Wisconsin Pest Bulletin

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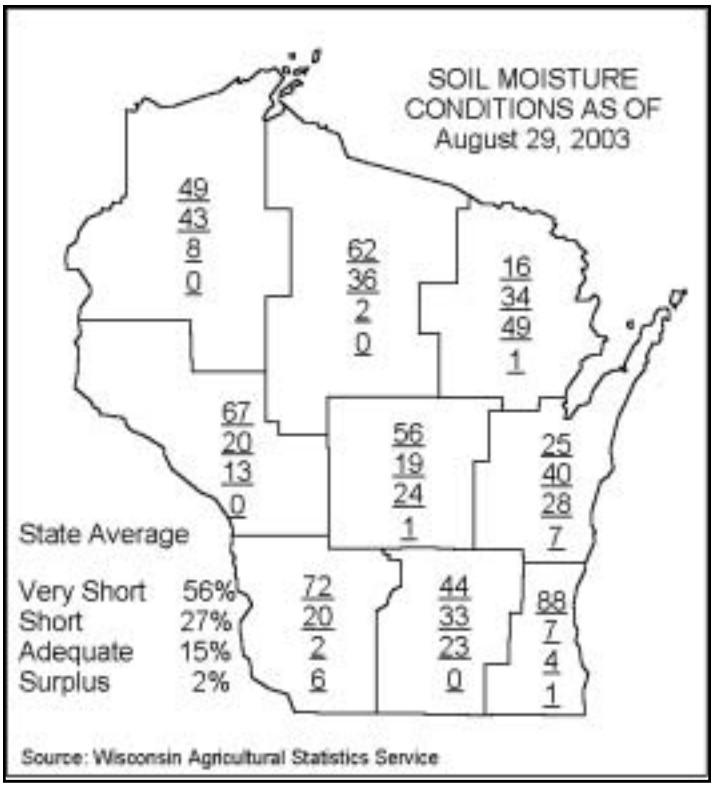

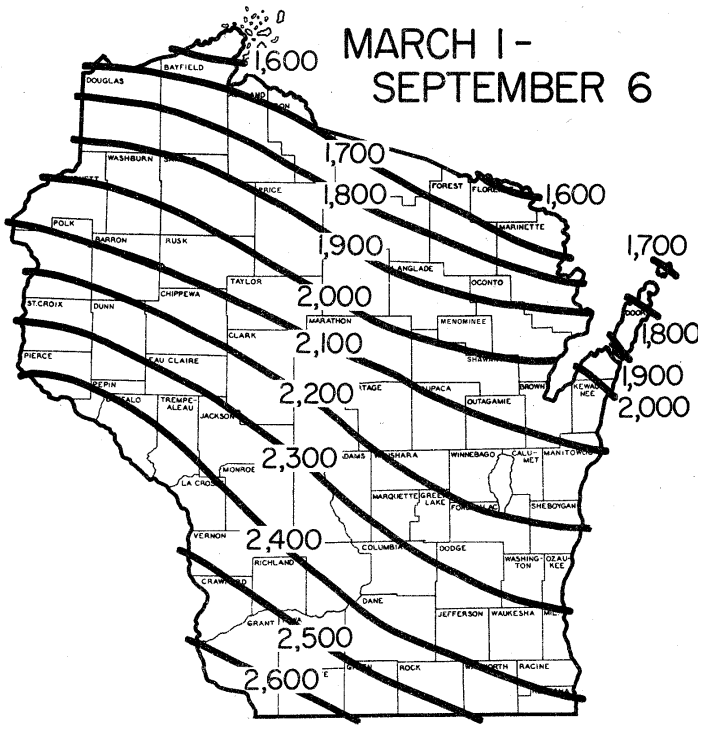

Historical Average Growing Degree-Days Accumulated Since March 1. (Wisconsin Agricultural Statistics Service)

Weather and Pests

The first week of September brought warm sunny days, slightly cooler evening temperatures, and continued dry conditions for much of the state. Some scattered showers have occurred in the last week or two, but at this point in the season, these showers are simply too little too late. Drought conditions have left farmers with few options

Growing degree days from March 1 through Septmber 4 were:

