



Farm & Ranch Monthly Magazine

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ROUNDUP

August 2013

Hydroponic Gardening

See page 8



Richland Co. Farmer's Market to Move to Saturdays at Peterson Park

Submitted by Ludmila Keller

For the past 16 years our community has benefited from the generosity of the Richland Federal Credit Union for hosting and sponsoring the Farmer's Market. We want to give a big 'Thank you' to the folks at the Credit Union for volunteering their time and resources all these years for managing this local market that has brought local, fresh produce to our community.

The success in the Farmer's Market can be observed in its continually expanding size. For that reason, the Credit Union has now passed over the torch to the Richland County Extension to accommodate and manage the ever-growing

market. Development of this year's Farmer's Market has certainly been achieved through a team-effort of the health department, city and vendors. Additionally, the Credit Union will stay involved in this community event by kindly providing advertisement.

We hope to see many people and vendors at this year's Farmer's Market to make it an enjoyable event for everyone. The 'new' Richland County Farmer's Market will start August 10, and will be held Saturdays from 7:30AM to 1:00PM at the Peterson Park, Sidney (next to Reynolds Market). Extension encourages new vendors to participate by selling homemade arts, crafts or food items and calling 406-433-1206 with any questions.

PRE-HARVEST SAVINGS!

USED MFWD & 2WD TRACTORS

1999 JD 7810 (150 PTO HP) 20 speed powerquad tranny, MFWD, 3pt hitch, 3 hyds, dual PTO, 380/90 R 50 duals.....	\$69,500
1994 JD 7800 (145 pto hp) 16 speed, powerquad, MFWD, 3pt hitch, 3 hyd, dual pto, 14.9 duals	\$49,500
1994 JD 7800 (150 PTO HP) powerquad tranny, MFWD, 3pt hitch, 3 hyds, dual PTO, 14.9 R 46 Duals.....	Call
IH 5288 (162 PTO HP) 18 speed tranny, 3 hyds, PTO, 20.8x38 duals.....	\$11,500

LOADER TRACTORS

2008 JD 7330 (125 PTO HP) IVT tranny, MFWD, 3 pt hitch, 3 hydraulics, dual PTO, 18.4X38 singles, JD 741 SL loader, 8' bucket, grapple, joystick.....	\$109,500
1986 3150 JD (95 PTO HP), 16 speed tranny, MFWD, 3pt hitch, 2 hyds, dual PTO, 18.4x38 singles, JD 265 SL loader, 8' bucket, grapple & joystick.....	\$27,500
JD 5055E (55 eng hp) 9 speed tranny, MFWD, 3pt hitch, JD 553 loader, 6' bucket. ONLY 30 hrs! FACTORY WARRANTY.....	\$30,000

USED 4WD DRIVE TRACTORS

1998 Case IH 9390 (425 engine HP), 4 hydraulics, 20.8x42 triples	\$99,500
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USED COMBINES AS LOW AS 1.9% FINANCING

(2) 2012 JD S660 combines, 520/85r38 duals, Contour master, low low hours.....	CALL
2000 JD 9750 STS, 30.5x32 duals, chopper	CALL
2002 JD 9650 STS, 800/65X32 Singles, Chopper, Grain Tank Ext	CALL
1998 JD 9610, 30.5X32 singles, dual range, chopper, chaff spreader w/ 2004 JD 936D platform	CALL
1997 JD 9500 w/ 24.5x32 singles, Dual-range, chopper, 925 platform, pick up reel	CALL
1992 JD 9600 w/ 30.5x32 singles, Dual-range, chpper, chaff spreader, 930 platform	CALL
1989 JD 9600 with chopper, 30.5x32 duals, 960 McDon draper header	CALL
1983 JD 7720, 24.5X32, Straw and Chaff Spreader, 224 Platform.....	\$14,500
2010 JD 630R platform, pickup reel.....	CALL
2004 JD 893 Cornhead , 8 row, 30'	CALL
(2) 2004 JD 635F Flex platform, 35'	CALL
2006 Macdon 973 D platform	CALL
2009 Case IH 2010 Rigid Platform, Bat Reel, Less than 100 Hours.....	\$20,000
1997 Macdon 962D platform	CALL

HAY & FORAGE EQUIPMENT

2009 JD 568 Round baler, loaded	\$34,500
2007 JD 568 Round Baler, loaded	\$27,500
2005 JD 567 Round Baler, wide pickup, net wrap	\$23,500
2005 JD 567 Round Baler, Wide Pickup, Net Wrap.....	\$22,500
2001 JD 567 round baler.....	\$17,500
1999 JD 566 Round Baler w/ mega tooth pickup	\$11,500
1994 JD 535 Round Baler	\$7,500
1991 JD 535 Round Baler.....	\$7,500
1987 JD 530 round baler.....	\$4,950

Case IH 8480 Baler	\$2,500
2006 Vermeer 605M Round baler, Loaded	\$21,500
2006 NH BR780 round baler.....	\$16,500
30' platform for Hesston 8100 windrower	\$2,950
CIH 8830 draper platform 25' center.....	\$3,500

TILLAGE EQUIPMENT

Ace 5 Bottom Two-Way Plow, In Furrow, 16"	\$2,950
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MISC. EQUIPMENT

2006 Chevy k1500 pickup. 5.3L V8, auto, air, regular cab, 8' box, 89K miles	\$12,500
Leon 575V spreader	\$36,900
Brandt 5000EX Grain vac	\$12,500
Brandt 5000EX grain vac	\$14,000
2009 Brandt 10x60 Swing away auger.....	\$11,500
2007 Brandt 13x70 Auger.....	\$17,500
1993 REM 552 grain vac	\$5,500
Diamond 72" & 62" mowers.....	\$2,500

SEEDING EQUIPMENT

Flexicoil 5000/2320 Air Hoe Drill, 57', 7.2" Spacing (lot F625)	\$42,500
JD 787/730 Air Disk Drill, 36', 6" spacing, 170 bushel tank	\$16,500
(2) JD 9350 disk drills, 8' units, fertilizer, hitch	\$4,750
(3) JD 9350 disc drills, 10' units, 6" spacing, fertilizer, JD transport hitch	\$11,500

LAWN & GARDEN

2012 JD 3005 compact tractor (23.5 PTO HP) 8 speed tranny, MFWD, 3pt hitch, JD 300 loader "like new"	\$18,500
2012 JD 3720 tractor, cab, MFWD, hydro, JD 300cx loader, ONLY 20 hrs	\$39,500
2007 JD X540 Lawn and Garden tractor 54" Mower, Powerflow Bagger, New Engine	\$5,750
JD 318 lawn tractor w/ attachment.....	\$2,950
2004 JD LT180 L&G tractor	\$1,850
JD 214 L&G tractor w/ C48 broom.....	\$1,500
2009 JD LA155 lawn tractor.....	\$1,500
1992 JD GT262 lawn tractor.....	\$1,150
JD 320 snow thrower	\$150

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A Little Bit Country Threatening Cereal Beetle Found In Region

By Warren Froelich

NDSU Extension Agent, Williams County

Dr. Jan Knodel, NDSU Extension Entomologist, recently reported finding a relatively uncommon insect, cereal leaf beetle, feeding on barley and winter wheat in three new countries of North Dakota. These insects were found at the North Dakota Research Extension Center at Minot, in Burke County near Flaxton, and in Renville County near Mohall.

