

May 8, 2013

BAE

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April 2013 Monthly Summary

Wet conditions continued across the Bluegrass State through the month of April. Following an above normal March, April followed suit with Kentucky on average, 0.45 inches above normal. Throughout the period, numerous frontal passages pummeled the state with rainfall. A cold front over the latter half of the second week brought widespread soaking rains with most seeing more than an inch. The last week was the wettest as the state averaged over an inch and a half. Unsettled weather featured a cold front passing through the middle of the work week, followed by a slow moving upper level disturbance across the weekend. One aspect that was very unusual was a second straight April with nearly no severe weather. Normally this would be one of the most active periods of the year, but April of 2013 only saw minimal instances. One came as a frontal boundary dropped south across primarily the northern portions of the state on the 16th. Damaging winds and hail were the primary threats. Figure 1 was provided by the National Weather Service in Louisville and shows a strong cell in Jefferson County that dropped hail in excess of 1 inch at times.

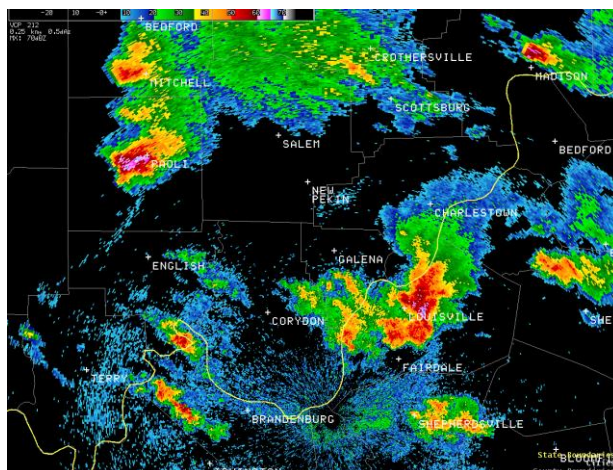


Figure 1

In regards to temperatures, the state finally broke a streak in the middle of April of having 7 consecutive weeks of below normal temperatures. This was the first time Kentucky had been above

normal since mid February. Breezy southerly flow throughout the week kept high temperatures in the 70s and at times, low to mid 80s. Lexington had even broken a record high on April 10th, where the mercury got to 84. On the other end of the spectrum, there were periods of cooler temperatures. Clear skies and nearly calm winds created multiple occasions when patchy frost was a problem. This was especially true in low lying and sheltered areas the last half of the month as lows dropped into the upper 20s at times. Overall, although there were times of extremely cool and warm temperatures, the Bluegrass State ended the month right at normal with a state average of 56 degrees.

Summarized and averaged data for the period 20130401 to 20130430 (Last 30 Days) (Not for Legal purposes. Departure from Norms based on climate divisional Averages)											
STATION	AIR TEMPERATURE						PRECIPITATION			ExtremeTemp	
	MAX	DEV	MIN	DEV	AVR	DEV	TOTAL	DEV	%NORM	HI	LO
WEST (CD1)	68	-1	47	1	57	-1	5.43	0.51	110	88	26
CENTRAL (CD2)	68	0	46	2	57	1	5.13	0.70	116	87	24
BLUEGRASS (CD3)	66	0	44	2	55	1	4.14	0.18	105	86	19
EAST (CD4)	69	1	45	5	57	3	4.45	0.40	110	89	18
STATE	68	0	46	3	56	0	4.79	0.45	110	89	18

Data obtained from KY Mesonet and NWS Station

Forecast

The Commonwealth is expected to stay in an unsettled period of weather through the weekend. Through the end of the week, the pesky closed low that has been plaguing the area with rain will finally drift away from the area, but another cold front is expected to follow on its heels. This system will move through the lower Ohio Valley over the course of Friday and into the overnight, followed by another reinforcing, dry cold front on Saturday night. This will not be as slow moving like we saw this past week, but it will still provide another period of widespread rainfall across the state. Following this system, it seems that the Bluegrass State will finally have an opportunity to finally dry out as Canadian high pressure invades the area. The only drawback is that temperatures will plunge once again with patchy frost in the forecast for Monday morning. Granted the event is still 5 days out, models are showing some general consistency and agreement in bringing temperatures back in 30s. This would be the latest frost date since May

19th of 2002, when many locations dropped to around freezing.

3 Month Outlook (MJJ)
Near Normal Rainfall and Above
Normal Temperatures

The extended outlooks are sticking with a trend of dry conditions. Both the 6 to 10 (May 13-17) and 8 to 14 day (May 15-21) outlooks are both suggesting below normal rainfall. Going out to July, the 3 month outlook calls for above normal temperatures and near normal rainfall. Normal highs for the month of May are in the low 70s for the start of the month before increasing to around 80 by the end. Lows will range from the low 50s at the start of May to the low 60s toward the end. Average precipitation for the month ranges between 4.5 to around 5 inches.