Site		2002	Normal	Base	Base
	GDD*	GDD	GDD	48	40
SOUTHWEST					
Dubuque, IA	2412	2542	2602	2381	3867
Lone Rock	2386	2410	2450	2314	3831
SOUTHCENTRAL					
Beloit	2343	2555	2459	2347	3803
Madison	2320	2394	2368	2324	3765
Sullivan	2233	2473	2331	2249	3665
Juneau	2231	2392	2229	2254	3659
SOUTHEAST					
Waukesha	2145	2434	2295	2176	3562
Hartford	2157	2368	2233	2201	3569
Racine	2066	2388	2335	2122	3459
Milwaukee	2054	2322	2306	2101	3438
EAST CENTRAL					
Appleton	2116	2225	2076	2201	3487
Green Bay	1909	2066	2014	2043	3238
CENTRAL					
Big Flats	2258	2296	2218	2244	3658
Hancock	2232	2285	2160	2232	3629
Port Edwards	2128	2174	2226	2174	3491
WEST CENTRAL					
LaCrosse	2417	2525	2389	2320	3865
Eau Claire	2334	2362	2215	2276	3762
NORTHWEST					
Cumberland	2115	2101	2066	2102	3447
Bayfield	1630	1615	1490	1675	2784
NORTH CENTRAL					
Wausau	1958	2038	2060	2029	3266
Medford	1883	1926	1976	1979	3175
NORTHEAST					
Crivitz	1857	1951	1897	1978	3151
Crandon	1760	1859	1786	1843	3002

** GDD (Growing Degree Days) are degree-days above modified base 50º F, with no low temperature below 50º F or above 86º F used in calculation.*

besides chopping soybeans and corn early for silage. Consequently, pest survey staff are frantically trying to complete the annual European corn borer survey while there is still corn standing. For many farmers, 2003 was the driest year in recent memory and some are drawing comparisons between this season and the drought of 1988. Significant yield losses are expected in nearly all parts of the state.

This is the last weekly Wisconsin Pest Bulletin of the season. Two more issues will be published: one on October 3, and one on November 28. We want to extend a special thanks to all of our cooperators for their efforts this season, in particular the apple insect and black light trappers, County Extension Agents, UW Research and Extension Specialists, DNR Forest Health Specialists, UW Experimental Stations, crop advisors and consultants, nursery growers, and numerous other individuals. Prior to the start of this growing season staff made the decision to change the name of this publication from the Cooperative Pest Survey Bulletin to the Wisconsin Pest Bulletin to better reflect our purpose at a time when key words make all the difference in accessing publications online. In making this change we dropped the Cooperative from the title, but the cooperative reporting and support that makes this publication what it is has not diminished, and in many ways is stronger than it has ever been. Thanks again, and we look forward to your continued cooperation next season!

Alerts

Red slug — A Sheboygan Co. homeowner has captured a large red slug, identified by Milwaukee Public Musuem staff as a species of *Arion*, probably *Arion rufus*, the Red Slug or Chocolate Arion. This is believed to be the first report of this pest in Wisconsin. The red slug is a horticultural pest in Europe, and has been introduced into British Columbia. The slug is reported to grow to five inches or more. DATCP and USDA staff will be conducting follow-up surveys.

Corn

European corn borer – As day length shortens and temperatures drop in the weeks ahead, we can expect European corn borer larvae to enter diapause (dormancy) and prepare to overwinter. European corn borers pass the winter as mature fifth instar larvae in corn stalks and stems of other hosts, and will not become active again until temperatures exceed 50°F next spring. Seasonal changes not only affect corn borer, they also signal to our staff that its time to begin the annual fall abundance survey, which got underway in the southern portion of the state this week. It is still far too early to forecast the corn borer situation throughout the state, but in the southeast and parts of the south central district averages are down considerably from last year. Our early efforts found mostly low-level infestations in these regions. Kenosha, Racine, Walworth and Waukesha Co. fields averaged 0.17 larvae/plant. The south central district has not yet been surveyed completely, but Dane Co. fields averaged 0.37 borer/plant, comparing to 1.09 borer/plant in 2002. A total of nine fields were surveyed in Rock Co., where the average number of borers per plant dropped from 1.17 in 2002 to 0.18 this season. A complete report and summary maps will be available in the November 28 issue of the Wisconsin Pest Bulletin. Anyone wishing to receive paper or electronic copies of the 2003 summary maps should contact Krista Lambrecht at (608) 224-4594 or krista.lambrecht@datcp.state.wi.us.