Adults and larvae both feed on the leaves of cereal crops with the larvae being responsible for a majority of the damage which looks like elongated windowpanes on the upper leaf surfaces. The good thing so far is that the population levels at the three locations were very low and expected to have no economic impact on crop yields. Also, most of our cereal crops are now beyond critical crop stages – pre boot and boot. If the insect is present before the boot stage the economic threshold is three eggs and/or larvae or more per plant. All the tillers should be included in the observation before the emergence of the flag leaf. Larvae feeding in early growth stages can have a general impact on plant vigor. When the flag emerges, feeding is generally restricted to this leaf which can significantly impact grain yield and quality. If the crop is in the boot stage, one larva or more is considered to have potential to cause economic losses.

The mature cereal leaf beetle has the appearance of metallic blue-black with orange middle. The legs and prothorax are red. The females reach .25 inch in length and are slightly larger than the males. The larva has a pale yellow body with a dark brown head and legs. The larvae eat narrow strips of tissue from between the leaf veins. Fortunately there is only one generation per year.

This beetle was accidentally introduced into the United States in Michigan in 1962 from Europe. Since then it has spread in all directions of the United States. The beetle was first detected in Williams and McKenzie counties about 10-15 years ago.

Sapsuckers Like Sugar

A couple weeks ago I voiced a little displeasure about the mowing height of our front lawn. Apparently members of my household took the comments personal and conveniently forgot how to start the new mower or simply thought it was my turn to give the lush grass a fresh trim.

Last week, as I was following the self-propelled beast around the only tree in the yard, a flowering crab, I noticed the tree had a bunch of small ¼ inch holes that seemed to be accurately measured and drilled by a human. Over the years I have encountered other people who had the same

issue so I knew who the culprit was – very likely a yellow bellied sapsucker which is a member of the woodpecker family.

Recently a Tioga businessman called to report several of his large pine trees are dead or on their way to someone's fireplace. So, on my way back from the State Fair yesterday I stopped to inspect the trees. Once again I found these same sized holes placed in neat multiple rows often parallel to one another.

Sapsuckers like the sugar in the sap of certain trees. Once the birds find a favorite tree, they visit it many times per day and feed on it year after year. The holes are deep enough to sever the layer under the bark which is responsible for the conveyance of water and energy throughout the tree. With enough holes, this entire layer of the tree can cut off all nutrients necessary to keep the tree alive.

It is difficult to prevent sapsucker damage to trees. Wrapping the damaged trunk with burlap or smearing a sticky material above and below the holes may inhibit new pecking damage.

A close inspection of my tree did not show new holes so maybe the culprit has met his destiny or found a sweeter tree. Regardless, I will be watchful should he or his relatives come to visit again.

Purchase Crop Hail Insurance by Aug. 15 Deadline

Submitted by Bill Herbolich

Montana farmers and ranchers can purchase state hail insurance at Department of Revenue Property and Assessment county offices until August 15. With crop values high, now is the time to evaluate crop insurance needs.

Montana state hail insurance is designed to cover basic crop inputs and, for many farmers, supplements crop insurance offered by private companies. All of the commonly grown crops in Montana are eligible for state hail insurance.

The Montana Legislature recently increased coverage limits under the program. However, the law takes effect October 1 and changes will be implemented for the 2014 growing season.

This season, dryland producers can insure crops for up to \$50 an acre and irrigated crops can be insured for up to \$76 an acre. For more information, contact Bill Herbolich at the department at (406) 444-2402 or by email at agr@mt.gov.

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Combine**

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2009 CaseIH Puma 155, 3200 Hrs, L760 loader & grapple, MFD, suspended front axle, fast steer, 3 pt., very good condition\$99,000
John Deere 4440, 3 pt, dual pto, good paint, recent engine work	....\$25,000
JD 4840, 3 pt, PTO	.....\$22,500
2005 CaseIH MX255, MFD, 3pt	.....\$108,000
2008 CaseIH 445, 1,200 hrs.	.....\$32,000
2008 CaseIH Steiger 435	.....\$210,000

USED MISCELLANEOUS

Fox Corn Chopper	.....\$4,995
H&S 12R24 Cultivator, guidecones, tunnel shields, flip up discs	.....\$4,995
Alloway 12R24 Cultivator, flipup discs, tunnel shields	..... CALL
Artsway Belly Mower, 6', mounts for a Farmall C	..... Consigned
2008 FarmKing 10x72 auger	.....\$9,500
2009 Rem 3700 Grain Vac, good condition, 120 hrs.	.....\$23,000

USED SEEDING & SPRAYING

Concord 4710 Drill, 3000 tow behind cart, hydraulic drive	....\$30,000
2005 Brandt 2SB4000, suspended boom, 90', 1500 gal. tank	....\$25,000
2005 CaseIH SPX 4410 self propelled sprayer, 1200 gal., 90' booms, Raven Auto Trac, 5700 Hrs, consigned	.....\$95,000

USED HARVEST EQUIPMENT

2005 Macdon 963 Draper head, 35', bat reel, no transport, gauge wheels	.....\$31,000
2005 CaseIH 2388, 1267R/1506E hrs., chopper, yeild & moisture monitor, very good cond.	..... CALL
w/ 2005 2042 35' draper head	..... CALL

USED HAYING EQUIPMENT

2006 RBX563 Round Baler, wide pickup, mesh wrap, endless belts, 8,000 bales, good cond.	.....\$26,000
1999 CaseIH RS561	.....\$12,500
1995 CaseIH 8465	.....\$8,995
1994 CaseIH 8480 Softcore	.....\$6,995
1990 Hesston 560 Round Baler	.....\$5,500
John Deere 530 round baler	.....\$5,500
CIH RBX 563 baler, mesh, wide pickup	..... Just Traded
2008 CaseIH RB564 round baler, 8700 bales, mesh wrap, wide pickup, endless belts, hydraulic pickup lift, central lube	....\$29,900
2003 CaseIH RBX562, MeshWrap, Like New	.....\$24,500

USED Mowers

Grasshopper 618, 52" Deck, Bagger	.....\$4,500
Dixie Chopper LT 2500, 50" Deck\$5,500
Grasshopper 928D, water cooled diesel engine, 61" Deck\$4,900

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Protect Our Pollinators When Using Pesticides

By Janet J. Knodel
NDSU Extension Entomologist

Agricultural production is in full swing in North Dakota, and flowering field crops or weeds in the field are important food sources of many species of pollinators, including honey bees and native bees. Bees are attracted to blooming field crops, such as canola and sunflowers, and even weeds, such as dandelions, wild mustard, white clover and goldenrod, in the field for nectar and/or pollen. Remember if you need to spray a flowering crop with insecticide or any other pesticide, please read, understand and follow the label and protect our pollinators against pesticide poisoning or spray drift. North Dakota leads the nation in honey production and our honey bees are a valuable and needed resource! The value of bee pollination is estimated at 14.6 billion dollars in the United States. With the reduction in number of domestic and wild bee colonies due to colony collapse disorder and other diseases, the value of honeybees and native bees for pollination has increased. This increases the importance of protecting bees from pesticide poisoning. Let's try to avoid any pollinator kills like the example below.