Use of Growing Degree Days in Ag Management Decisions

The calculation of Growing Degree Days (GDD's) is becoming more and more prevalent and useful in the agricultural sector. GDD's can be used in a variety of ways, ranging from quantifying the relative GDD requirements for the growth stages of corn to estimating the onset of Alfalfa Weevil. Together, the UK Ag Weather center and specialists across the College of Agriculture have worked together in developing an appropriate tool for agricultural producer's to utilize in farm management decisions. This tool can be seen at the following link (<http://weather.uky.edu/dd.php>) and directed to a page in which GDD's are utilized in a variety of ways, which will be explained in a more in-depth perspective below.

UKAg **Calculating Degree Days**

Calculating Growing Degree Days for Kentucky Counties

Users of the Growing Degree Day models must select your county of interest, a Starting date and Ending Date. For Growing Degree Days you must enter a base temperature...50 is the default temperature. For modified growing degree days.....Low < 50F, Reset to 50F, Ceiling 86F.

Simply fill out the desired parameters then press the "Submit Choices" button.

County:	Starting date:	Ending date:
Adair	May 07 2013	May 08 2013

Choose the degree day base :

Note: Change the base temperature for growing degree day calculations, default is 50

Figure 2

First, the Growing Degree Day page (Figure 2) was developed with a variety of factors and circumstances in mind. The first two links on the left side of the page are meant for crop-related GDD utilization. Growers can estimate the amount of accumulated GDD's for their county by selecting a few simple parameters. The program will ask for a location (county), time span, and a base temperature for growing degree calculations. As such, the producer will obtain the amount of accumulated degree days for his or her county, in addition to the GDD's that were calculated for each day throughout the period. As an example, a farmer in Warren County may question how many GDD's have accumulated between April 1 and April 20, 2013 with a base temperature of 50. Putting these parameters into the program will yield an accumulated GDD total of 180 for this time period as shown in Figure 3 below.

Warren County					
Degree day base input: 50					
Type of degree days : Growing Degree Days(GDDS)					
Date	MaxTemp	MinTemp	AverTemp	GDDS	AccGDDS
04/01/2013	55	38	47	0	0
04/02/2013	50	27	39	0	0
04/03/2013	53	28	41	0	0
04/04/2013	48	41	45	0	0
04/05/2013	66	32	50	0	0
04/06/2013	70	38	55	5	5
04/07/2013	73	50	62	12	17
04/08/2013	74	52	64	14	31
04/09/2013	77	60	69	19	49
04/10/2013	83	59	72	22	71
04/11/2013	72	52	62	12	83
04/12/2013	59	37	48	0	83
04/13/2013	62	34	49	0	83
04/14/2013	72	39	56	6	89
04/15/2013	75	55	66	16	105
04/16/2013	79	64	72	22	127
04/17/2013	85	64	75	25	152
04/18/2013	81	68	75	25	177
04/19/2013	68	37	53	3	180
04/20/2013	58	35	47	0	180

Figure 3

The second link was created in order to display accumulated GDD's across the state of Kentucky based on several distinct unique threshold dates in which corn was initially planted. In this case, 4 different dates can be selected from the drop down menu, which includes April 1, April 15, May 1, and May 15. If a planting date was between 2 of the dates listed, it can be simply estimated based on the other dates. Once again, the default base temperature is set to 50 degrees. Below is an image that once again goes off a base temperature of 50 and the accumulated GDD's between a planting date of April 15 and the most recent date of May 6th. Mostly all of the counties are suggesting that if corn was planted on April 15th, it has already emerged.

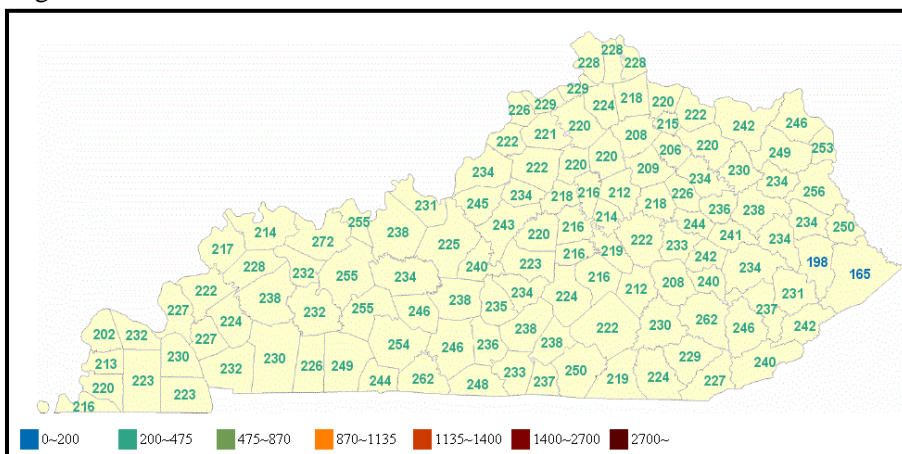


Figure 4

The next couple of links on the left hand side of the page were used for estimating dates for the application of various insecticides. These models can be used for Alfalfa Weevil, Codling Moth, European Corn Borer, Oriental Fruit Moth, San Jose Scale, and Corn Rootworm. A set of guidelines is available for each model, along with recommendations for each respective pest management and more information. Each model will run with the particular guidelines for the selected insect and the results will show the amount of accumulated GDD's since the biofix date, in addition to the amount of GDD's on a daily basis. Also included, is a link just below that allows a producer to examine how each particular model looks at a statewide scale. Degree day maps for insects have been created for the state of Kentucky to compare different sections of the state in one step, rather for only your county.

