

Central Wisconsin Agricultural Extension Report



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Volume 19, Issue 3

July 2016

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Livestock Farming in Challenging Financial Times By: Lyssa Seefeldt, Marquette County

With the volatility in commodity crop prices and inconsistent revenues from the sale of livestock, farming the past few years has once again reached the point of being a challenge to stay in the black. The one relief that is currently out there for livestock farmers is with the decline in commodity crop prices the past couple of years, feed costs have declined some too. While these are challenging times, there are some things that you can do to help adjust your tactics.

Recordkeeping is crucial to being able to adjust any of your farm strategies. You can't change what you don't know due to lack of accurate records. This includes production records, feed inventories, income records, payment for services, etc. Make sure you are keeping these essential records, and if you aren't already using them to help make decisions, start analyzing them for common ground: there are likely certain times of year that you are always short of cash and other times that you have more than you need to cover your monthly expenses. Sometimes just the act of looking for these trends can help solve some short-term issues, or at least help you develop a plan to move forward to address them. At the bare minimum, everyone has at least one set of financial records that can be useful getting started: the Schedule F. While there might be some adjustments that need to be made to move forward, the Schedule F is a good start to analyzing how your operations are doing. Knowing your cost of production can allow you to plan for tough times.

If your farm is having a hard time financially, don't wait to talk with your banker or financial representative. It is better to have some frank conversations up front than just putting loan payments off or missing them completely. Having the records mentioned above with you and in usable format (either paper or electronic) can help your discussion with your financial representative. If anything, having the conversation early on may allow your financial representative to help you seek out help, adjust loan structures, or try other strategies that may take longer to implement which wouldn't be practical if you wait until you have missed payments.

If we look to strategies that we can implement throughout the year, there are a few key things that we can do to try to increase our margins. Depending on your farm's situation and your own preferences, you may choose to employ different strategies based on your needs: 1) reduce costs, 2) reduce debt, 3) seek better prices, 4) get more efficient with your resources: produce more per acre/per head, and 5) get bigger. Analyzing our spending and returns on spending can really help us hone in on some areas where we might be spending too much with too little return. Can we find a by-product to use in the ration that is cheaper than some of the more traditional ingredients that provides similar energy or protein levels without added

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storage hassle? Paying down debt is of course helpful in the long-term, but may not be practical if you are experiencing a short-term cash deficit. Seeking better prices may be a viable option that can help both in the short-term and long-term. Perhaps adjusting our management slightly is worth the premium we receive for our meat-producing animals if we can now market in a niche cooperative or local marketplace. Often trying to get more efficient with resources to produce more per head or per acre is the strategy that gets a lot of attention because there are always things we can do to better our efficiencies, and often all that is needed is an adjustment in management. Management is also key to getting bigger. Getting bigger doesn't always mean increasing your land base. It might be diversification: adding livestock to the farm or another type of livestock to the farm. This can help smooth financial bumps in the road if you can allow for the added labor that additional livestock adds to the daily task list, but there may be a learning curve to management of the new livestock as well.

Exploring alternative energies and efficient energy technologies may be another couple of strategies to employ for some long term needs. While there is an investment up-front, these technologies have improved by leaps and bounds and the price has come down considerably in the past 20 years. Sometimes there are tax incentives associated with energy efficiency and alternative energy, so it may be worth your while to investigate.

This is by no means an all-inclusive list, but can get you started thinking about strategies to explore. A final thought is that it might be time for a family member to get an off-farm job to supplement short-term shortfalls. You might be able to find a job that gives you enough flexibility and allows you to bridge the gap in the short-term, giving needed time to come up with a long-term solution.

Resources

- Cutting Costs, Not Corners: Managing Cattle in Tough Times, written by University of Georgia Extension staff, available at <http://goo.gl/mc1d9x>.
- Managing in Times of Financial Stress, a two page factsheet written by Purdue Extension staff is available at <https://goo.gl/ivaAnJ>.
- Farm Business Management for the 21st Century: Measuring and Analyzing Farm Financial Performance, written for Indiana farmers, but the principles really apply anywhere, available at <https://goo.gl/SY22rN>. Note that this is an extended explanation of the two page factsheet listed above.
- The UW-Extension Wisconsin Beef Information Center has all sorts of cattle information, including budgeting tools. You can find the information at <http://fyi.uwex.edu/wbic/>. You can find decision making tools and software if you look under the pages column. You can also subscribe to the site to receive the latest information when it is posted so you don't miss timely information.
- The UW-Extension Sheep and Goat website has all kinds of information related to small ruminants, available at <http://fyi.uwex.edu/wisheepandgoat/>. For sheep producers, if you are looking for some recordkeeping management help, check out Cornell's sheep management tools, available for free at <http://goo.gl/mqw18n>. Other great resources for sheep and goat producers are the spreadsheets for budgeting from the Maryland Small Ruminant Program website, available at <http://goo.gl/fj9EIV>.
- The UW-Extension Swine Extension website (<http://fyi.uwex.edu/swineextension/>) is available to connect swine farmers with production and management resources. An extensive list of resources is available from the University of Minnesota Extension program at <http://goo.gl/Hpr6nC> and the Pork Information Gateway at <http://goo.gl/B6nx9P>.

