135	130	123
39	132	127	121
40	129	124	118
41	127	122	115
42	124	119	113

CROPPING

Rotate crops.

Crop rotation can help manage residue without tillage. Fewer passes can save money!

Choose a variety or hybrid that performs well in multi-location performance trials and optimize its management for your farm.

- Use trial data and pick varieties or hybrids that not only perform well but also have the traits you are interested in (e.g. herbicide tolerance). See the 2016 Wisconsin Soybean Variety Performance Trials and the 2016 Wisconsin Corn Hybrid Performance Trials for individual variety/hybrid performance.
- Plant multiple varieties or hybrids to diversify plant genetics and lower risk of yield loss to unforeseen stress factors.
- Pay attention to crop maturity ratings and use varieties or hybrids that best match your production practices. Later maturing corn or soybean often produce greater yield, however frost damage or drying costs can offset higher yield potential.
- Buy only the traits you need. Most traits in corn or soybean are pest management traits, not yield traits. These traits protect yield, not enhance it.
- If you are considering traits, like corn rootworm Bt traits, use scouting data from previous years to make the correct decision on type of trait. Be sure to also identify disease resistance in varieties and hybrids you are interested in.
- Choose the varieties or hybrids best suited for your area that also have the best disease resistance rating you can find.
- Plant early to maximize yield.

Optimize seeding rates for your variety/hybrid.

For soybean, the optimal seeding rate in ~80% of WI soils is 140,000-165,000 seeds per acre, with the intent to achieve a final stand of 100,000 plants per acre at harvest to maximize yields. In drought-stressed environments farmers should increase soybean seeding rate to achieve a final stand of 140,000 or more in the entire field or problematic areas of a field. The economic optimal seeding rate for soybean seed treated with full seed treatment package (fungicide + insecticide) is often ~20,000 less than non-treated seed.

For corn, the harvest plant density that produces the maximum yield on most soils in WI is between 35,000-38,000 harvested plants per acre. The economic optimum is 4,000-5,000 less per acre). You can be within 95% of the maximum yield and economic optimum by establishing 26,000-30,000 harvested plants per acre. However, these guidelines vary greatly by field and also interact with corn hybrid.

Start with recent soil tests, soil testing costs \$0.40 to \$1.00 per acre per year or roughly the value of a few pounds of fertilizer!

- Maintain soil pH in an appropriate range for your crop rotation to improve nutrient availability and enhances N fixation in legumes and N mineralization from soil organic matter. If soil pH is too low for the crops in your rotation, yield will be limited. Lime applications take 3-4 years to completely react with the soil and should be considered an intermediate term investment.
- Base P and K applications on soil tests. If a soil tests over optimum, reduce P and K fertilizer rates by half or eliminate and consider eliminating starter fertilizer. If both P and K test low and you can only afford to apply one, choose K. Recent UW research has demonstrated that K is more important for corn and soybean production than P.
- Maximize profitability by using MRTN guidelines. The maximum return to N (MRTN) guidelines along with realistic N:corn (or wheat) price ratios should be used to determine the N application rate.
- Take manure credits and reduce fertilizer application rates. In addition, forage legumes provide substantial N credits to corn in many situations.
- Consider applying S for corn and alfalfa, if you have had S deficiencies in the past or you have low organic matter, or sandy soils. When S is limiting, applications of 15-25 lb S/a in sulfate form are very profitable.
- Micronutrients are often not deficient in Wisconsin. Know which crops are sensitive to which micronutrients and know the soil conditions that are more likely to have low availability of micronutrients before you decide to make an application.
- For all nutrient applications, follow 4R nutrient stewardship practices. Use the right source, at the right rate, at the right time, and in the right place. This is critically important for N. Consider all aspects of your N management program to reduce potential N loss. For additional information, see UWEX Publication A2809, Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin.

ECONOMIC

Develop a marketing plan based on your costs and willingness to bear risk.

- **There is no right or wrong plan.** Just having a plan (preferably written with dates and goals) is beneficial.
- **Estimate your production, know your costs** (direct and opportunity), and how crop insurance affects your marketing plan. This will help you project cash flow and estimate your farm income.
- **Use on-line grain marketing resources,** use the search phrase "develop a grain marketing plan."

Also, contact your UW-Extension agent and other ag professionals, they may have suggestions for resources. Two examples are the UW Center for Dairy Profitability and University of Minnesota's Center for Farm Financial Management, websites listed below.

<http://cdp.wisc.edu/ag/Grains/powerpoints/10-mktgplan.PPT>
<http://www.cffm.umn.edu/grainmarketing/marketingplans.aspx>

Know your own cost of production based on your input prices and rates, machinery operations, land rents and custom services.

- **Calculate your costs for purchased inputs,** each input price multiplied by how much you have bought or plan to buy.
Machinery costs are more difficult and have to be estimated. You can use custom rates as a starting point. Farmer costs tend to be higher than custom rates, especially if you run your machinery over fewer acres, since the fixed costs of owning the equipment are spread over fewer acres. Iowa State University Extension has a detailed process for those interested in an estimate for the specifics of their equipment and operation; search "estimating farm machinery costs." Many UW-Extension county agents have budget templates in spreadsheet, as do many lenders. Pencil and paper work just fine.