The last link (Degree Days for Ornamental/Horticultural Insects) was then established to provide farmers and other producers the ability to select their own thresholds. In this case, the county, base temperature, and biofix date can all be adjusted to meet the conditions set by the user.

If you have any comments on the program or think of any ways to improve the program, feel free to contact us at the Ag Weather Center at the information contained within the footer of each page. As of right now, it is the intent to create another program to display the number of GDD's for each day across a certain time period and then, based on daily normal's, approximate the amount of accumulated GDD's going forward into the future.

Other News

The Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS) is currently looking for more observers across the state of Kentucky. Observers are asked to record daily measurements of rain or snowfall accumulations. New to 2012, observers can now take readings of evapotranspiration. Kentucky observers provide a great volunteer service to the community, the county and the state by providing information on precipitation, snowfall, and snow depths. The information is used by government and university scientists, community officials, farmers, county emergency managers, watershed managers, drought monitors, and by your friends and neighbors. More information about this organization and how to join can be found here at:

<http://www.cocorahs.org/state.aspx?state=ky>

May Garden Safe Planting Dates

	Earliest Safe Planting		Latest Safe Planting	
	Date	Area of KY	Date	Area of KY
Asparagus (crowns)	-----	-----	Spring Only	All
Beans (snap)	May 1st	Eastern Mt.	-----	-----
Beans (lima)	May 1 st May 10 th	Central Eastern Mt.	-----	-----
Sweet Corn	May 1st	Eastern Mt.	-----	-----
Cucumbers	May 1 st May 10 th	Central Eastern Mt.	-----	-----

Eggplant (plants)	May 1 st May 10 th May 15 th	Western Central Eastern Mt.	----	----
Muskmelons	May 10 th May 15 th	Central Eastern Mt.	----	----
Okra	May 10 th May 15 th	Central Eastern Mt.	----	----
Onions (sets)	----	----	Spring Only	All
Peas	----	----	Spring Only	All
Peppers (plants)	May 1 st May 10 th May 20 th	Western Central Eastern Mt.	----	----
Sweet Potatoes	May 1 st May 10 th May 20 th	Western Central Eastern Mt.	----	----
Pumpkins	May 5 th May 10 th	Central Eastern Mt.	----	----
Southern Peas	May 5 th May 10 th	Central Eastern Mt.	----	----
Summer Squash	May 10 th May 15 th	Central Eastern Mt.	----	----
Tomatoes (plants)	May 5 th May 15 th	Central Eastern Mt.	----	----
Watermelons	May 5 th May 15 th	Central Eastern Mt.	----	----
Winter Squash	May 10 th May 15 th	Central Eastern Mt.	----	----

May Vegetable Gardener's Calendar for Western KY

May 1st	- Start seeds outdoors for SWEET CORN, MUSTARD, RADISHES, and LETTUCE.
May 7th	- Start seeds outdoors for GREEN BEANS and LIMA BEANS. - Move transplants to garden for TOMATOES, MUSKMELONS, WATERMELONS, and SQUASH.
NOTE: Add 10 days for Central KY and 15 for Eastern KY to these dates for spring and summer crops.	

May Crop Operations

	First Week	Second Week	Third Week	Fourth Week
Forages	-----	-----	1 st cutting Alfalfa 25% complete	1 st cutting Alfalfa 40% complete
Small Grains	Army Worm Development BEGINS	Wheat 30% headed Army Worm Development (cont.)	Army Worm Development (cont.)	Army Worm Development (cont.)
Soybeans	Planting BEGINS	5% is now planted	15% is now planted	-----
Tobacco	-----	-----	10% of crop is set	20% of crop is set
Corn	-----	50% of crop is planted	65% of crop is planted	75% of crop planted European Corn Borer becomes ACTIVE
General Farm Operations	-----	-----	-----	-----

May Beef Operations

Spring Calving Herd	<ul style="list-style-type: none"> • Breeding season BEGINS. • Continue supplying supplemental magnesium until daytime temperatures are consistently above 60 degrees.
Fall Calving Herd	<ul style="list-style-type: none"> • Weaning period.
All Cattle	<ul style="list-style-type: none"> • Don't start fly control until fly population builds up.
Forages	<ul style="list-style-type: none"> • Start hay harvests for quality forage. • Seed warm season annuals for supplemental forage as needed. • Seed warm season perennial grasses. • Clip seedheads to prevent seedhead formation on fescue and to control weeds as needed. Consider herbicide options. • Rotate pastures as needed.