Visit the Central Wisconsin Agricultural Specialization Team on the Web
<http://fyi.uwex.edu/cwas/>

Know Where to Look for Zinc Deficiencies

By: Nav Ghimire, Green Lake County

Minor element, big potential for trouble. Fortunately, zinc deficiency occurs only in certain soil conditions and environments, but in the right circumstances—for example, calcareous soil with a high pH reading—zinc deficiency can easily rob 15 bu. to 20 bu. of corn per acre.

Zinc and other minor elements aren't called micronutrients because their role in crop production is minor, on the contrary, they are called micronutrients because plants only need small amounts, compared with macronutrients such as nitrogen, phosphate and potash.

Micronutrient problems can often be fixed with small applications—from 1 lb. to 3 lb. per acre. But if deficiencies are not corrected, they can have a serious impact on yield.

Micronutrients are sort of like vitamins. Even if you consume a healthy balanced diet, you can run into trouble if you are missing just one vitamin. It's the same with crops and micronutrients.

In plants, zinc plays several important roles, all of which help drive yield.

Zinc is involved in protein synthesis. It plays a big role in grain and seed production, especially silk emergence in corn, because it affects the flowering parts of the plant. Zinc helps drive metabolic processes and helps the plant maintain its hormonal balance.

Since zinc deficiency is not common, there's usually an underlying reason when it occurs. Understanding those reasons will tell you where and when to anticipate problems.

Zinc deficiency is common in calcareous soils because they tend to be alkaline. In high-pH conditions, zinc becomes immobilized and unavailable to plants. Expect zinc problems if soil pH gets above 7.2.

Sandy soils are also prone to zinc issues. Because they are highly leachable, those soils can't hold the amount of zinc plants need. Abused, eroded soils also might not contain sufficient levels of zinc.

Organic matter content is a factor. You're more likely to have zinc issues in soils with 1% organic matter than in soils with 3% to 4%. At the other extreme, organic soils with 40% to 50% organic matter content also are prone to zinc problems."

Certain environmental conditions set the stage for zinc deficiency. The most common zinc deficiency situation is when a farmer has cold, wet conditions at planting, the corn emerges and then the temperature drops. In this situation, a soil test would show adequate levels of zinc. But reduced microbial activity, resulting from the lower temperature, reduces the soil's ability to release zinc for the plants.

Keep this in mind if you're pushing the planting window, planting corn as early as you can. You might want to consider a hybrid that's good at taking up zinc because some hybrids are more efficient than others.

Soils that have been over limed might have trouble taking up zinc. Over liming is most common in no-till and strip-till. It happens when farmers apply too much lime compared with how much they incorporate it. Two or three tons of lime per acre is fine if you incorporate it with tillage, but without tillage, the surface pH might become high enough to trigger a zinc deficiency.

A surplus of a major nutrient can trigger problems with micronutrients. With zinc, problems might occur in soils that are excessively high in phosphorus.

One role of zinc is to move phosphorus from the root system into the plant. If the proper ratio of phosphorus to zinc is maintained, then the process works as it should. But if the ratio gets out of

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balance, it leads to a higher concentration of phosphorus in the root system, which limits the ability of the plant to take up zinc, as well as sulfur.

Fields where manure has been over-applied are candidates for zinc deficiency. Zinc deficiency is most likely to occur if a farmer bases his manure application rate on his nitrogen recommendations. If you apply enough manure to supply all your nitrogen needs, you may end up over-applying phosphorus."

If you suspect a zinc deficiency, there are three ways to confirm it: soil testing, tissue testing, and visual symptoms

Soil testing might be the least effective. With zinc and all other micro-nutrients, soil testing is subject to a range of possible errors. To begin with, it only tells you whether the soil levels are low, medium or high.

Soil testing laboratories also use different extraction procedures, which produce varying numbers. With the same soil sample, you might get a reading of 1.5 parts per million (ppm) zinc from one laboratory and 3.0 ppm from another just because they use different extraction procedures. If you want to track soil zinc levels over time, be sure to use the same laboratory for all your testing.

Tissue analysis will reveal zinc deficiency in your plants. With corn, you need to do tissue testing early in the season. A mild zinc deficiency will disappear by the time corn gets knee-high, having had its impact during the first three to five weeks of growth. Pulling a tissue test at pollination or ear fill won't reveal that early season deficiency.

Identifying zinc deficiency symptoms is easier in corn than in other crops. In corn, you usually see deficiency symptoms from emergence to knee-high. Because zinc is not a mobile nutrient, look for symptoms in the new growth at the top of the plant.

In new corn leaves, the symptoms begin as interveinal yellowing or white streaks. They are similar to symptoms of manganese and iron deficiency. But with iron and manganese, the yellow or white stripes run the full length of the leaf, while zinc stripes are primarily in the lower half.

If a zinc deficiency continues to show up after corn is knee-high, it's pretty severe. With severe deficiencies, the slight striping grows into wide bands between the midrib and the edge of the leaf. Normally, the symptoms disappear with age, but if they don't, you will see a reddish caste in the area where the leaves turn white.