Last week, the EPA notified the Office of Pest Management Policy regarding a large bumble bee kill in Oregon involving a landscaper using an insecticide (Safari, IRAC Group 4A, neonicotinoids) to control aphids in linden trees at a Target parking lot. EPA has been notified that as of last night (8 pm ET), the State of Oregon has issued a 180 day "don't use" moratorium on the product. The investigation is ongoing. This event indicates a need to remind users of pesticides about the absolute importance of reading and following the label – and to pay particular attention to WARNINGS. While this was not a result of an agricultural application and was an urban use, the EPA has asked if OPMP can work through the land grant system to get the word out through extension and education offices to reinforce this very important message to the agricultural community. (Source: David Epstein, USDA Office of Pest Management Policy)

Use of any pesticide in any way that is not consistent with label directions and precautions is illegal. It may also be ineffective and dangerous. The environmental hazard section of labels may include specific restrictions that protect bees. Language that describe bee pesticide restrictions are while "actively visiting (foraging in field)" and "visiting (flying through a field)."

Bees are actively foraging when there is daylight and temperatures are above 60 F. Because bees forage up to two and half miles or more from their hive, all beekeepers within two to three miles of the area to be treated with insecticide should be notified several days before the insecticide

is to be applied. The names of beekeepers can be obtained by going to the North Dakota Department of Agriculture's bee website.

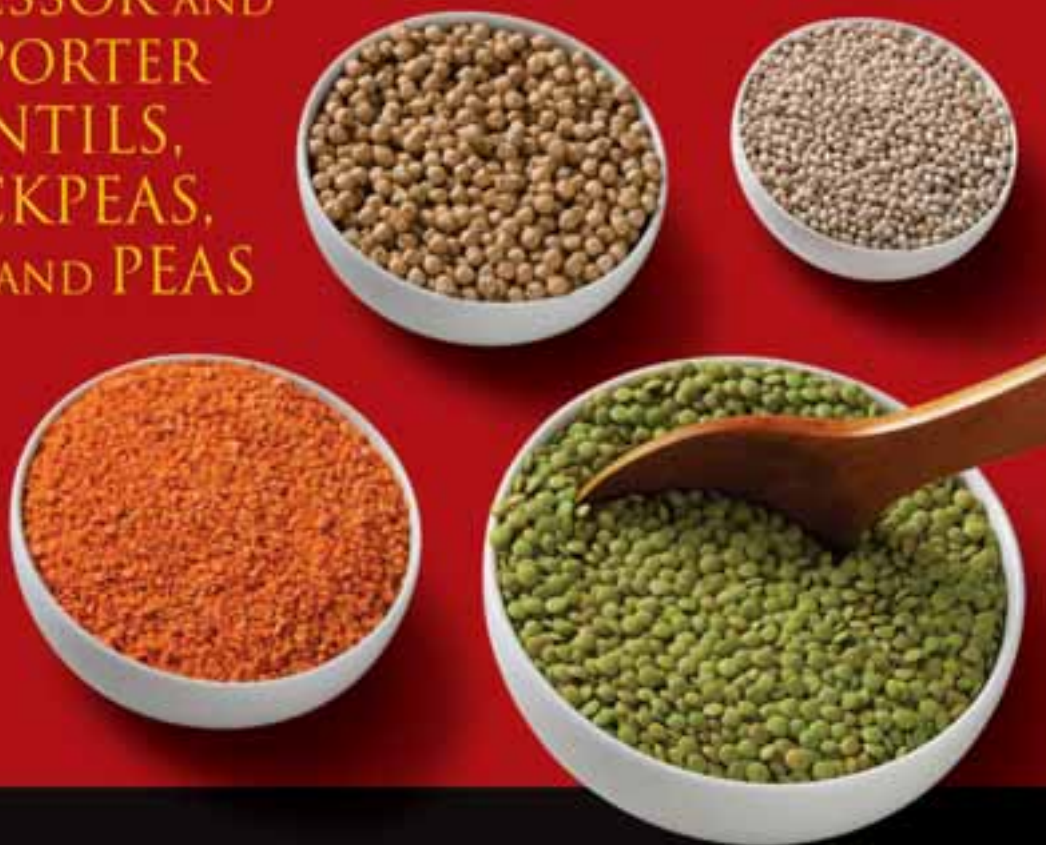
The basic steps in reducing pesticide risks for pollinators are:

- Know and communicate with beekeepers about hive locations.
 - Use economic thresholds and other IPM strategies. Economic thresholds ensure that pesticides are used only when crop losses prevented by pesticide use are greater than the cost of the pesticide and the application.
 - Use pesticides with low toxicity and low residual to bees. For example, avoid using dusts or wettable powder insecticide formulations because they generally are more toxic to bees.
 - Evening or early morning applications are the least harmful to bees, because fewer bees are foraging.
- Never apply pesticides outdoors on a windy day (winds higher than 10 mph) which could cause spray drift problems.





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Hydroponics Gardening Increasing In Popularity

By Tie Shank

Hydroponics is a combination of two Greek words, “hydro” meaning water and “ponics” meaning labor. It is a method of growing plants using a mineral solution in water, without using soil. Research has proven soil is not required for plants to thrive. When a plant root is placed in a mineral nutrient solution or in an inert medium, such as gravel, mineral wool, expanded clay, coconut husk or pebbles, it will grow at a rate of 30-50 percent faster than plant roots planted in soil and will produce a higher yield.

Last winter, 23 year old Nathan Roth of Sidney, Montana heard about hydroponic gardens and began researching it on the internet. He collected a 300 gallon water reservoir, ten – 55 gallon drums (which he cut lengthwise), a pump, some gravel and PVC pipe. He then designed his own pumping system to move water through the rocks to irrigate his plants. The water, along with a nutrient base of Urea and Liquid Sea Kelp Extract is giving Roth better results than any garden his family has ever grown in soil.

When asked what the pros of having a hydroponic garden were Roth replied, “Low maintenance, easy to plant, no weeds and it uses less water.” Roth estimates he uses approximately 50 gallons of water per week, which is far less than he’d use if he were watering the same size soil garden a couple of times per week.

Benefits of Hydroponic gardens:

Hydroponic plants have fewer diseases and fewer problems with bug infestations.

The hydroponic growing mediums help to stimulate root growth by mixing the nutrients with the water and delivering them directly to the root system, this saves the plant from having to search in the soil for the nutrients it requires and



Nathan Roth tends to his hydroponic garden.

allows it to use its saved energy to grow faster and produce higher yields.

Topsoil is not used; therefore topsoil erosion is not an issue.

Less water is used.

Roth states "It's a social experiment and the first year is trial and error, but so far it's going really good."

Right: Roth used food grade plastic barrels and a passive syphon system to grow these peppers.

Below: Roth used 3-1/2 gallon pails from a Billings IGA store to grow his tomatoes.



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33,000 Mile Quest for Montana Beetles Turns Into More

By Evelyn Boswell

Searching for the longhorn beetles of Montana has transformed Charles Hart into a night stalker who pursues his prey with nets, traps and a crowbar.

The 33,000 mile quest over three summers has also turned the Montana State University graduate student into a published author and demonstrated that undergraduate research can foster success, said MSU entomologist Michael Ivie.

Hart was an MSU undergraduate in biology when he joined the Montana Wood-Boring Insect Survey, a joint effort of the Montana Agricultural Experiment Station, Montana Department of Agriculture and USDA-APHIS. Now working on his master's degree in entomology, Hart recently published two papers about his findings in the scientific journal "Coleopterists Bulletin".

"It's always exciting publishing for the first time," Hart said.

Hart continues to search for longhorn beetles and will soon be assisted by five 4-Hers and other interested Montanans who can refer and report to a new website being developed by James Beck, a 2012 MSU graduate in computer science. The 4-Hers, all working on entomology projects in their clubs, live in Custer, Fergus, Lewis and Clark, and Petroleum Counties.