Corn rootworm – While the European corn borer populations appear to have dropped in areas of the south central and southeast districts, the outlook for corn rootworm is not as encouraging. Adults were noticeably active this week, and fields averaging three to four beetles per plant were quite common. A small percentage of the fields surveyed had populations in excess of six beetles per plant. Recent warm, dry conditions have favored adult survival, extending the period during which mating and egg laying can occur. Depending on temperatures, the average female corn rootworm lifespan ranges from 16 to 84 days, and females are capable of laying about one thousand eggs in a two week period. Thus, some portions of the southeast corner of the state could potentially face heavy larval populations next spring. Then again, the southeast has been subject to the drought conditions plaguing much of the state, and soils there are extremely dry. Corn rootwoms tend to lay fewer eggs in dry soil, and survival rates of eggs over the winter tend to be lower in drier soil. Snow cover this winter will also have an impact on survival rates, as will winter temperatures. There are numerous variables that will affect corn rootworm population size from one season to the next, making it difficult to predict whether this season's corn rootworm populations will likely to lead to economic injury to corn the next season. Intense and extended periods of adult activity suggests that heavy egg laying continues to occur, but whether these eggs will survive the dry fall conditions and potentially severe winter conditions is impossible to determine now.

Corn earworm – Growers can anticipate continued activity in the coming weeks. Moth catches in pheromone traps are down substantially from last week, but this season's corn earworm flight period is not over just yet. During this week's survey, newly-hatched to full grown 5th instar larvae were commonly observed feeding in the tips of corn ears in Dane and Walworth

Cos.

Corn leaf aphid – Heavy colonies are still present on individual plants in the south central and southeast districts. Because corn growing under drought conditions is generally more affected by pest pressure, continuous corn leaf aphid pressure certainly isn't helping the situation.

Soybeans

Soybean aphid – One of the most noteworthy surprises of 2003 was extremely high soybean aphid densities across much of the state. Based on last year's activity and spring forecasts, it appeared that the **bean leaf beetle** might pose the greatest threat to soybean production this season;. However, little first generation beetle activity was noted as soybean aphid densities began to escalate.

Following their conspicuous absence in 2002, soybean aphids reappeared in June and quickly grew to the highest densities since first being detected in Wisconsin in 2000. The first aphids of the season were found during the week of June 13 in Dane and Rock Cos.

Populations grew steadily and peak densities were observed between July 21 and August 19. The highest peak densities were observed in the south central and southeast districts and the lowest in the northeast. Densities across the state have been lower in the last few weeks, and we need not be too concerned with soybean aphids for the rest of this season.

More mummies were found this year in fields across the state, an encouraging sign that the parasitoid populations may be catching up with the expanding aphid presence in the Midwest. There are now at least three species of parasitic wasps affecting Wisconsin's soybean aphid population. Further, another season of extremely high aphid densities affords us an opportunity to expand our knowledge of the biology and behavior of this new pest. Each season, UW-Madison researchers are learning more and more about the soybean aphid. This season's unprecedented aphid densities have prompted researchers to review and refine current recommendations. In recent issues of the Wisconsin Crop Manager (http:ipcm.wisc.edu/wcm/pdfs/2003), Field Crop Entomologist Eileen Cullen outlines the options that growers should consider when making soybean aphid treatment decisions. She explains current soybean aphid threshold guidelines and details the characteristics of fields that may or may not benefit from treatment. Although it's probably too late in the season for this information to be of use, growers are encouraged to print out a copy for next year.

Potatoes

The foliar disease situation hasn't changed much in the past two weeks. There is still no **late blight** reported anywhere in Wisconsin. There is, however, late blight being reported in some other midwestern states and in eastern states where above normal rainfall continues to fall. It's simply too dry in Wisconsin for the disease to become established. With the 7-day forecast for no rainfall in the state, the risk for late blight appearance this season continues to be very low. Not having late blight this season is a welcome relief, but it would be desirable to have a timely rain shower.

Early blight has been tough to control from mid season until the present week. We've observed heavy early blight pressure in our Hancock trials. Some of the treatments containing strobilurin fungicide chemistries provided good control, but not the expected excellent performance levels seen only a few short seasons ago. The isolates being collected from our experimental trials are less sensitive to strobilurin chemistry than isolates collected back in 1998 prior to widespread strobilurin use. Walt Stevenson of UW-Madison is conducting a statewide survey of early blight isolates to determine the distribution of isolates with reduced sensitivity to strobilurin chemistry. Analysis of the isolates takes time, but the information should be ready for the winter educational meetings in January.