In addition to leaf symptoms, zinc deficiency causes shortening of the internodes. So shorter plants might be a clue to a zinc problem.

Zinc deficiency is less common in soybeans, where it reduces flowering and delays pod growth. Compared with corn, it is more difficult to diagnose. In soybeans, a zinc deficiency has to be pretty severe before you can see symptoms.

With soybeans, symptoms include stunting of internodes and yellowing, which eventually turns brown, between the leaf veins. The leaves will be a little crinkled. Both of these symptoms can be mistaken for a herbicide reaction.

In small grains such as wheat and barley, zinc deficiencies are hard to visually diagnose. In this case, we have to rely more on tissue analysis.

If you have a rotation of soybeans, corn and small grain, pay attention when the field is in corn. If you have a zinc deficiency in corn, pull tissue tests when the field is in wheat.

One good thing about zinc is that there are many ways to manage it and prevent deficiencies. In environments where you know you have zinc deficiencies, you can put zinc in starter or broadcast fertilizer or you can foliar feed zinc.

Timing and placement of zinc fertilizer are the keys to its efficiency and effectiveness.

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Summer Management in Dairy Cattle

By: Matt Lippert, Wood County

UW-Extension has a new series of podcasts on summertime management of the milking herd and replacements. Housing, nutrition, young stock, reproduction are all areas that will be addressed in these brief and timely audio podcasts.

Here is the site for listening to these: <http://fyi.uwex.edu/agpodcasts/>

There will be more heat stress related topics released during the summer. When you get to the site you will see there are a number of other interesting topics there as well.

Here are some selected items from the Ventilation podcast:

David Kammel, UW-Madison/UW-Extension Biological Systems Engineering professor:

One area to assist with heat stress is the holding area. That's probably one of the places where we really need to focus on getting ventilation and air velocity over the cows when they're packed tightly into that holding area. Normally, in a freestall barn cows probably have 100-120 square feet of space per cow. In a holding area, there is only 15 square feet per cow so we've got a lot of heaters all tightly packed together in a tight space. It depends on the parlor of course if it's got open side walls or curtain side walls or power ventilated, but that would be one of the first places that you really need to focus on adding fans, adding velocity, to help keep the cows cool when they're packed very tightly together in the holding area. In the barns, we typically are dealing with naturally ventilated freestall barns in Wisconsin. There are mechanical systems now coming into play on larger farms, but the majority of farms dealing with open curtain side-wall barns is just making sure the curtains are down earlier than maybe you think is needed. Cows are very comfortable at 50-60 degrees, so it may seem cool for us to have the windows open but for the cows they need the windows open. We can always supplement ventilation with fans. One of the misconceptions of adding fans to a barn is that they don't really ventilate the barn. In the naturally ventilated barn, the ventilation is occurring because of natural means. Wind is blowing or thermal buoyancy is going on and we're exchanging air from the inside to the outside. Velocity fans just mix the air or create a higher velocity of the air that's in that space by the action of the fan, and they don't really exchange air, so we still have to think about ventilation first and add velocity next.

Mark Mayer, UW-Extension Green County Agriculture Agent: Try to manage so that cows are in the holding area for no longer than an hour. It's really difficult to lower a cow's body temperature once it has increased. Make sure that fans and inlets are cleaned at least annually. Dirty fans will not run at their maximum capacity. In fact, their capacity can be reduced up to 40% by dirt that accumulates on the fan blades and screens. Finally I want to mention the use of natural ventilation. A lot of our farms use freestall barns, and about 95% of the time we have at least a 3 mile an hour breeze here in the state of Wisconsin. I encourage farmers to take advantage of that. For natural ventilation to work properly, make sure that you've got an open ridge with an opening of at least two inches for every 10' of barn width and that inlets have at least half that opening in size. Sidewalls and eave height are important and should be 12 to 14' high. In my experience, the higher the eave is the more natural airflow through the barn. This is even more critical in the wider 6 row freestall barns using natural ventilation.

Dr. Vicky Lauer, Professional Services Veterinarian, ANIMART: Let's not forget about calves. For calves in calf barns, Positive pressure systems can work very well. A lot of these barns have a winter system. You need a different summer ventilation system. This would really help cool the calves by drafting them. The same technology also works great in holding pens. It works pretty well. Older heifers are often in 3-sided barns, and those barns just do not get much ventilation, I recommend removing the tin on the backside of the barn to get more airflow.

Opportunities Coming for Recycling Ag Plastics

By: Ken Schroeder and Mark Mayer

The use of silo bags, bunkers and wrapped bales has increased dramatically on Wisconsin dairy and livestock farms over the past 10 years. Low density polyethylene (LDPE) plastic film has provided farmers with a low cost method for storing high quality forages and estimates are that over 55 million pounds of LDPE plastic in the form of silo bags, bale wraps and bunker covers are sold annually to Wisconsin farmers. While the use of plastic on farms has proven popular the disposal of used agricultural plastic film has become a big issue on many farms.