"I started out in 4-H entomology, so it's kind of come full circle," Ivie said.

Hart, Beck and Ivie's work on longhorn beetles can be seen at the new website: <http://www.mtent.org/Cerambycidae.html>.

Hart's work has also spawned a similar project on the

Continued on next page.



Kayla Arend and Charles Hart work in a Montana State University lab to identify wood-boring beetles. The MSU students collected some of the beetles themselves. Others were already part of the Montana Entomology Collection or private collections. (MSU photo by Kelly Gorham).



MSU senior Kayla Arend is identifying the metallic wood-boring beetles of Montana. This is one such beetle. (MSU photo by Robert Peterson)



Charles Hart and Kayla Arend search for wood-boring beetles in an Eastern Montana forest. (Photo by Frank Etzler).

Continued from previous page.

metallic wood-boring beetles of Montana. Kayla Arend of Rochester, MN – an MSU senior minoring in entomology – said she would be ready later this summer to submit her findings for publication.

Longhorn beetles and metallic wood-boring beetles are two types of wood-boring beetles that live in Montana, Ivie said. Wood-boring beetles include both native Montanans who grew up in rotten logs and outsiders who arrived in wood pallets or firewood, and they all eat wood. The emerald ash borer, for example, is a metallic wood-boring beetle that eats ash trees that have been introduced from Asia to the U.S. Midwest. If an infestation occurs in Montana, the borer could destroy the look and feel of Montana towns where most of the shade is provided by native ash. Bozeman's "forest" is 60 to 80 percent ash.

Wood-boring beetles kill trees by eating the cambium layer between the bark and the wood, thus preventing water and nutrients from reaching the leaves.

The goal of Hart's work is to identify the longhorn beetles that are now present in Montana, making it easier to spot invasive species and take early action, Ivie said. Hart has documented 151 species so far, including the first report of an invasive that is newly arrived in the state. That's 55 more than recorded previously, but information from a statistical analysis of the data indicates that Montana could still have another 29 species that haven't been documented.

Longhorn beetles are relatively well-known throughout North America, but gaps of knowledge exist in areas that have been poorly collected, Ivie said. He added that no one else has conducted the comprehensive survey of Montana that Hart is.

"It's a matter of boots on the ground," Ivie said.

Noting that Montana is still a frontier when it comes to documenting some of its fauna, Hart said he has been interested in bugs since he was a boy growing up in Idaho Falls, Idaho. He didn't become serious about them until he took an introductory course from MSU entomologist Kevin O'Neill, however. He then decided to minor in entomology and started working for Ivie. He eventually obtained funding from MSU's undergraduate Scholars Program to conduct research under Ivie's supervision.

Hart's project has taken him into the Montana Entomology Collection, which is housed at MSU and curated by Ivie, and the private collection of James Cope of Ennis, Hart said. That alone gave him 8,631 Montana specimens. The project has also taken him on back roads, through forests and into every county of Montana.

Sometimes working alone, sometimes with a partner, Hart has an assortment of traps that let him capture beetles whether they crawl on the ground, fly high or aim for the middle. He sometimes catches beetles with a net. Other times, he finds them by using his crowbar to pry the bark off of rotting logs.



Charles Hart and Kayla Arend remove samples from a trapping container they set in Eastern Montana. (Photo by Frank Etzler).

"It's a lot of running around woods at night," Hart commented.

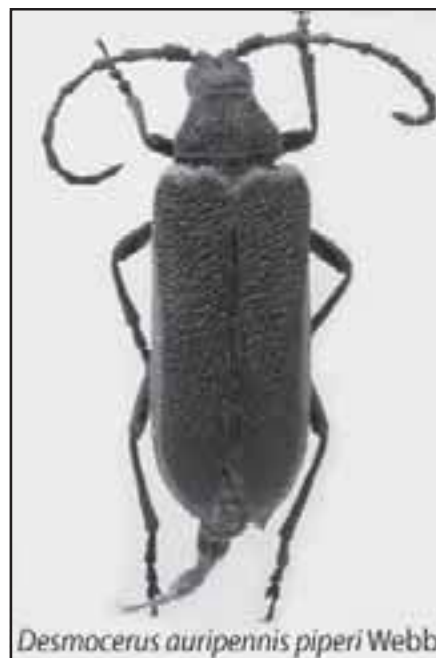
Arend's project – also funded by the Undergraduate Scholars Program – has her making a checklist of all the metallic wood-boring beetles in Montana. For that, she is identifying and double-checking identifications of beetles from the Montana Wood-Boring Beetle Project in the Montana Entomology Collection, as well as three private and several other museum collections that were loaned to the researchers.

She, too has been fascinated by insects ever since she was little, Arend said. In fact, she often had bruised fingers, smashed hands and missing fingernails from lifting and dropping the heavy rocks that hid the biggest bugs. Still intrigued today, she said, "insects are fascinating because they are alien-like creatures."

Arend and Hart both said they enjoy research.

"It's kind of like a puzzle," Arend said. "I really like that aspect of being able to figure things out."

MSU grad student Charles Hart is seeking longhorn beetles in Montana. This is one type of longhorn beetle. (Photo courtesy of Charles Hart).



MSU Beef Researcher Named ASAS Fellow

Submitted by MSU News Service

Don Kress, professor emeritus at Montana State University, has received the American Society of Animal Science (ASAS) Fellow Award in honor of his research in the beef industry.

Kress received the award July 9 at the ASAS national awards program in Indianapolis.

Kress was recognized for improving the beef industry through the study of genetics and breeding. He studied the genetics of a variety of traits under Montana range conditions, including calf growth rate, cow size, cow milk production, cow maternal ability, and carcass characteristics. He cooperated with researchers at MSU's Northern Agricultural Research Center near Havre to show that maternal heterosis (hybrid vigor) was especially important for Montana's commercial beef herds. Kress has also been an author or coauthor of more than 200 scientific journals and 100 abstracts.

Kress was raised on a beef cattle, hay and small grains operation in Idaho. From there, he attended the University of Idaho where he received his bachelor's degree and was recognized as an outstanding senior. He then attended the University of Wisconsin, where he earned his master's and doctoral degrees in animal science, genetics and statistics.

Kress came to MSU in 1970 as an assistant professor in the Department of Animal and Range Sciences. Over the next 35 years, he taught graduate and undergraduate courses related to cattle and genetics. Kress was named associate dean of the MSU College of Agriculture in 2001. Kress retired in 2005.

Among other awards, Kress received the Rockefeller Prentice

Memorial Award from the ASAS in 1996 and the Pioneer Award from the Beef Improvement Federation in 2005. He was invited to present results of his beef genetics research to producer groups in 14 states. He also established a cooperative beef cattle research program with MSU's Northern Agricultural Research Center.

The ASAS Fellow is presented to animal scientists who have made excellent contributions to the animal industry and have had continuous membership in the ASAS for at least 25 years. ASAS is a professional organization that serves more than 5,000 animal scientists and producers around the world.



Don Kress of MSU has received the American Society of Animal Science Fellow Award. (MSU photo by Kelly Gorham).

BeefTalk: Pondering Grass

The efficiency of a beef production system is perceived to be based on rapid growth with an early harvest. Is that true?

**By Kris Ringwall, Beef Specialist
NDSU Extension Service**

The Dickinson Research Extension Center had three pens of yearling steers. One pen (A) was harvested when the steers were 18.1 months old. The next pen (B) was harvested when the steers were 21.4 months old and the last pen (C) was harvested when they were 22.1 months old.

