

# Integrated Pest & Crop Management

## Plan Now to Attend the MU Pest Management Field Day and Special “Walking Tour” of Resistant Waterhemp Research on July 16th

by Kevin Bradley

The annual Pest Management Field Day will be held this July 16th at the Bradford Research Center near Columbia, Missouri. This field day will include a variety of pest management topics that are of interest to agricultural industry representatives, agrichemical dealers, Extension specialists, and producers throughout Missouri and surrounding states.

Registration will begin at 8:00 a.m. and will include guided wagon tours with stops that feature presentation of results and talks by university weed scientists, entomologists, plant pathologists, and agronomists. There will be a \$10 registration fee collected at the time of check-in to cover costs associated with lunch and refreshments. The first tours will depart at approximately 8:45 a.m.

Some of the weed management research topics and trials that will be discussed at this year’s field day include: considerations for future herbicide-resistant crop offerings like dicamba-resistant, HPPD-resistant, and 2,4-D resistant soybeans; effective herbicide programs for killing cover crops; the effect of cover crops on winter and summer annual weed emergence; specific results and recommendations pertaining to the control of glyphosate-resistant horseweed and waterhemp; a summary of results related to drift from growth regulator herbicides on soybean; and as usual periodic stops along the guided tours to preview new herbicides and herbicide programs that will be available in 2015 and beyond.

Dr. Laura Sweets, state extension plant pathologist, will also provide an extensive update on diseases that

have already appeared in 2014 and what to look out for the rest of the season. Dr. Wayne Bailey, extension entomologist, will discuss some of the most significant and emerging insect problems in corn and soybean.

The field day at the Bradford Research Center will conclude with lunch at noon, and this year Dr. Kevin Bradley and the Mizzou Weed Science team will be hosting an additional “walking tour” of research plots at their resistant waterhemp site located approximately 9 miles south of Moberly, Missouri. This informal walking tour and discussion will begin at 2:00 p.m. at the Moberly field site, and attendees will receive maps with directions to the site at the Bradford Research Center. This walking tour will showcase a variety of herbicide treatments, cultural practices, and cropping systems that can be effective on Missouri’s most troublesome weed species, resistant waterhemp. Attendees will also be able to view the effectiveness of future traits and technologies, such as Dow’s Enlist and Monsanto’s Xtend soybean systems.

For certified crop advisors, 2 CEU credits for the field day are pending. If you plan on attending the field day, you must pre-register before July 9th by calling 573-884-7945 or by sending an e-mail to [chismt@missouri.edu](mailto:chismt@missouri.edu). Please specify whether you plan to attend both events, or just the morning field day only. The Bradford Research and Extension Center is located 7 miles east of Columbia, off of highway WW. For more complete directions call 573-884-7945 or visit <http://aes.missouri.edu/bradford/index.stm>.



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# Agriculture Technology Fair

by William J. Wiebold

The Agriculture Technology Fair will be held at the Bradford Research Center on July 17, 2014. This Fair will provide visitors with a peek into the future of agriculture. Four cutting-edge technologies will be discussed and demonstrated. For each technology, a short discussion will be held inside the Technology Center building. Then, the participants will convene outdoors for demonstrations and additional discussion.

Brent Myers, MU corn extension specialist, will discuss how planting rate prescriptions for planters can be developed. Many new planters are capable of changing planting rates on-the-go. Brent will explain what field characteristics are needed to develop appropriate planting rate prescriptions. Representatives from several implement manufacturers will demonstrate how planting rate maps are entered into their planters.

Rob Kallenbach, MU forage specialist, will discuss the use of grazing wedges to guide movement of dairy and beef herds to the next pasture or grazing paddock. Rob has two web sites (one for beef and one for dairy) to help producers monitor pastures. Forage heights, which estimate forage growth, quantity, and quality, are required information for the function of the grazing wedge calculators. Most producers use grazing sticks or rising plate meters to measure forage heights. Rob will demonstrate an ultrasound sensor on an all-terrain vehicle that collects data for the wedge. The sensor accurately measures forage height 20 times each second. Data from the sensor can be entered directly into the grazing web. This on-the-go sensor is much easier to use than other methods of measuring forages.

Peter Scharf, MU nutrient management specialist, is a leader in using sensors to estimate nitrogen fertilizer needs for corn and wheat. Peter will discuss sensors that read the greenness of plant leaves and how that information can be used to develop in-season N fertilizer recommendations.

Bill Wiebold will discuss the use of unmanned aerial vehicles (UAV) in agriculture. In its simplest form, a UAV system includes some type of small, remotely-piloted vehicle and a camera. The camera can take either images or videos or both. These images and videos are stored for later observation. Often, the system will allow the pilot to see what the camera sees in real time, either through an app on a smartphone or some type of first-person-viewer. Part of Bill's discussion will involve FAA regulations and the need to respect privacy.