A statewide survey conducted by UW-Extension and Wisconsin DNR in 2015 reported that approximately two-thirds of the farmers used landfills for disposing of their used Ag plastic. The second most common method of disposal was burning at 30%, with only 10% reporting that it was recycled. Over 1,500 farms and greenhouses participated in this survey.

Burning Ag plastic is not only illegal, but also releases toxic and potentially cancer-causing chemicals such as dioxins and furans into the air. These toxins can then be inhaled by humans and animals. Residue from burning contaminates the soil and groundwater and can enter the human food chain through crops and livestock. Unburned portions of the plastic also become litter on the ground, with larger piles of plastic becoming a breeding ground and habitat for mosquitoes.

The survey also indicated that 85% of the farmers are willing to haul their plastic to a collection site for recycling. Ag plastic collection programs in Green County have confirmed that many farmers will drive up to 30 miles to have their plastic recycled if there is no charge to dispose of it. We have a lot of used Ag plastic on farms and most farmers preferring to see it recycled versus, burning or paying up to \$1,500 per year to place it in a landfill. So why are we not recycling more Ag plastic in the state?

Green County Example: The major challenge in recycling used Ag plastic films is getting it from the farm to a collection facility for baling. Green County started recycling Ag plastics in 2014 by having spring and fall collections in which area farmers could dispose of their used Ag plastic films free of charge by hauling it to the local landfill. They have collected over 250,000 pounds of used Ag plastic over the past two years and recently expanded their collection program to accepting used Ag plastic every Wednesday from any area farmers that are willing to haul it to the facility.

Green County bales the used Ag plastic into one ton bales which are then sent to a processing facility in Arkansas where it is cleaned, processed and recycled into trash can liners and other plastic products. Only #4 plastic from silo bags, bunker covers, green house covers, drip tape and bale wraps is accepted. Plastic twine, mesh bale wraps, plastic jugs, bunker covers with scrim nylon and all other types of plastic containers are not accepted. Newer technology for plastic processing has solved the cleanliness issues with Ag plastics. However, farmers are asked to shake any excess mud, gravel, dirt, stones and feed off the plastic before storing it. They also encourage them to landfill the bottom portion of silo bags because of the high amount of dirt and feed associated with that portion of the bag.

Coming Soon to an Area Near You: An even more attractive option for Ag plastic disposal is being planned for a roll out in Wisconsin this summer. UW-Extension worked on a pilot program with Revolution Plastics in 2015 in which free dumpsters were provided and placed on 88 farms in Wisconsin and Illinois specifically for storing these types of plastic. The program also included free on-farm pick-up. Due to the success of the pilot program Revolution Plastics now plans to offer this program to several hundred more farmers in Wisconsin in 2016.

Green County is serving as the hub for the rollout of this new program and farmers within a 100 mile radius of Green County will be given first chance to participate in this free recycling program offered through Revolution Plastics. After farmers in the immediate area are served they will then expand out to other areas in the state. Revolution Plastics is looking to set up additional hubs throughout Wisconsin.

Dairy and livestock farmers interested in enrolling in this program that provides free use of a dumpster and on-farm pick up can register to get on a waiting list by going to the Revolution Plastics

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web site at: <http://www.revolutionplastics.com/> If interested, get registered, the more farmers registered in an area the greater the chances of having the next hub in your area.

This program certainly has the makings of being a win-win for everyone involved. It will enable farmers to dispose of their used Ag plastic at no cost, reduce the amount of plastic going to landfills and reduce the amount of plastic being illegally burned, while at the same time recycling the unwanted material into new products.



WHO WE ARE...

Revolution Plastics collects ag and silage plastic from farms and dairies and recycles the material at its United States-based recycling facilities.

Our mission is to provide high-value, sustainable solutions to our customers through innovative closed-loop recycling systems that preserve our environment for future generations.



Email: collections@revolutionplastics.com
Phone: (844) 490-7873

Exclusions apply. Not all farms and/or dairies that sign up will qualify for a dumpster.

Free, On-Farm Ag and Silage Plastic Recycling Program

OUR SERVICE

Depending on your location and plastic use, Revolution Plastics will spot and empty a dumpster on your farm or dairy at no cost to you. The program is limited to the collection of the approved plastics below:

- **SILAGE PLASTICS**
Used bale wrap, ag/grain bags, most bunker covers and oxygen barrier film
- **AG PLASTICS**
Used irrigation tape and tubing, greenhouse, hoophouse, fumigation and other cover films

SIGN UP TODAY AT
www.RevolutionPlastics.com

ARC-CO and PLC Payments

By: Ken Williams, Waushara County

Payments for the 2015 Agricultural Risk Coverage at the county level (ARC-CO) program will be made this fall, providing much-needed funds for many farms with short cash flows. At this point, not all data needed to calculate ARC-CO payments are known with certainty; however, reasonable estimates of payments can be made at this time. As indicated in the final commentary section, farmers and land owners should not expect as large of ARC-CO payments for 2016, unless 2016 revenues are below 2015 revenues.

ARC-CO is one of three choices that farmers and landowners had for receiving commodity title payments under the 2014 Farm Bill. These choices were one-time decisions, made for each program crop on a Farm Service Agency (FSA) farm, with the decisions being unchangeable for the length of the 2014 Farm Bill, scheduled to end with the 2018 production year.