Other problems of note on potatoes include a high incidence of **common scab** in a few fields. The problems are mostly confined to Norkotah Russet, but there are some losses observed on red potatoes. Moisture stress at the time of tuberization is likely related to symptom development as is the trend to field liming to raise the pH. Many production fields now test at close to a pH 6.5 or even higher. Keeping the soil pH at a 5.2 to 5.8 pH range coupled with careful water management during early tuberization helps in the management of common scab. Where pockets of scab are detected in production fields, I suggest that growers test the soil pH in individual areas rather than bulk samples from these areas with samples from the rest of the field. We've also received the first samples of **powdery scab** from commercial potato fields in Wisconsin this summer. The first samples to reach us included a root sample with small galls (1/4 inch in diameter) on the roots. The WI DATCP survey crew has now detected powdery scab in additional fields and will initiate a more intensive survey this fall. Powdery scab can be an important soilborne disease leading to open scab blemishes on the periderm and loss of tuber quality. The powdery scab pathogen is also a vector of the **potato mop-top virus** although this virus has never been detected in WI tubers. You will likely see additional information on powdery scab as the DATCP survey proceeds. (UW-Madison in part)

Current P-Day and Severity Value Accumulations for 2003 (http://www.plantpath.wisc.edu/wivegdis/index.htm)

Location	Calculation Date:	P-Day Total	Severity Val.Total
Antigo emerging June 4	9/01	660	49
Antigo emerging June 14	9/01	589	31
Antigo emerging June 24	9/01	518	31
Grand Marsh emerging 5/19	9/01	745	69
Grand Marsh emerging 5/24	9/01	721	69
Grand Marsh emerging 5/28	9/01	699	69
Hancock emerging 5/13	9/01	798	44
Hancock emerging 5/17	9/01	774	44
Hancock emerging 5/25	9/01	728	42
Plover emerging 5/13	9/01	808	28
Plover emerging 5/24	9/01	748	28
Plover emerging 6/3	9/01	686	28
Lake Mills emerging 6/10	8/31	629	63
Lake Mills emerging 6/12	8/31	612	63
Lake Mills emerging 6/14	8/31	596	61
Lake Mills emerging 6/16	8/31	580	61
Lake Mills emerging 6/21	8/31	548	61

Vegetables

Snap Beans--Virus woes continue to plague growers and processors statewide. Yields are down, but at this point pod discoloration and disfigurement problems seem to be minor compared with previous years. The majority of the pod discoloration complaints were appearing during the hottest weather two weeks ago. With cooler weather now occurring statewide, pod quality complaints are minimal. A statewide survey conducted by Tom German (UW Entomology) is finding predominantly **cucumber mosaic virus (CMV)** in snap bean and weed samples. It's interesting to note that in fields in NE Wisconsin visited two weeks ago where plants exhibited severe mosaic and blistering of young leaves, the same plants are now growing rapidly and the newest leaves exhibit only a mild mosaic. There is a reversal of symptom severity in just a two week period and the prospects are good for a respectable yield. This has been a tough year because of the **soybean aphid**, the probable vector of virus pathogens on snap beans, and widespread virus infection of the snap bean crop. It's interesting to note that there are observable differences in the field reaction of snap bean cultivars and breeding lines exposed to natural inoculation by aphids in our test locations at the West Madison Experiment Station and north of Manitowoc. Anyone wishing to see our West Madison trials should attend the Midwest Food Processor Field Day at the West Madison Station for a 2 pm tour.

Pumpkins--Powdery mildew is the key disease currently affecting pumpkins and other cucurbits. Affected foliage is covered with a white coating and within a few days, this infected foliage turns brown. Control measures are likely too late if infection has progressed much beyond a few white patches on the upper leaves. The disease spreads rapidly and infected foliage dies rapidly. We continue to evaluate pumpkin cultivars and breeding lines for their field reaction to this pathogen in trials at Hancock. There are several lines with excellent levels of field resistance to powdery mildew.

Forest, Shade Trees, Ornamentals and Turf

Gypsy moth- gypsy moth egg masses have been found surrounding nursery and Christmas tree fields in many of the fields in quarantined counties. If you are moving nursery stock or Christmas trees from a quarantined county to another state that is south or west of Wisconsin, your stock must be inspected and declared free from gypsy moth before you ship it. Please contact Thad Kohlenberg, 608-224-4572, for nursery stock, or Bria Radtke, 608-224-4576, for Christmas trees.