- **Develop marketing plan and cash flow analysis.**

You may want to split costs into direct costs that have to be paid (such as loan payments and rent payments) and opportunity costs (such as their time, depreciation and returns to owned land). Develop a marketing plan using forward contracts and/or futures contract and crop insurance to be able to make required payments for direct costs. Earning a fair return to your time and land may not always be possible under current markets and farm equity or outside income may be needed for family living expenses.

Use the technology you already have.

- **Avoid steep learning curves.** When profit margins are low, it's obvious that not spending money makes sense. Your time is also expensive; new technologies usually have a fairly steep learning curve and take time (and lots of mistakes) before you get proficient.
- **Utilize technology that you don't have to own.** Check with your local cooperative for variable rate application equipment. If so, hiring them to make variable rate applications (VRA) may increase profitability given the right conditions. First, field variability should be mapped by collecting soil samples on a 1- to 2-acre grid basis. Second, at least 25% of a field should have a P, K, or lime recommendation that is different than the field average.
- **Use section control on sprayers.** Implementing section control allows the sprayer to turn off sections when they pass over an area that has already been sprayed. This reduces over-application, which reduces chemical usage and also reduces the risk of damage to plants. An added benefit of using section control is that environmentally sensitive areas within the field, such as grassed waterways and buffer strips, can be excluded from receiving the chemical application, thereby reducing runoff potential.
- **Automatic guidance systems can reduce costs in a number of ways.** Accurate pass-to-pass guidance reduces overlap and skips when spraying, maintains proper row spacing when planting, and minimizes the number of passes required to cover the field translating into fuel savings. Another added benefit is reduced operator fatigue, allowing the operator to stay in the machine longer and perform the operation at the optimal time. Also, the operator can focus attention on the implement to ensure that it is functioning properly. Having the ability to detect a clogged seeding tube or nozzle before misapplication has occurred over several acres saves time and money needed to correct the problem and/or reduction in yield in the fall.

Negotiate lower cash rent based on yield history and price expectations, along with your own costs.

Convert from cash rent to flex lease. Rent based on yield, price, or revenue, with or without a base payment. If you need help for negotiating a lease, perform an internet search using the phrase "flexible farm lease."

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PEST MANAGEMENT

Use integrated pest management (IPM) tools and scouting to make educated decisions about cost effective management strategies for insects and diseases.

- **For insects,** use growing degree days to predict presence and best timing of controls.

Base insecticide or fungicide applications on timely field scouting. Informed spray decisions save money. Rely on established, research-based economic thresholds to verify if treatment is needed. Do not adjust economic thresholds because insecticides or commodity prices have changed. This can result in more significant problems. Spraying at sub-economic soybean aphid populations will increase the potential for soybean aphid population resurgence and/or an increase in two-spotted spidermite damage.

- **For fungicides,** base decisions on known diseases previously observed in a field.

For applications in Wisconsin corn, data suggests that the best response occurs when the application is made near or immediately after tasseling. Scout prior to the tasseling (VT growth stage) and base decision to spray fungicide on the past field history, the foliar disease resistance rating of the hybrid, planting date and the amount of disease observed on lower leaves. If northern corn leaf blight severity (area of the lower leaves covered by disease lesions) is greater than 10% on 50% or more of the plants, fungicide could be effective in controlling foliar disease and a positive yield response observed. Spraying when no northern corn leaf blight is observed results in less than a 20% chance of recovering the cost of the fungicide and application. For some diseases like common rust, severity will rarely reach a point to cause yield loss in Wisconsin.

For soybean, white mold is the major disease of concern in Wisconsin.

Know the field history and perform any fungicide applications in at-risk fields during the early reproductive (R1-R3) growth stages. The weather (before and during R1-R3) will influence this decision. If weather has been wet (above average) and average temperatures mild (less than 80° F) then conditions will be conducive for white mold development. If weather has been dry and average temperatures above 80° F, spraying for white mold may not be needed. If weather is conducive, and you use the right product at the right time, return on investment will typically be positive in situations where white mold is a problem. For other diseases of soybean in Wisconsin, the odds of positive return when foliar fungicide is used will be less than 50%.

Manage known weed resistance issues on your farm.

- **Preventing herbicide-resistant weeds is much less expensive than trying to control them!**
- **Use multiple modes of action (MoA) to reduce the risk of herbicide resistance and manage weed populations that have developed resistance.**
- **Knowing the field history and the predominant weed population in a field will help you plan your weed management program.**
- **Always use pre-emergence herbicide as part of your weed management plan.**
- **Select post-emergence herbicides based on weed population.** Scout the field prior to the post-emergence herbicide application AND two weeks after. Evaluate the size of weeds you want to target and ensure that the product you plan to use can control that weed at that stage. After two weeks, evaluate the control and to determine if any spots were missed. A second residual herbicide application may be justified based on field history.
- **Apply herbicides at the full labelled rate.** Half rates may save money but may not be as effective at controlling certain weed species!
- **Use generic herbicides when available and adjuvants only if the label calls for it.** Read the label carefully to adjust the rates according to the formulation.
- **Crop rotation helps manage weeds,** as it allows for many options for weed control rather than just a few.

appointments with the College of Agricultural and Life Sciences, University of Wisconsin-Madison and University of Wisconsin-Extension, Cooperative Extension. M.S. Broeske is senior editor and D. H. Smith is southwest regional specialist, nutrient and pest management program, the College of Agricultural and Life Sciences, University of Wisconsin-Madison. Cooperative Extension publications are subject to peer review.

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