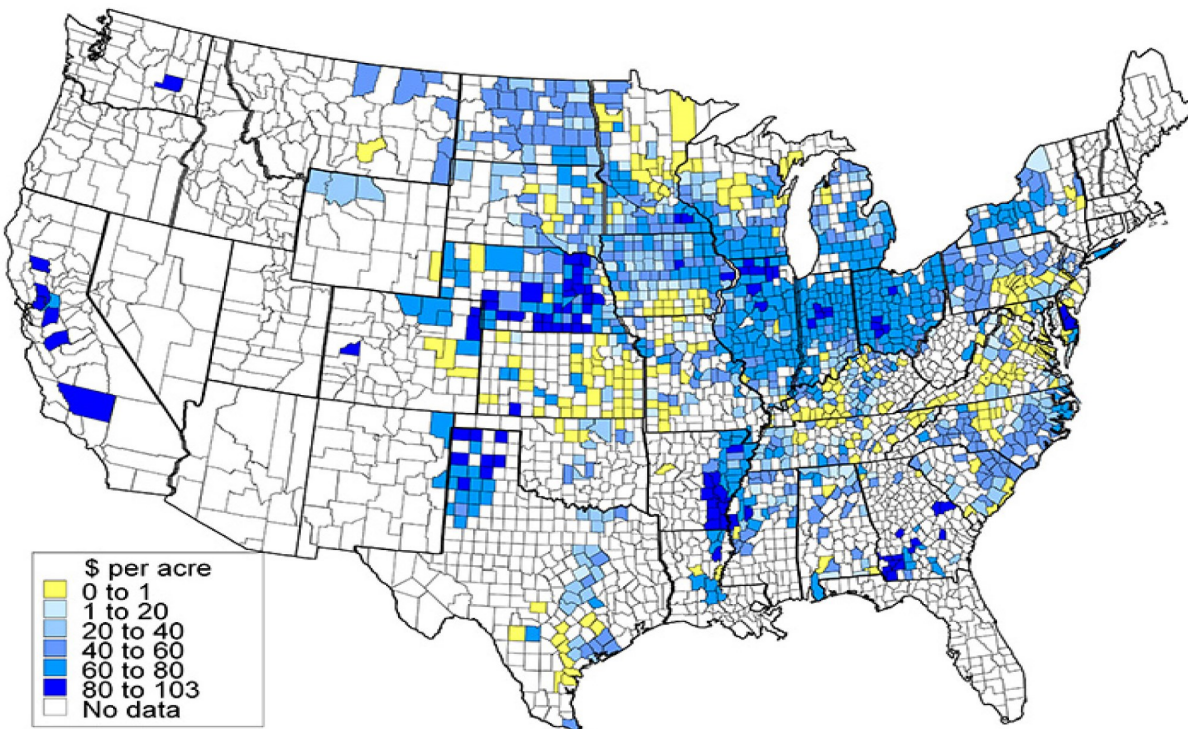
ARC-CO is a county revenue program that makes payments when county revenue is below a benchmark guarantee. To estimate 2015 payments, information on these three items are needed:

- **Market Year Average (MYA) prices.** ARC-CO uses national, MYA prices in the calculation of revenue. The marketing year for corn and soybeans begins in September and ends in August, so the end of the marketing year has not been reached; however, the range of possible 2015 MYA prices is fairly narrow. In its May report, World Agricultural Supply and Demand Estimates (WASDE) report puts the MYA price mid-points at \$3.60 per bushel for corn and \$8.85 per bushel for soybeans. It is very likely that the final MYA price will be within \$.10 of these midpoints. If a bias exists, the mid-point price may be too low should price increases persist for the last six weeks of the summer.
- **County yields.** FSA will release their estimates of county yields this fall before making ARC-CO payments. In this article, county yields released by the National Agricultural Statistical Service (NASS) will be used to estimate 2015 ARC-CO payments. NASS yields will not be the same as FSA yields. Where NASS data exists, FSA yields generally will be below the NASS yield. Where NASS data does not exist, 2015 ARC-CO estimates are not made.
- **Federal Budget Sequester amount.** Last year, commodity payments under the 2014 Farm Bill were reduced 6.8% due to sequester requirement contained in Congressional budgeting processes. A sequester likely will occur for 2015 payments. In this article, a sequester reduction is not included in payment estimates.

Payments may be estimated using the same procedures as used in the ARC-CO PLC Payment Estimator, a Microsoft Excel spreadsheet available for download in the FAST section of farmdoc (click here for download). The 2016 guarantee is estimated to be lower than the 2015 guarantee. The reduction in the 2016 guarantee occurs because it is based on a 5 year Olympic moving average of county yield and U.S. crop year prices. In particular, the higher price year of 2010 was in the guarantee calculation for the 2015 but not the 2016 crop year. This will have the impact of reducing 2016 ARC-CO payments unless either prices or yields are lower than 2015 levels. The 2016 estimate of \$72.06 per acre is based on a lower MYA price of \$3.35, the current midpoint of the 2016 WASDE range.

