



# Farm & Field

Chippewa Valley Agriculture Newsletter

Eau Claire County—(715) 839-4712  
Mahlon Peterson – Agriculture Agent  
Erin LaFaive—Horticultural Educator

Chippewa County—(715) 726-7950  
Randy Knapp – Agriculture Agent  
Jerry Clark – Crops & Soils Educator

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## Good Day!!

I'm writing this on July 22 and the Eau Claire County Fair starts tomorrow. County Fair has been a positive part of my life for over 50 years. Our Clinton County (Iowa) 4-H Club Show was and is similar to our Eau Claire County Fair in that it is a youth fair with very little commercial influence. There are four or five carnival rides, a great 4-H Food Tent as well as a tractor pull and demolition derby. I remember my first stay at the fair when I was 10 or 11. I had chores to do at the fair and knew few people outside of my local club, but by the time I graduated from 4-H I felt like I knew everyone at the fair.

The July issue featured a number of stories relating to Wisconsin Farm Technology Days in Brown County. Their show was cut short by high winds and two inches of rain. That reminds me of our show in 1992. Sure I remember the rain and the shortened show, but more importantly I remember all the great people who worked so hard to make the show a success and have gone on to show their pride in the county and it's agriculture.

Take some time to smell the roses this summer and be safe on the farm.

*Mahlon Peterson*

Mahlon Peterson  
UW-Extension Agricultural Agent

[mahlon.peterson@ces.uwex.edu](mailto:mahlon.peterson@ces.uwex.edu)

## Calendar

### August

- 1 Eau Claire County Livestock Banquet—Augusta/Bridge Creek Fire Hall
- 11 Chippewa Valley Forage Council Board of Directors Meeting – Chippewa Valley Variety Trial Field Day in Chippewa County

Please call our office for more details, registration fees, etc.

### New Eau Claire County Horticulture Educator

Erin LaFaive started her new career in the UW-Extension office on June 11. Erin was born and raised in Chippewa Falls. She obtained a Bachelors of Science degree from the University of WI-Eau Claire in Geography and a Masters of Science degree in Environment Studies from the University of WI-Madison.

Her last position was held at The Nature Conservancy in Madison where she was a Science Assistant for the Great Rivers Partnership.

Please feel free to contact Erin with any questions or suggestions on horticultural needs in the Eau Claire area.

For more Extension Information go to our website:  
[www.uwex.edu/ces/cty/eaucnaire/](http://www.uwex.edu/ces/cty/eaucnaire/)

# Something To Chew On . . .



Mahlon Peterson Ag Agent  
Eau Claire County

## Corn Rootworm Beetles and Silk Clipping

Bryan Jensen, one of IPM Specialists at UW-Madison warns that this could be one of those years when it pays to scout corn fields for silk clipping caused by Western and Northern corn rootworm beetles. Both species are attracted to pollinating fields and are capable of clipping silks prior to fertilization resulting in poor ear fill. The concern this year would be over variable planting dates. During "normal" years, the majority of our corn acreage pollinates over a relatively short period of time. Although beetles are attracted to pollinating fields their numbers are diluted over large acreage and few fields have problems. Those fields, or areas of fields, which do have problems are those which pollinate well before or after the majority of acres have pollinated. Adult rootworm beetles are mobile and will migrate to these fields in numbers potentially high enough to cause economic silk clipping.

This growing season is anything but normal. We've had variable corn planting dates, replanting dates, delayed development, etc. This situation could cause localized or even more general concerns about silk clipping. Crop advisors should begin checking for adult beetles before 70% of the plants are in the process of silking. Count the number of beetles on 10 random plants in five separate areas for a total of 50 plants. Record the number of beetles per plant and the number of plants with silks clipped to 1/4 inch or less. In addition, record the number of plants that haven't begun to silk, the number with fresh silk and the number with brown silk. Typically, it will take an average of 5-6 beetles per plant and silks being clipped within in 1/4 to 1/2 inch of the tip of the husk.

As of this writing it is unknown what the beetle populations will be or the outcome and timing of crop development. However, do keep an eye out for high risk fields.

## Midwest Strip –Tillage Expo is August 12 at Arlington

Dick Wolkowski, UW Extension Soils Specialist, invites farmers and conservation agency personnel to join tillage specialists and equipment company representatives on August 12 for the Midwest Strip-Tillage Expo 08. This year's Expo will be held at the Arlington Agricultural Research Station located about 20 miles north of Madison. The event is being organized by the College of Agricultural and Life Sciences at University of Wisconsin-Madison and University of Wisconsin Cooperative Extension.

The program will include concurrent educational presentations and field demonstrations starting at 9 am and

repeated at 1 pm. Registration begins at 8 am. After lunch a panel of veteran strip-tillers will discuss their experiences and techniques. Field demonstrations will offer farmers a chance to compare features of a variety of strip-tillage equipment and related products, including auto-guidance systems and fertilizer application equipment. Manufacturer's representatives will be on hand to answer questions.