The world of beef revolves around the steer because it is the principle product of a beef production system. The efficiency of a beef production system is perceived to be based on rapid growth with an early harvest.

Is that true? Having personally assumed that for years, considerable pondering is required to change things. As producers, what we learn and ultimately do is assumed to be correct, but times change and so does the world, and so I ponder and hope many others also ponder.

Let me repeat that the Dickinson REC had three pens of yearling steers. Pen A was harvested when the steers were 18.1 months old. Pen B was harvested when the steers were 21.4 months old and pen C was harvested when they were 22.1 months old.

In addition, the steers in pen A were on feed for 142 days, pen B for 66 days and pen C for 91 days. Having lived through a few decades of beef production with the driving force being efficiency and growth based on affordable energy inputs, none of the statistics for these pens are very impressive. In fact, the only limiting factor for growth was pelvic size because, no matter how much effort was put on growth, the calf still had to get out of the cow.

Prebirth and subsequent growth still is highly correlated, although gestational length and some tweaking of growth genes have allowed for some change in the prebirth and post-birth scenarios. However, the basic concept has not changed.

The other limiting factor to rapid growth was the limitations placed on carcass size at harvest. These limitations most certainly have varied with time and are somewhat correlated with beef supplies. That's because the larger beef numbers limit the need to push for heavier carcass weights. With today's beef supply numbers being down, there certainly is a logical acceptance of needing heavier carcasses.

So, what do I ponder? Well, efficiency still is paramount in any industry. The efficient use of resources should generate a positive outcome if there is a positive outcome available. Producers who are efficient should be more profitable.

Steer feedlot pens that achieve high gains of 5 pounds or more per day are duly noted. Lower gains of less than 3 pounds would be assumed to be very inefficient.

In visiting with Doug Landblom, an animal scientist with the Dickinson REC, these steers were weaned and overwintered at less than a pound of gain per day. So what do I ponder? Well, that goes against everything I've learned. These steers, in retrospect, could gain 4.5-plus pounds per day in the feedlot, so logically they could have gained that earlier in life had they been sent as calf-feds to a feedlot following weaning. With those gains, the majority of those steers would have been harvested at 12 to 15 months of age. However, they were not sent. Instead, they were targeted for grass. And so I ponder.

The center is compiling more economic data. In visiting with Landblom, pen A of yearling steers that was sent to the feedlot prior to grass turnout and harvested at 18.1 months of age lost the center \$298.05. Pen B of yearling steers that was sent to grass for summer grazing but brought in to graze higher-quality annual crops as the pastures dried down were harvested at 21.4 months and made the center a profit of \$9.09. The yearling steers in pen C that were grazed all season and then sent to a feedlot in the fall and harvested at 22.1 months of age lost the center \$30.10.

Even though the harvest price did not support a strong profit incentive back to the center, the center could not overlook the difference of \$307.14 between the lowest negative profit pen (A) and the highest positive profit pen (B). And so I ponder.

The motivation for keeping the steers over winter on a low level of nutrition was low costs, but there also was a relatively inefficient gain. On a positive note, although small, the only profitable pen was pen B that was grazed on early summer grass followed by annual crops and then a short time in the feedlot.

There will be more later and more to ponder. However, keeping the steers longer did not result in a negative impact. If anything, particularly with the need to increase carcass weight as cattle numbers drop, more positive weight was added.

May you find all your ear tags.

For more information, contact Ringwall at 1041 State Ave., Dickinson, ND 58601, or go to <http://www.ag.ndsu.edu/news/columns/beeftalk/>.

(Ringwall is a North Dakota State University Extension Service livestock specialist and the Dickinson Research Extension Center director.)

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The company also produces approximately 50,000 tons of pressed pulp each year and 35,000 tons of molasses for sale.

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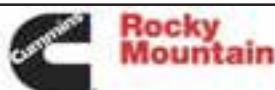
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Sidney Chamber Looking for ATVs and Lawnmowers



Submitted by Wade VanEvery

An ATV and lawnmower pull will again be a feature of the MonDak Harvest Fest held by the Sidney Area Chamber of Commerce and Agriculture on August 24th. This event will be held at the grandstand arena of the Richland County Fairgrounds in Sidney, MT. Classes will include ATVs under 500cc, 500 to 700, over 700, steering wheel class, along with lawnmowers. A specific pulling sled designed and provided by Marvin Varner of Terry, MT will offer the challenge for anyone wanting to compete. Entry fees and a purse will be awarded to the top finishers in each class. Pre-registration is appreciated, however entries will be taken at 3:00 p.m. on the day of the event. Gates to the grandstand open at 5:00 p.m. MDT and the pulling will start at 6:00 p.m. Call the Sidney Chamber at (406)433-1916 to enter and for more information.

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Prairie Fare: Historical Canning Recipes Not Necessarily Safe

Recommendations change as scientists learn more about what is safe and what isn't.

By Julie Garden-Robinson
Food and Nutrition Specialist
NDSU Extension Service

The other day, I stopped at a convenience store to fill my vehicle with gas. A nationally produced canning book with a colorful, attractive cover beckoned me. I plucked a book from the shelf and quickly paged through it as I awaited my turn in line.

The author talked about "great-grandma's recipes" and provided recommendations for canning based on yesteryear. I am interested in food history, so that aspect caught my attention. Unfortunately, the processing times for several foods would not be considered safe by today's standards.

If my great-grandma were alive, she would not want me (or you) to be sickened for the sake of nostalgia.

I should have bought all the books to take them out of circulation, but the books were fairly expensive. Buying them just prompts the publisher to reprint them.

If you decide to preserve foods, be sure to use the most up-to-date resources for safety. Compare old recipes to new research-tested formulations; some might be OK. Other recipes have changed as more research in home canning is done.

Let's take a trip back in food preservation history. According to food historians, the earliest method used to decide if food was edible was trial and error. Let's call it "Plan A." Making a mistake about edibility had dire results.

The survivors then developed "Plan B."

"Plan B" involved observing animals. If animals ate the food and survived, chances are you would, too. You could get quite hungry and tired observing animals before trying an unfamiliar food, so there was a need for "Plan C."

Because food wasn't always available when you needed it, "Plan C" involved preserving familiar foods. Most food preservation techniques likely were discovered by accident. If you lived in the desert, the sun and wind naturally dried your food. Frigid areas of the world offered natural walk-in freezers.

Fermentation was discovered somewhere along the historical line. Wild yeasts and other microorganisms naturally present in the air fell on fruit, causing the sugars to ferment into alcohol. Someone tried it and liked it, maybe too much. Wine was the result. Sauerkraut and yogurt had similar beginnings.

Pickling, curing with salt and preserving with sugar to make jams were other discoveries that extended the shelf life of foods throughout history. Canning foods had its beginnings in the 1790s when a Frenchman, Nicolas Appert, heated food in glass bottles and noted that the food didn't spoil as quickly. Scientists, including Louis Pasteur, later learned much about microorganisms and their relationship to food spoilage and developed other preservation techniques.

Much of the research about home canning took place in the 1940s and continues today. Recommendations change as scientists learn more about what is safe and what isn't.

Many of my great-grandma's recipes probably are no longer considered safe, even though generations of relatives may have survived eating the food. Tomato varieties, for example, have been bred to be less acidic to appeal to our tastes. Great-grandma's famous canned stewed tomato recipe might have dire results using today's tomato varieties.