There are counties where NASS provides an "all" acre estimate while FSA makes payments on irrigated and non-irrigated acres. As a result of yield definitions not matching, a 2015 payment estimate is not given.

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Figure 3. Projected 2015 ARC-CO Payments for Corn**fdd**

Some counties do not have estimates because NASS county yields were unavailable for those counties.

Commentary

ARC-CO payments for both corn and soybeans are negatively correlated with yields, with counties with higher yields receiving lower ARC-CO payments. Those counties with higher yields also had higher revenues from crop sales. In this sense, ARC-CO targets payments to areas with lower revenue compared to revenue from the county during the five most recent crop years.

ARC-CO payments for 2015 will be a significant positive cash flow on many grain farms as net farm incomes are projected to be low in 2016 (farmdoc daily April 26, 2016). However, these payments will not completely offset the lower prices and the remaining, stubbornly high costs that contribute to negative cash flows. Unless prices increase in the near future, an urgent need to cut cash flows now and through 2017 will exist.

Farmers and landowners should not expect the same level of ARC-CO payments for the 2016 production year, which will be received in the fall of 2017, unless prices go to lower levels than are currently being experienced. Moreover, even lower payments should be expected for the 2017 and 2018 production years. ARC-CO design causes its support to decline over time if low prices continue indefinitely. As a result, ARC-CO provides a bridge for making adjustments and lowering costs. ARC-CO will not provide continuing support year-after-year.

Schnitkey, G., N. Paulson, J. Coppess, and C. Zulauf. "Estimated 2016 ARC-CO Payments." farmdoc daily (6):103, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, June 1, 2016.

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Estimated ARC-CO and PLC Payments														
	Adams		Green Lake		Juneau		Marquette		Portage		Waushara		Wood	
Crop	ARC-CO	PLC	ARC-CO	PLC	ARC-CO	PLC	ARC-CO	PLC	ARC-CO	PLC	ARC-CO	PLC	ARC-CO	PLC
Corn Irr	77.79	13	48.59	10	26.96	10	52.61	8	73.3	11	80.49	12	0	9
Corn Non-Irr	48.11	8							47.22	8	53.51	8		
Soybeans Irr	51.22	0	0	0	32.12	0	35.6	0	49.02	0	50.07	0	15.63	0
Sybns Non-Irr	17.94	0							28.36	0	38.59	0		
Wheat Irr	5.55	15	39.3	31	34.17	25	0	19	24.64	20	30.18	22	29.27	27
Wheat Non-Irr	26.77	19									5.55	15		

Counties with no Non-Irr estimates given; estimates are for ALL acres

Thistles in Pastures

By: Craig Saxe, Juneau County

Last fall I wrote an article for our newsletter stating that fall is the perfect time to control weeds using herbicides. That statement still holds true, however, after a couple of thistle related phone calls and issues on my own property, admittedly, now is the time of year thistles are most visible and troublesome. So what can we do right now?

A good place to start is proper identification. In Wisconsin, we have four species of concern. Bull thistle, musk thistle, plumeless thistle and Canada thistle. The first three are biennial plants, meaning they have a two-year life cycle. Biennial plants start from seed. The first year they produce only vegetation, in the form of a rosette growing close to the ground. The second year, they bolt (send up a flower stalk). Canada thistle, on the other hand, is a perennial plant that lives multiple years. Infestations can start from seed, but plants primarily regrow and spread each year from Canada thistle's creeping root system. For specific details to help in thistle identification, see table 1.



All biennial thistles behave similar. Because biennial thistles reproduce only by seed, successful control programs must work to prevent seed production. Mowing when plants just begin to flower prevents seed production, but herbicides are best applied to rosettes in the fall or spring. While herbicides that contain aminopyralid (e.g. milestone, forefront) have the best control, a broad range of herbicides will suppress above ground growth enough to prevent forage loss.

For Canada thistle, control is more challenging. Mowing short (4-6 inches) repeatedly may reduce the plant population, but often it comes down to a timely herbicide application. Comparisons on the effectiveness of several herbicides can be found in table 2. Performance ratings assume the herbicide was uniformly applied, at the correct rate, and at the appropriate stage of development. Be sure to carefully read the herbicide label, paying close attention to required waiting intervals between application and grazing or harvest.

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For more complete details, see the following publications or fact sheets: “Pest Management in Wisconsin Field Crops” A3646 and “Thistles in Pastures and Beyond: Biology and Management”. UW-Extension Weed Scientist, Mark Renz is an author or co-author for these publications. His materials and research were used to create this article.



Table 1. Summary of how to differentiate between common thistles found in Wisconsin

	Canada thistle	Musk thistle	Plumeless thistle	Bull thistle
Leaves	Irregularly lobed. Tips have small spines.	Moderately lobed with white midrib	Heavily lobed	Deeply lobed with distinct spines on leaf edge
Hair on leaves	None	None	Bottom of leaf and petiole hairy	Coarse hair on top of leaf, soft hair on bottom of leaf
Stems	Not spiny	No spines on upper stem below flower	Spiny	Spiny, appears winged
Flowers	Fingertip size. Not spiny. Bracts.	1-2". Stiff bracts.	Fingertip or slightly larger. Prominent bracts.	1-2". Teardrop shaped.