There is no charge to attend the Expo. Lunch will be available on site for a nominal cost. Certified Crop Advisor CEU's will be available for the educational presentations.

## Giant Ragweed and Nightcrawlers

Drs. Emilie Regnier and Kent Harrison are weed scientists and Dr. Clive Edwards is an entomologist at The Ohio State University. They recently wrote this summary of research that they have conducted on giant ragweed and nightcrawlers, which explains the reason that giant ragweed is so persistent. I thought you would appreciate the opportunity to read this interesting information.

### **Introduction and Scope of Importance**

Giant ragweed has been a weed of major importance in Ohio and Indiana corn and soybean fields for over 20 years, and it seems to be increasing westward and has been ranked as one of the ten most problematic weeds of agronomic crops in Illinois, Kentucky, Missouri, Minnesota, Nebraska, Oklahoma, and Tennessee. It is among the most competitive annual weeds of corn and soybean, with a weed population of one plant per 10 square feet causing crop yield losses ranging from 50 to 75%. Since the mid-20th century, giant ragweed has migrated from its native range in North America to Europe, South America, and Asia, where it is regarded as an exotic invasive weed of agricultural fields, field borders, grasslands and natural areas. Giant ragweed produces copious pollen in late summer and early fall that is a major cause of hay fever in humans.

### **Not your "typical" weed**

Like many important agricultural weeds, giant ragweed has a summer annual life cycle that is completed between the months of March and October in Ohio. However, giant ragweed is unlike many of our major weeds in that its seeds are comparatively large, seed production per plant is relatively low, and once buried in soil, the seeds do not remain viable for long periods of time. Giant ragweed seeds serve as food sources for various organisms including insects, rodents, and birds, and almost 90% of its unburied seeds are destroyed during the first six months after the plants shed their seeds. Given these apparent

# Something To Chew On . . .



Mahlon Peterson Ag Agent  
Eau Claire County

weaknesses in its reproductive capacity, we are interested in finding out why giant ragweed is such a persistent and growing problem. Since the time between seed shed and seed burial seems to represent the weakest link in giant ragweed's life cycle, we have concentrated much of our research on investigating what happens to the seeds during this critical period.

## **Current Research: The Role of Earthworms in Giant Ragweed Spread and Survival**

The common nightcrawler (*Lumbricus terrestris*) is known throughout most of the U.S. as a popular fishing bait and beneficial inhabitant of agricultural soils. It lives in permanent, vertical burrows and feeds on plant litter, which it collects from the soil surface and stores inside its burrow. As the plant litter softens and decays inside the burrow, it becomes palatable to the earthworms. The earthworms build a 'middens' over the top of the burrow, a mound of castings and organic debris that seals the opening. Middens are usually easily distinguished from the surrounding soil and indicate the presence of nightcrawlers.

Nightcrawlers are widely distributed in agricultural soils of the central and eastern U.S., where it improves soil physical and chemical properties for crop growth. It is not native to the United States and was probably introduced from Europe with the settlers. Nightcrawler populations increase in the absence of tillage and can be as high as 15 earthworms per square foot in some no-tillage fields.

We have found that nightcrawlers actively gather and store giant ragweed seeds in its burrow by grasping the seed with its mouthparts and burying it inside its burrow or middens. In field experiments in Ohio, over two-thirds of the giant ragweed seedlings that emerged in spring came directly from nightcrawler burrows. These findings suggest that the earthworm-giant ragweed association is an important factor in the survival and spread of giant ragweed. This seed foraging behavior by nightcrawlers and its effect on giant ragweed seedling distribution have been confirmed in controlled experiments and surveys of giant ragweed populations. Nightcrawlers behave as a seed dispersal agent for giant ragweed and this behavior may protect the seeds from predation by rodents, insects, and birds. The earthworms do not forage exclusively for giant ragweed seeds, but also collect and store other seeds in the same size range.

## A summary of research results thus far:

- In plots excluding vertebrate seed predators, nightcrawlers began collecting and burying giant ragweed seeds immediately after their dispersal thus shortening the exposure time of seeds on the soil surface to as little as 1 or 2 days. By 20 days after dispersal, the earthworms had collected and buried 95% of giant ragweed seed in their burrows and middens.

- Earthworms buried seeds from 0.2 to 8 inches deep. Most of the seeds were buried in the upper 4 inches of the soil, which represents the depth limit from which giant ragweed seedlings can emerge, but some seeds were buried below 4 inches, where giant ragweed seeds tend to remain dormant.

Earthworms buried over two-thirds of giant ragweed seeds dispersed naturally by a giant ragweed stand. An earthworm burrow contained an average of 127 seeds, and earthworms buried an estimated total of about 500 seeds per square foot.