Preserve food safely with these general rules for safe canning:

Use a pressure canner and current U.S. Department of Agriculture processing guidelines to can low-acid foods, such as vegetables and meats.

Acidify tomatoes with the recommended amount of bottled lemon juice or citric acid prior to canning (1 Tbsp. of bottled lemon juice per pint of tomatoes; 2 Tbsp. per quart). Be sure to process the tomatoes for the recommended time.

Use research-tested salsa recipes and don't alter ingredient proportions. If you create your own salsa and want to preserve it, freezing it is the safest option.

Seal jams and jellies with a regular canning lid (not wax) and process in a boiling water bath for five to 10 minutes, depending on altitude.

Free food preservation resources (canning, pickling, making jams and jellies, drying, freezing) are available at <http://www.ag.ndsu.edu/food>.

If you are new to home food preservation, consider making jellies or jams, such as this refrigerator fruit spread, as a starting point.

Uncooked Berry Jam

2 c. crushed strawberries or blackberries (about 1 quart berries)

4 c. sugar

Continued on next page.

Continued from previous page.

1 package powdered pectin

1 c. water

Yield: About five or six half-pint jars

Sterilize canning jars and prepare two-piece canning lids according to manufacturer's directions. To prepare fruit: Sort and wash fully ripened berries. Drain. Remove caps and stem; crush berries. To make jam: Place prepared berries in a large mixing bowl. Add sugar, mix well and let stand for 20 minutes, stirring occasionally. Dissolve pectin in water and boil for one minute. Add pectin solution to berry-and-sugar mixture; stir for two minutes. Pour jam into freezer containers or canning jars, leaving 1/2-inch head space at the top. Close covers on containers and let stand at room

temperature for 24 hours.

To store: Store uncooked jams in refrigerator or freezer. They can be held up to three weeks in the refrigerator or up to a year in a freezer. Once a container is opened, jam should be stored in the refrigerator and used within a few days. If kept at room temperature, the jam will mold or ferment in a short time.

On average, 1 tablespoon of fruit jam has about 50 calories, 0 grams (g) of fat, 0 g of protein, 13 g of carbohydrate and 10 milligrams of sodium.

(Julie Garden-Robinson, Ph.D., R.D., L.R.D., is a North Dakota State University Extension Service food and nutrition specialist and professor in the Department of Health, Nutrition and Exercise Sciences.)

Renewable Accounts: Energy Returns on Biofuels

The results can vary greatly depending on the data and assumptions used.

**By David Ripplinger, Bioproducts and Bioenergy
Economist and Assistant Professor
NDSU Department of Agribusiness and Applied
Economics**

Last week, an industry colleague forwarded to me an article that criticized corn-based ethanol on a number of fronts.

Among the article's major criticisms was that corn-based ethanol uses more energy to produce than it delivers, a very powerful claim that resonates well, true or not.

To investigate the issue, scientists often calculate a fuel's energy return on energy invested, or EROI. The arithmetic is simple because it's just energy output divided by energy input. However, the results can vary greatly depending on the data and assumptions used.

Estimating EROI requires building an accurate energy budget from field to consumer, which can be a very demanding exercise.

For example, a corn-to-ethanol energy budget requires estimates of the fuel used to power the machinery to plant, spray and harvest the corn and also the energy required to produce the machinery, manufacture the fertilizer and pesticides, and sustain the farm laborer, which is more than a can of pop and a summer sausage sandwich.

Beyond the field, the energy associated with storing and converting the corn into ethanol, including that required to build the biorefinery and transport the biofuel to consumers, typically are included.

All along the way, decisions on how to model the pro-

cess and what data to use must be made. These decisions typically aren't cut and dried.

A study by David Pimental and Tad Patzek published in 2005 that estimated a corn-based ethanol EROI of less than 1 was widely reported by the media and continues to be a primary piece of evidence against corn-based ethanol.

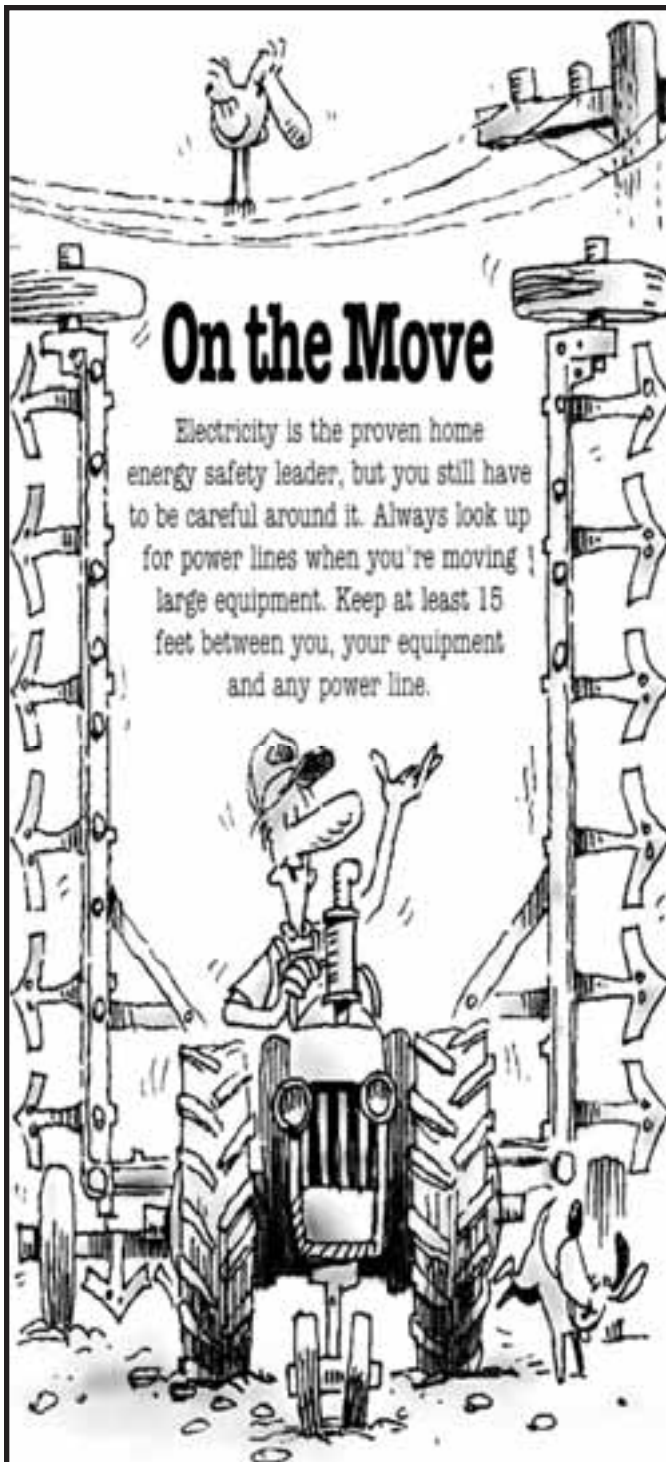
However, some scientists criticized the study for undervaluing dried distillers grains and overestimating some energy inputs. Again, this goes back to the impacts of data and assumptions.

The University of Minnesota has estimated an EROI of 1.25, while the U.S. Department of Agriculture estimated dry-mill operations to have an EROI of 1.37.