Table 2. Effectiveness of several herbicides on biennial thistles and Canada thistle

	Chaparral	Crossbow	Curtail	Dicamba	Escort	Forefront	Glyphosate	Milestone	Stinger	Weedmaste	2,4-D
Bull thistle	10	9	9	9	8	9	9	10	9	9	9
Musk thistle	10	9	8	9	9	10	9	10	9	9	9
Plumeless thistle	10	9	9	9	9	9	9	10	9	9	9
Canada thistle	10	6	8	6	7	9	9	10	9	7	6

Efficacy ratings: 10 = excellent; 8= good; 6 = fair; 4 = poor; 0 = none; - = insufficient

Silvopasture Workshop July 29-30, 2016 • Luck, WI

University of Minnesota Extension, University of Wisconsin Extension, and the Savanna Institute will jointly host a Silvopasture workshop in Luck, Wisconsin, about 70 miles northeast of St. Paul, MN and 95 miles northwest of Eau Claire, WI.

Silvopasture is a sustainable agroforestry practice where trees and forage crops are grown together on the same piece of land, and grazing animals eat the forages. The livestock provide annual income, and the trees may provide income after a while in the form of wood, nuts or other products. Silvopasture can provide economic and environmental benefits that complement regular forestry and open pasture production, including shade for livestock and habitat for birds and beneficial insects.

The workshop will begin Friday evening, July 29th, with networking and a discussion among silvopasture practitioners and natural resource professionals about their experience with silvopasture.

Saturday morning, July 30th, will begin with indoor presentations, followed by visits to two farms practicing silvopasture in the afternoon.

Topics covered will include:

- Establishment and management of silvopasture;
- Livestock management in silvopasture (focus on cattle)
- Controlling brush, toxic plants and invasives
- Economics
- Opportunities and challenges of silvopasture
- Where to go for more information

Speakers will include University Researchers, Extension Educators, NRCS Grazing Specialist, Practitioners, and Natural Resource Professionals working on Silvopasture.

Locations and Times:

July 29, 2016: 5-7 pm; registration 4 pm. **Location:** West Denmark Lutheran Church, 2478 170th Street, Luck, WI 54853;

July 30, 2016: 8 am -5 pm; registration 7 am. **Location:** 740 Roundlake Rd. Luck, WI, 54853.

Participants can reserve a room at a local hotel ([Luck Country Inn](#) or [Cumberland Inn and Suites](#)) or contact [Diomy Zamora](#) for camping options. Participants can just come for the Saturday portion of the workshop, but we strongly encourage attendees to participate in the Friday evening program.

Registration is \$45 for the full workshop or \$30 for just the Saturday program. Register online at <https://www.regonline.com/silvopasturecamp>. This registration will cover one dinner (Friday, July 29, 2016), and breakfast, lunch and snacks (Saturday, July 30, 2016).

Financial support provided by [North Central SARE](#) and UW Extension.

Questions? Contact: Diomy Zamora; [612-626-9272](tel:612-626-9272) or zamor015@umn.edu or Diane Mayerfeld; dbmayerfeld@wisc.edu or [608-262-8188](tel:608-262-8188)

2015
Gardens

Tickets are \$10 in advance at the following local businesses: UW-Extension Office, 1462 Strongs Ave, Stevens Point; Jung Garden Center, 5620 Hwy 10 East, Stevens Point; Farmers Market-Master Gardener Booth (Saturdays); Gallery Q, 1108 Main St, Stevens Point; Jay-Mar, 2130 Jay-Mar Rd, Plover; Shulfer's 2430 Plover Rd, Plover; Village Gardens, 2811 Porter Rd, Plover or Landmark Coffee Shop, 102 S Main, Amherst or \$12 at one of the garden locations.

19th Annual Garden Parade July 15 & 16, 2016

Friday, July 15th, 2 pm – 7 pm or
Saturday, July 16th, 10 am – 4 pm

Join the UW-Extension Portage County
Master Gardener Volunteers for the
19th Annual Garden Parade
featuring 6 local gardens and floral art at Gallery Q

Garden locations are:

- 5578 Jacks Dr Plover, WI 54467
- 2231 Shadowview Cir Plover, WI 54467
- 2341 Shadowview Cir Plover, WI 54467
- 1150 8th St Plover, WI 54467
- 1810 Hamilton Ct, Plover, WI 54467
- 3101 Jefferson St Stevens Point, WI 54481
- Gallery Q—1108 Main St Stevens Point, WI 54481

For more information contact the
Portage County UW-Extension office at 715-346-1316

Calendar of Events

July

19-21 Farm Technology Days, Walworth County

Snudden Farms, N764 Zenda Road, Lake Geneva, WI 53147

For more information: <http://www.wifarmtechnologydays.com/walworth/>.