Pales weevil- Feeding injury from this insect was found in white and Scotch pine Christmas trees this past week in Waushara Co. The pales weevil feeds on the bark of shoots and branches, chewing small patches in the bark. Oozing pitch or white crystallized resin may be present, and older feeding scars may callus over. Pine stumps provide the egg-laying site that sustains the population. Adults overwinter in the soil near plantations. Females emerge in early spring and lay their eggs in the bark of roots of new stumps. Pales weevil larvae feed on the roots during the summer, pupate, and adults emerge in early fall. Adults feed throughout the summer, during warm nights (>50 F), and spend the days in leaf litter.

If feeding damage causes girdled or flagging branches or seedling death, consider monitoring. Monitor trees in June. Inspect 50 trees for feeding damage. If seedlings show injury, or larger trees have 5 or more flagged tips, consider treating. Remove stumps by early spring, or leave one whorl of live branches at the base of the stump to keep it alive to discourage weevil egg laying. Registered pesticides may be applied to the stumps and surrounding soil in spring, or to live trees when newly hatched adults are feeding between mid-August to mid-September. (Christmas Tree Pest Manual, Michigan Extension Bulletin E-2676).

Broom rust of fir- Witches' brooms were found on balsam fir Christmas trees in several counties this week. Witches' brooms on fir are caused by the fungal pathogen *Melampsorella caryophyllacearum*, which alternates between firs and chickweed. Fir buds are infected in spring by spores blowing from chickweed, causing little damage the first year. The following spring, infected buds produce shoots that are stunted, thick and short. Needles on these shoots are also shortened, thick, and pale green initially, fading to yellow by mid-summer and dropping in fall. Orange

pustules on the foliage produce airborne spores which infect chickweed, where the fungus overwinters. Several years of infections creates a "witches' broom" growth pattern.

Currently there aren't any fungicides registered for broom rust; however, this pest rarely causes economic damage. Inspect trees in July and August. Remove brooms from infected trees. Once the needle and branch tissue has dried out, the fungus is no longer viable. This year we have found small, green as-yet unidentified aphids in high numbers on several brooms. These pests exude a wooly gray material that makes the broom look dusty.

State/Federal Programs

Gypsy moth trapping program- Trappers are continuing to take traps down statewide. As of 9/3/03, trappers have taken down 7,835 traps (30%), and have caught 379,092 male gypsy moths. Trap takedown will continue for about four more weeks. Sixteen counties have been completed and they are: Calumet (4,913), Grant (521), Green Lake (4,120), Jefferson (7,478), Kenosha (3,167), Kewaunee (12,872), LaCrosse (97), Manitowoc (19,811), Marquette (2,018), Ozaukee (5,879), Racine (5,366), Shawano (28,489), Sheboygan (17,276), Washington (15,970), Waukesha (18,885), and Winnebago (4,986). These totals do not include cooperator data.

For more information on gypsy moth, please call our hotline at 1-800-642-MOTH.

Calendar of Events

Several alert readers pointed out errors in last week's calendar listings. Please double-check dates! Thank you to our sharp-eyed readers!

Bugs! IMAX® movie
September-December 18, 2003
Milwaukee Public Museum, Milwaukee, WI
Call (414) 319-4629
Also visit the bug exhibit called "Bugs Alive! Insects and Their Relatives," featuring 13 species of live arthropods.
Call (414) 278-2728, or visit: *http://www.mpm.edu*

Taking the Pulse of Your Woods-Session 2
Sept. 13, 2003
Seno Woodland Education Center, Burlington, WI
Contact Kendra Johncock at 262/743-1694 or *kendra@elknet.net*

Wisconsin Woodlands Owner Association 2003 Annual Meeting
Sept. 18-21, 2003
Telemark Lodge in Cable, WI
Contact: 715/346-4798 or *nbozek@uwsp.edu*

XII World Forestry Congress: A Focus on Forests
Sept. 21-28, 2003
Quebec City, Canada
http://www.wfc2003.org

North Central Forest Pest Workshop
Sept. 22-25, 2003
Cloquet Forestry Center, near Duluth, MN
Contact Alan Jones, Minnesota DNR
alan.jones@dnr.state.mn.us