Intuitively, it doesn't make sense to support energy-related activities with an EROI of less than 1, but that's not the case. There are a number of desired, economically profitable activities that have EROIs of less than 1. A good example is the generation of electricity, which has an EROI of about 0.4. This is substantially less than 1 but, as a consumer, I want kilowatts of electricity delivered to my home, not a ton of coal dropped in my driveway.

One of the biggest challenges is assigning energy to coproducts. This is especially important for corn-based ethanol because it contains about the same amount of energy as dried distillers grains and corn oil on a per-bushel basis. This is energy that could be used as fuel.

So, is corn-based ethanol an energy sink? Most studies say no, but it depends on the numbers used, the assumptions made and, in many cases (unfortunately), the argument one is trying to make.



On the Move

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Pourroy Wins 2013 RAM Truck

Lee Pourroy, Parts Manager of Tri-County Implement Inc., in Sidney, MT., is pictured with his new 2013 RAM pickup truck that he won at the CNH Parts & Service EXPO dealer event held earlier this year. At the bi-annual dealer

event, more than 5,000 dealers, suppliers and CNH employees were introduced to the newest products and business initiatives from Case IH and its after sales unit, CNH Parts & Service. Every registered dealer had a chance to win prizes, including a RAM pickup truck, as part of a random drawing. Mark Reed of CNH parts and Service presented Lee his new RAM. Lee Pourroy, who has been a Case IH dealer employee for nearly 40 years, was thrilled to win the truck. "I was in total shock, I've never won anything like this in my life," Lee said. The new RAM truck replaces Lee's 2003 GMC. "I've already driven it 500 miles and I am really impressed with the truck – especially the electronics," Pourroy said. To honor Case IH, Lee detailed the truck with red stripes and Case IH-labeled mud flaps. Gary Schoepp from Action Auto, our local Ram Dealer, assisted with the order and delivery of the pickup truck.

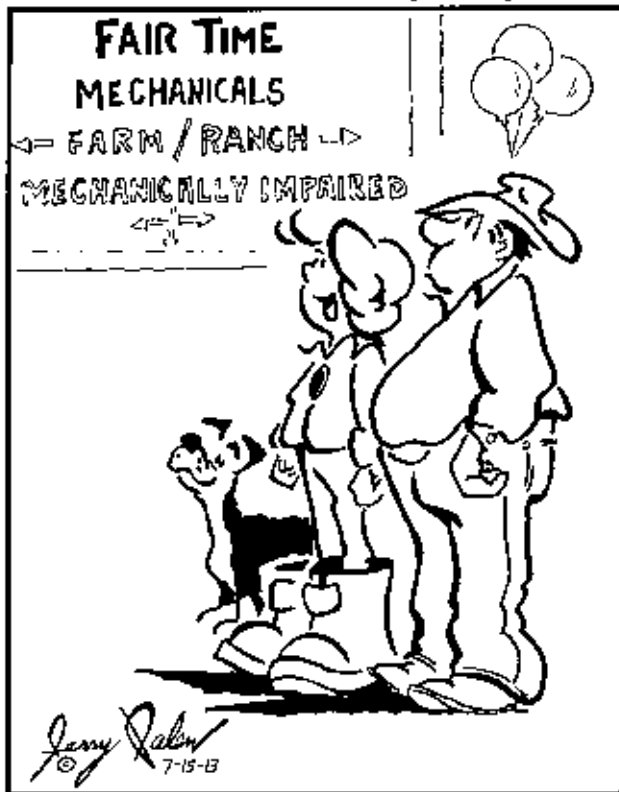


High School Rodeo Partners

Seth Indergard, son of Stacey & Kelly Indergard, Sidney MT. is teamed up with his team roping partner Hayes LeMieux, son of Mary & John LeMieux, Manning ND. The two qualified 3rd at the North Dakota State High School Finals in Bowman ND in team Roping. Only the top 4 placers at state get to go to National High School Finals in Rock Springs, Wyo July 14-20. This is quite an accomplishment as they went in to state sitting in 9th and had to really rope well to make it. The boys are freshmen in high school and friends.

STAMPEDE

By Jerry Palen



"Oh look, Elmo.
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Alfalfa Weevil Serious Pest



Eggs of the alfalfa weevil inside the stem of an alfalfa plant. (Sue Blodgett, Iowa State University, Bugwood.org)



Adult weevil. (Photo by Joseph Berger, Bugwood.org)



Weevil damage. (Photo by Deb Waters, USDA-ARS, Sidney, MT)

Submitted by Beth Redlin

Alfalfa is the second most important crop in Montana after small grains, and alfalfa weevil is the most serious pest of alfalfa in the High Plains region. The USDA Agricultural Research Service in Sidney has been monitoring weevil populations since 2009, and last year (2012), represents the first year in which economically damaging levels of weevils were observed in irrigated fields in the Yellowstone and Missouri river valleys, according to Tatyana Rand, a Research Entomologist with the USDA-ARS-Northern Plains Agricultural Research Laboratory in Sidney.

Many growers noticed this pest last Spring when their fields started to turn grey, and there was much speculation as to what it actually is, Rand said. In fact, the alfalfa weevil is a snout beetle in the family Curculionidae. The adults are brown with a very beetle like appearance, easily recognized by most. However, it is the larvae (grubs) which are actually damaging in alfalfa fields, Rand said. Larvae are about 1/20-3/8 inches long, depending on age, and later stages are bright green with a black head and a white stripe down the back.

"During severe infestations, like we saw in 2012, weevil larvae can substantially defoliate plants resulting in severe first-cutting losses if not controlled," Rand noted. "They can also retard post cutting re-growth and decrease stand density over the longer term."

MSU Extension has excellent information on how to

monitor and manage this pest, according to Rand, which can be found on the Internet at: <http://www.ipm.montana.edu/Training/PMT/2006/AlfalfaWeevil.pdf>. Another just-released Extension resource from North Dakota State University will also be available on the Internet soon, she said. In the meantime, interested persons can contact Rand (406-433-9439 or Tatyana.Rand@ars.usda.gov) for a copy of that publication entitled "Integrated Pest Management of Alfalfa Weevil in North Dakota." While there are several insecticides available for managing high numbers of the pest, generally the most effective method is early cutting, Rand noted. Avoiding pesticide use is encouraged where possible as they also kill desirable insect species such as honeybees in addition to the alfalfa weevil.

Due to its widespread economic impact across the US, alfalfa weevil was the target of a nation-wide biological control program carried out by the USDA in the 1980's. Five parasitoid wasp species that attack and kill weevils were released in the MonDak region, but almost nothing was known about whether they actually became established here and how important they are in keeping weevil numbers down, Rand noted.

"We are currently determining which natural enemies (predators and parasitoid wasps) are dominant in Eastern Montana alfalfa fields and what management approaches might be useful in conserving and promoting these beneficial species to maximize biological control of weevils," Rand

said. Initial results indicate that at least two parasitoid wasps are present in the region and rates of parasitism are generally high (averages in 2009 and 2010 were 58% and 29% respectively), suggesting that parasitoids play an important role in keeping weevil numbers down in most years.

However, the dominant parasitoid, *Bathyplectes curculionis*, has a hard time keeping up (it kills relatively fewer weevil larvae) when weevil numbers are high (Figure 2a). A second parasitoid, *Oomyzus incertus*, does better under these conditions, but is much rarer, so does not fully compensate for the loss of activity by *B. curculionis* in years of high weevil density (Figure 2b). Future work will focus on how to augment numbers of these parasitoids, particularly the rarer wasp species, as well as scouting for, and potentially re-introducing, other parasitoid wasps that are highly effective in controlling weevils in other parts of the US.