24 New Lisbon Memorial Library—Garden Walk, 10 a.m.-3 p.m.

27-28 Juneau County Youth Livestock Expo – Veterans Memorial Park, Mauston

Wednesday, July 27, 5 p.m. – Sheep and Goat Show

Thursday, July 28, 8:30 a.m. – Swine show followed by Beef show

Thursday, July 28, 5 p.m. – Buyer's Reception, 6 p.m. – Youth Livestock Auction

29-30 Silvopasture Workshop

August

6-16 Wisconsin State Fair, 640 S 84th St, West Allis WI 53214

27 **Spoooner Sheep Day, 8:30 AM-3:30 PM.** The complete program can be viewed at the UW-Madison Small Ruminant web site: <http://fyi.uwex.edu/wisheepandgoat/>. A delicious lamb lunch will be served at a nominal fee. Advanced reservations are not required. For more information, contact Lorraine Toman at the Spooner Agricultural Research Station (spooner@cals.wisc.edu, 715-635-3735) or Dave Thomas on the UW-Madison campus (dlthomas@wisc.edu, 608-263-4306).

September

8-11 WI Sheep & Wool Festival, Fair Park, Jefferson, WI 53549

23-25 World Beef Expo, Wisconsin State Fair Park, Milwaukee, WI

October

4-8 **World Dairy Expo, Alliant Energy Center, 1919 Alliant Energy Center Way, Madison, WI 53713**

Madison Hosts National Value-Added Agriculture Conference July 21-22, 2016

There's still time to register for the 18th Annual National Value-Added Agriculture Conference, an event that will provide attendees with excellent opportunities to interact with innovative business owners and economic developers from throughout the Midwest and nation and discuss rural entrepreneurship, adding value to agricultural products, and rural economic development.

National leaders in value-added agriculture will convene in Madison for the conference, July 21-22, 2016. The theme of this year's event is "Agriculture, Innovation, and Entrepreneurship: Developing Thriving Rural Communities." **The deadline to register is July 7.**

Conference topics include: agritourism, rural and urban economic development, food waste, food safety, marketing, policy, local and regional food systems, labor issues, alternative energy, technology, supply chain management, and more.

The 2016 conference is hosted by the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) and University of Wisconsin – Dane County Extension. The event runs all day Thursday, July 21 through mid-day Friday, July 22, with a welcoming reception the evening of Wednesday, July 20, and tours Thursday afternoon.

"We are pleased Madison has been chosen to host the National Value-Added Agricultural Conference and that the Wisconsin Department of Agriculture, Trade and Consumer Protection will serve as co-host," said DATCP Sec. Ben Brancel. "The conference will draw large numbers of agricultural producers, industry representatives and academic specialists to Wisconsin to focus on a theme that underpins many of our department's own efforts: promoting innovation and entrepreneurship in agriculture to help develop thriving rural communities."

The conference's target audience includes farmers, business owners and operators, entrepreneurs, consultants, policy makers, extension specialists, academics, community leaders, and service providers.

Conference participants also will have an opportunity to participate in tours highlighting Wisconsin businesses and value-added industries. (Tours are not included in the price of registration.)

The event will be held at Park Hotel (formerly Inn on the Park), 22 S Carroll St, Madison, WI 53703. The cost to attend the full conference is \$150, which includes meetings, two breakfasts, two lunches, and a reception. There are volunteer opportunities for students and others who cannot afford the full rate. Persons/groups interested in presenting can find more information on the event webpage.

To register and see a draft of the agenda, visit <http://www.agmrc.org/national-value-added-agriculture-conference/>.

For more information about the conference, contact Kietra Olson (DATCP business development specialist) at 608-224-5112 or Kietra.Olson@wi.gov.



County Fair Schedule



July 7-10: Marquette County Fair

757 S Main Street, Westfield, WI 53964
www.marquettecountyfairwi.org

August 14-21: Juneau County Fair

1001 Division St (Hwy 58 South)
 Mauston, WI 53948
<http://www.juneaucountyfair.com/>

July 14-17: Portage County Fair-Amherst

4504 Fairground Rd, Amherst, WI 54406
<http://amherstfair.com>

August 18-21: Waushara County Fair

513 Fair St., Wautoma, WI 54982
<http://wausharacofair.com>

July 21-24: Adams County Fair

County Road J, Friendship, WI
<http://visitadamscountywi.com>

August 31-September 5: Central Wisconsin State Fair

513 East 17th Street, Marshfield 54449
<http://www.centralwisconsinstatefair.com/>

August 4-7: Green Lake County Fair

570 South Street, Green Lake, WI 54941
<http://greenlake.uwex.edu>

September 2-5: Portage County Fair-Rosholt

2545 Merryland Rd, Rosholt, WI
<http://www.rosholtfair.com>



E-mail & Go Green!

If you are interested in receiving the CWAS newsletter by e-mail rather than US mail, please contact your local county Extension office (*see contact information on the back of the newsletter*) and provide us your e-mail address. **By converting to electronic distribution, you not only will be reducing the use of paper and protecting the environment but you will be assisting your office by reducing their mail cost.** Newsletters may come faster and some graphics or photos may be in color not available in the mail version.

Please call, mail or email this information to your local county Extension office (*see back of newsletter for contact information*)

YES—I would like the CWAS Newsletter emailed to me.

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Mailing Address (*this is needed to remove your address from the mailing list*)

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Green Lake County

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How to Contact Team Members