Giant ragweed seedlings were aggregated in nightcrawler burrows in no-tillage corn and soybean fields in Ohio, Indiana, and Illinois, indicating that when nightcrawler and giant ragweed occur together, the earthworm is likely to bury giant ragweed seeds and thereby influence seed survival and seedling distribution.

- Nightcrawlers collected and buried seeds of 10 other weed and crop species by the same behavior, but exhibited preferences among them. Giant ragweed, bur cucumber, and sunflower seeds were preferred over common cocklebur and tall morningglory seeds.

## **Summary and Conclusions**

Our research has shown that nightcrawlers forage actively for giant ragweed seeds, that it is capable of burying the majority of the seed produced by a stand of giant ragweed, and that it distributes seeds over a range of depths thus influencing seed dormancy and seedling emergence. It also suggests that seed burial by nightcrawlers protects seeds from predation and exerts a strong influence over giant ragweed populations in subsequent years. With the introduction of nightcrawlers in the U.S., it appears that giant ragweed has acquired a new mechanism of spreading and survival, which may help explain its persistence and expansion as a major weed problem in the U.S.

# Horticulture News

Erin LaFaive ~ Eau Claire County Horticulture Educator



## The Friendly Colorado Potato Beetle

Every year the Colorado potato beetle loves to visit our gardens. Nice of them to join us, isn't it? Not really. This garden pest of potatoes and eggplant can be destructive to gardens if left unchecked. They can completely defoliate plants causing serious loss or death of the plant.

The Colorado potato adult beetles have a hard rounded shell that is bright yellow with black stripes running the length of their backs and black spots behind their heads. The beetles overwinter as adults in Wisconsin. During the fall they find a protected place such as near trees or in grassy edges surrounding gardens and burrows 2-8 inches deep in the soil. In the spring, the adults emerge at about the time early season potatoes are sending up shoots.

The adults and larvae are leaf feeders usually starting on younger leaves and working their way up to older leaves. Potato plants can tolerate some defoliation before the yield becomes affected. Flowering plants can tolerate 5-10% defoliation; after flowering, plants can tolerate up to 30%.

Females lay up to 500 bright yellow-orange eggs in clusters of 15-25 on the lower leaf resulting in the death of the female. The larvae hatch 4-9 days later and begin feeding. At this stage the larvae are not damaging to the plant. The larvae will molt or shed four times before becoming a beetle. Each stage is called an instar. First instar: larvae are blackish-brown and tiny and leaf damage from feeding is minimal. Second instar: brown-red larval coloring and feeding is still minimal and usually doesn't require treatment at this stage. Third and fourth instar: reddish-brown with black heads and legs and black spots along the sides of their bodies. The feeding habits of these two stages will cause serious crop damage. This process takes 2-3 weeks after which they return to the soil to pupate. The beetles emerge in 10-14 days in mid-July as adult beetles.

How do I get rid of them?

If you prefer not to use pesticides try these methods. Check for the beetles in May after potato plants have emerged and keep checking until the end of July. Look under the leaf for the yellow-orange eggs and brush them off. Hand picking can be effective, but be sure to wash your hands afterwards as the Colorado potato beetle has a chemical that can burn and blister sensitive skin. Planting crops other than potato and eggplants for a year will reduce the population. Row covers and plastic-lined trenches help to prevent adult beetles from finding plants and laying eggs.

Pesticides can be used on these beetles. Races of the beetle exist that are resistant to every class of insecticide currently registered for control. Sevin (carbaryl) is still effective with most Colorado potato beetles in Wisconsin, however many Colorado potato beetles are resistant to the insecticide. The best time to use Sevin or pyrethroid insecticides is when larvae are at the second and third instar states. Treatments at the fourth instar stage will be made too late to prevent yield loss. Eggs and pupae are not susceptible to chemical control.

A bacteria called *Bacillus thuringiensis* var. *tenebrionis* (Btt) is effective against the larvae. This product is harmless to people, animals, and plants, but cause a lethal disease in the beetle larvae. It is only effective against the first and second instar stage and must be applied as an early spray against small larvae. Btt must be applied every 1-2 days and should be applied weekly for 2-3 applications if used alone.

Good luck with your visits from the Colorado potato beetle. Hopefully they only stay a short time!

**Jerry Jargon**  
 Jerry Clark  
 Chippewa County Soil & Crops Educator



## LATE SUMMER PLANTING LEGUMES TO PRODUCE NITROGEN CREDITS FOR NEXT YEAR

The high price of nitrogen fertilizer has oats harvest as a green manure to provide some nitrogen credits for next year's crop. This practice can provide some nitrogen and organic matter as well as increase ground cover to reduce erosion from fields. However, it may not be cost effective.

The following provides some data to help growers decide about options for producing nitrogen credits from late summer planted legumes.