Additional sensors that will allow for more complicated analyses will be also discussed. Useful sensors already exist on ground-based vehicles, aircraft, or satellites. Examples are multispectral, hyperspectral, near infrared, and LIDAR sensors. LIDAR uses lasers to measure height of objects including plants. Another useful sensor measures plant or soil temperature. Plants maintain temperature in a narrow range by evaporating water from leaves. If water intake is restricted (e.g. root damage) or water outflow from leaves is reduced (e.g. drought or disease), leaf temperatures will increase. Temperature sensors can be amazingly sensitive and should be able to give early warning of possible problems.



Registration for the Ag Technology Fair begins at 8:00 am with the first sessions scheduled to begin at 8:30. Registration fee is \$25 and includes lunch. Demonstrations will end by 5:00pm. For more information contact the Bradford Research Center by phone (573-884-7945) or email (ReinbottT@missouri.edu). Preregistration is not required, but greatly appreciated. Bradford Research Center is east of Columbia in Boone County, south of Highway WW. From the Broadway exit on Highway 63, travel east 6.5 miles. Turn right on Rangeline Road and go 2 miles. There is a sign at WW and Rangeline. To use technology, set a navigation app for 4968 Rangeline Road. The web site for Bradford Research Center is [bradford.cafnr.org](http://bradford.cafnr.org).

# Weather Data for the Week Ending June 24, 2014

Station	County	Weekly Temperature (°F)						Monthly Precipitation (in.)		Growing Degree Days‡	
		Avg. Max.	Avg. Min.	Extreme High	Extreme Low	Mean	Departure from long term avg.	May 1-28	Departure from long term avg.	Accumulated Since May.1	Departure from long term avg.
Corning	Atchison	88	66	92	61	77	+2	6.00	+2.10	1295	+256
St. Joseph	Buchanan	85	68	90	63	76	+2	8.05	+3.83	1186	+153
Brunswick	Carroll	88	70	92	66	78	+3	7.13	+2.99	1306	+232
Albany	Gentry	86	67	92	58	76	+2	4.85	+0.90	1161	+162
Auxvasse	Audrain	88	69	91	66	77	+2	3.83	+0.05	1220	+129
Vandalia	Audrain	88	69	91	66	77	+2	3.60	+0.21	1190	+152
Columbia-Bradford Research and Extension Center	Boone	87	69	89	66	77	+2	6.14	+2.67	1200	+73
Columbia-Capen Park	Boone	90	68	92	64	77	+1	5.34	+1.42	1220	+46
Columbia-Jefferson Farm and Gardens	Boone	88	69	90	66	77	+2	6.07	+2.61	1236	+107
Columbia-Sanborn Field	Boone	88	70	91	67	78	+2	5.24	+1.46	1321	+144
Columbia-South Farms	Boone	87	69	89	66	77	+2	6.07	+2.58	1223	+95
Williamsburg	Callaway	88	69	90	65	77	+3	3.81	+0.10	1231	+180
Novelty	Knox	87	68	91	64	76	+2	6.96	+3.61	1102	+71
Linneus	Linn	86	68	92	62	76	+2	4.72	+0.62	1142	+134
Monroe City	Monroe	88	68	91	62	76	+1	3.37	+0.27	1169	+95
Versailles	Morgan	88	69	91	65	78	+3	3.94	+0.46	1305	+129
Green Ridge	Pettis	86	68	90	63	77	+2	6.07	+2.08	1230	+127
Lamar	Barton	87	68	91	64	77	+1	5.73	+0.99	1308	+88
Cook Station	Crawford	88	67	90	63	77	+2	3.54	+0.02	1267	+76
Round Spring	Shannon	89	65	93	62	76	+2	7.04	+3.91	1216	+85
Mountain Grove	Wright	85	66	89	62	74	0	6.04	+3.00	1191	+111
Delta	Cape Girardeau	89	69	92	66	78	0	4.26	+1.66	1361	-28
Cardwell	Dunklin	91	72	93	68	80	+1	5.28	+2.88	1540	-19
Clarkton	Dunklin	91	71	94	68	80	+1	3.46	+0.71	1494	-27
Glennonville	Dunklin	90	72	93	67	80	+1	2.71	+0.26	1520	+6
Charleston	Mississippi	91	71	93	68	80	+2	4.05	+1.02	1523	+127
Portageville-Delta Center	Pemiscot	92	73	95	69	81	+2	2.12	-1.00	1584	+41
Portageville-Lee Farm	Pemiscot	92	73	94	68	81	+2	3.20	+0.30	1599	+72
Steele	Pemiscot	92	71	96	69	81	+2	5.13	+1.95	1517	-39

‡Growing degree days are calculated by subtracting a 50 degree (Fahrenheit) base temperature from the average daily temperature. Thus, if the average temperature for the day is 75 degrees, then 25 growing degree days will have been accumulated.

*Weather Data provided by Pat Guinan  
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