Natural Areas Conference "Defining a Natural Areas Land Ethic"
Sept. 24-27, 2003
Monona Terrace Convention Center, Madison, WI
Contact Thomas Meyer, DNR, Box 7921, Madison, WI 53707
(608) 266-0394, e-mail: thomas.meyer@dnr.state.wi.us
or visit: *http://www.naturalarea.org*

2003 Plants Out Of Place Conference
Sept. 27, 2003
Madison, WI
Invasive Plants Association of Wisconsin (IPAW)
Kelly Kearns, DNR Endangered Resources Program, (608) 267-5066k, *kearns@dnr.state.wi.us*

Invasive Plant Symposium 2003
Sept. 27, 2003
Madison, WI
http://www.se-eppc.org/sympann.pdf

Invasive Alien Species and the International Plant Protection Convention Conference
Sept. 22-26, 2003
Braunschweig, Germany
http://www.ippc.int/IPP/En/Archive/IAS2003/IAS-WORKSHOP-Home.htm

Wisconsin Arborist Association Fall Conference,
Waukesha, WI, Tues., Oct. 28, 2003
Pewaukee, WI
Contact:Brian Cassity 262-886-5224

Wisconsin Turfgrass and Greenscape Expo,
Middelton, WI, Mon.-Wed.,
Jan. 5-7, 2004

Minnesota Nursery and Landscape Green Expo,
Minneapolis, MN,
Wed.-Fri., Jan. 7-9

2003 Wisconsin Fresh Fruit and Vegetable Conference
Jan. 6-8, 2004
Olympia Resort & Conference Center, Oconomowoc WI
Program available at
http://www.wiberries.org/program.htm

Wisconsin Nursery Association Winter Workshop
Jan. 8-9, 2004
Brookfield, WI
Contact: WNA/WLF office at 414-529-4705

Wisconsin Turfgrass & Greenscape Expo
Jan. 8-9, 2004
Madison, WI
Contact: Audra Anderson at 608-845-6536

Mid-Am Horticultural Trade Show,
Chicago, IL:
Wed.-Fri., Jan. 14-16

Gateway Technical College Wintergreen Conference:
Fri., Jan. 23

School for Beginning Market Gardeners
Jan. 24-26, 2004
Contact: John Hendrickson at 608-265-3704

Wisconsin Nursery Association Winter Workshop,
Oconomowoc, WI: Wed., Jan. 28

Wisconsin Arborist Association & DNR Urban Forestry Convention
Feb. 1-3, 2004
Green Bay, WI
Contact: Brian Cassity 262-886-5224

Wisconsin Landscape Federation Annual Conference,
Kohler, WI:
Sun.-Tues., Feb. 22-24

Apple Insect Trapping Results

County City	Date	STLM	RBLR	CM	OBLR	AM red ball	AM sticky
Richland Co.							
Hill Point	8/14-9/2	224	26	0	7	1.5	0
Pierce Co.							
Beldenville	8/24-9/4	100's	0	0	0	0	0
Waukesha Co.							
Waukesha	8/25-8/31			18			
Marinette Co.							
Wausaukee	8/28-9/4	44	0	0	0	1	0
Racine Co.							
Rochester	8/29-9/5	34	1	0.5	1	0	0

STLM--Spotted tentiform leaf miner; RBLR--Redbanded leaf roller;CM--Codling moth;OBLR--Oblique banded leaf roller
AM--Apple maggot

Black Light Trapping Results

through September 4

Trap Site	European corn borer	Armyworm	Black Cutworm	Variegated Cutworm	Spotted Cutworm	Celery Looper	Corn Earworm	Dingy Cutworm	Corn Earwom Pheromone
South Central									
Reedsburg	70								
West Central									
Coon Valley									2
Central									
Marshfield	1	0	0	0	65	1	0		
East Central									
Manitowoc	8	7	1					13	
Northwest									
Chippewa Falls									17

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http://www.soils.wisc.edu/wimnext/tree/arbor.html

Web Site of the Week

All About Drought
http://www.nws.noaa.gov/om/drought.htm

The National Oceanic and Atmospheric Administration's drought portal site. Definitions, impacts, links to everything except rainmaking sites.

Quote of the Week

What I say is that, if a fellow really likes potatoes, he must be a pretty decent sort of fellow.

A.A. Milne (1882 - 1956)