### How much nitrogen credits can we expect?

Table 1 below shows the green manure nitrogen credits for several legumes. The nitrogen credit depends on the amount of crop growth and when the legume was planted. Nitrogen credits are 50 lb N/a lower on sandy, coarse-textured soils. Legumes other than those listed below would likely produce a range of N credits similar to those in Table 1; however, not enough data exists on N

Crop	Growth at the time of killing	
	< 6"	> 6"
lb N/a to credit		
Alfalfa	40	60-100
Clover, Red	40	50-80
Clover, Sweet	40	80-120
Vetch	40	40-90

Considering the seed cost (Table 2) and seeding cost (\$15 to \$25/acre), the establishment cost of a legume (other than alsike) will be \$32 to \$69/acre. At nitrogen costs of nearly \$1.00/lb, the legume would have to produce 32 to 69 lbs of nitrogen to break even with fertilizer cost. The economics of planting a late summer seeded legume for nitrogen credits is questionable for most situations because there is no guarantee that at least a 40 lb N/a credit can be obtained.

Legume	Seed Cost per lb	Seeding Rate (lb/acre)	Seed Cost/Acre
Red Clover	\$2.70	10	\$27.00
Berseem Clover	\$2.10	10	\$21.00
Hairy Vetch	\$2.24	20	\$44.80
Alsike Clover	\$1.40	3	\$4.20
Alfalfa	\$5.00	12	\$60.00

## JERRY'S JARGON

There are two situations where late summer seeded legumes may be beneficial. One is where a cover crop is needed to reduce erosion over winter. Any cover crop planted will have some cost so, for example, if rye is generally planted as a cover crop, the seed cost is \$15 to \$20/bu for rye this year. A legume could be planted for the ground cover at approximately the same cost, and then the nitrogen fixed is a bonus. A better possibility may be to seed oats at 3/4 to 1 bu/a oats along with the clover to provide rapid ground cover and still have some nitrogen fixing ability from the clover.

August seeding of legumes for nitrogen credits may also be valuable in organic systems where commercial fertilizer is not an option.

**How to estimate value of legume green manure.** Many who will plant a legume this fall must estimate the nitrogen credits next spring from the growth that occurred this fall. As shown above, fall growth (and nitrogen fixation) is extremely variable. A simple method of getting an estimate of the nitrogen credits is to determine the yield of forage at frost this fall. Nitrogen credits come from both top growth and root growth. For perennials, one can assume that half growth is above ground and half below. For annuals, like berseem, hairy vetch and pea, one can assume that 60 to 70% of the total growth is above ground.

Thus, for perennials, determine the above ground growth and multiply by 2 to determine total biomass; then assume 3% nitrogen to determine nitrogen credits. For example, if a ton of forage is produced: assume 2 tons or 4,000 lbs total biomass times 3% = 120 lb nitrogen/acre.

For annual legumes, determine the above ground growth and multiply by 1.4 to determine total biomass; then assume 3% nitrogen to determine nitrogen credits. For example, if a ton of forage is produced, assume 1.4 tons or 2,800 lbs total biomass times 3% = 84 lb nitrogen/acre.

Actual nitrogen credits can be verified if the remainder of the N requirement for corn will be sidedressed next spring; then the pre-sidedress nitrate soil test (PSNT) can be used to verify N credits instead of using values from Table 1.

### UNIVERSITY OF WISCONSIN — EXTENSION CHIPPEWA VALLEY VARIETY TRIAL AND AGRONOMY FIELD DAY

Chippewa County Farm Plots  
Chippewa Falls, WI  
Wed., September 3, 2008

10:00 a.m. — 12:30 p.m.  
— Lunch to Follow —



— Luncheon Sponsors —  
**Agri-Tech Services**  
**Crossroads Ag LLC**  
**Northwestern Bank**

Presenters and topics will include:

- **Dr. Joe Lauer**  
UW-Extension Corn Specialist  
*Mid to Late Season Practices to Enhance Corn Yield*
- **Dr. Chris Boerboom**  
UW-Extension Weed Scientist  
*Timing of Weed Control in Corn and Soybeans*
- **Dr. Shawn Conley**  
UW Soybean Specialist  
*Growing High Yielding Beans*
- **Dr. Dan Undersander**  
UW-Extension Forage Specialist  
*Alfalfa Management for High Yields*

Whole plant corn moisture testing will be available; bring 4 stalks of corn per variety, cut at harvest height.

There is no cost to attend; 2.5 CCA credits in Crop Management are available. The Chippewa County Plots are located at the intersection of Co. Hwy. I and Seymour Cray Blvd. For more information, contact the Chippewa County UW-Extension Office, (715) 726-7950.

# *Farm & Field Newsletter*

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Eau Claire County UW-Extension Office  
227 1st Street W  
Altoona WI 54720