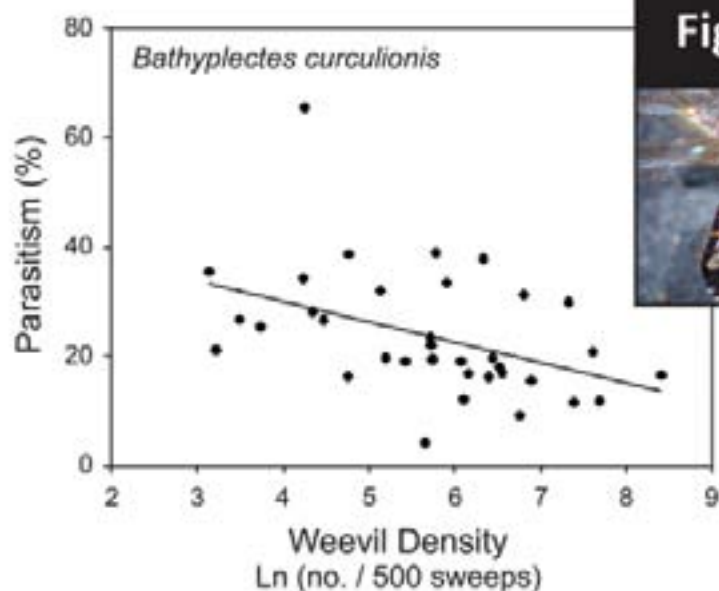
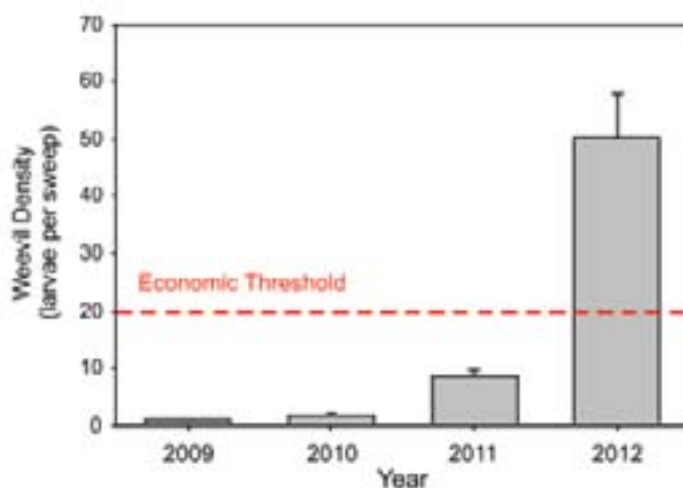


Figure 2a

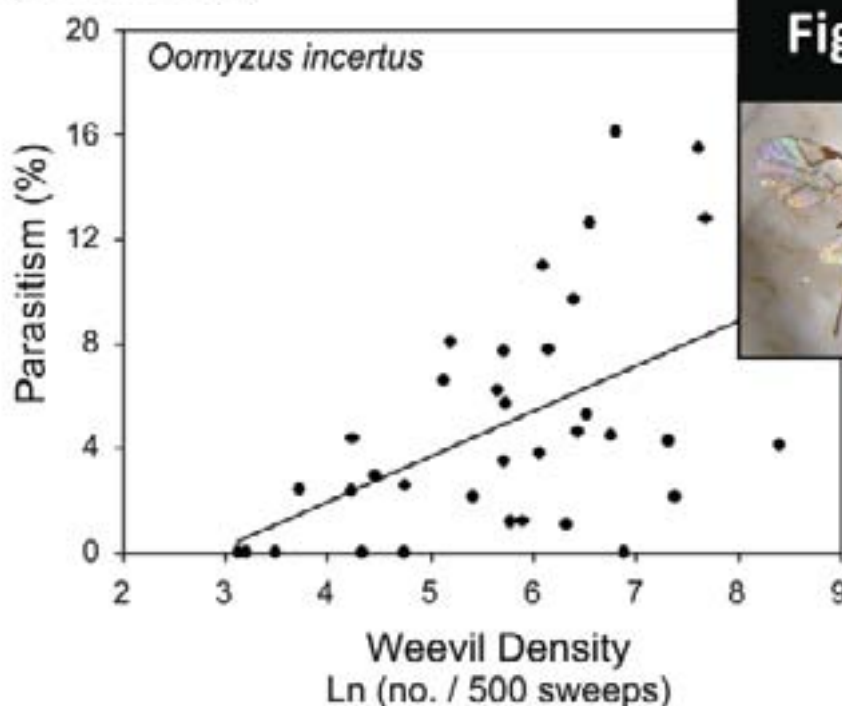


Figure 2b





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Beginning Beekeeping Workshop to be Held August 24 in Billings

Submitted by MSU News Service

A beekeeping workshop for beginners will be offered Saturday, August 24 in Billings.


The workshop will run from 8:30 a.m. to 3 p.m. at the Yellowstone County Courthouse. Participants will learn how

to buy bees and equipment, establish a new beehive, register their hives, conduct yearly hive maintenance, prevent pests and harvest honey and wax. They will also taste some varietal honey types and look at hobby-scale honey harvesting equipment.

Cost of the workshop is \$25. Those who want to attend should make out a check or money order to MSU and go to <http://bigskybees.org/2013%20Billings%20Beekeeping%20Wkshp.pdf> for a registration form. Send the fee and form to: Billings Beekeeping Workshop Plant Sciences and Plant Pathology, P.O. Box 173150, MSU, Bozeman, MT 59717-3150.

Registrants will receive email confirmation, a map and directions to the exact location of the beekeeping workshop. For more information, contact Ruth O'Neill at 406-994-5176 or ruth.oneill@montana.edu.

This article is available on the web at: <http://www.montana.edu/news/12054/beginning-beekeeping-workshop-to-be-held-aug-24-in-billings>.




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Agri Industries Ribbon Cutting

Agri Industries hosted an open house and ribbon cutting July 17 to celebrate their expansion. Pictured, L to R, are Sunrise ambassador Colleen Topp, Sidney Chamber of Commerce executive director Wade Van Every, Brandon Roth, Ryan Dore, manager Lee Candee, owner Mike Ames, Brandon Ensrud, Gary Dardis, Neil Iversen, Chamber president Dan Peters and Sunrise ambassador Cheryl Peterson.

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Sidney Area Chamber of Commerce & Agriculture Ag Appreciation Golf Tournament Winners



The Sidney Area Chamber of Commerce & Agriculture held its annual Ag Appreciation Golf Tournament July 8. Top left: 1st Place Team, Sponsored by Lower Yellowstone Irrigation Project, (L-R) Neil Turnbull, Gene Fisher, Patrick Hackley and Dillon Murray. Top left: 2nd Place Team Sponsored by 1st Bank. (L-R) Tom Thompson, Camron Debruycker, Billie Taylor and Brad Franklin. Bottom left: 3rd Place Team Sponsored by XTO Energy (L-R) Dale Danielson, Jim Noble, Don Helm, Harold Schlothauer.

The team prizes were provided by Dr. Laqua at Yellowstone Chiropractic, Cowboy Crane Service, and Mark Voll representing Zoetis.

About The Ag Roundup



The Ag Roundup is a monthly Farm & Ranch Magazine. It is delivered to over 10,000 farm & ranch families in Western North Dakota and Eastern Montana. The advertising and news deadline for the September 2013 issue is August 27.
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