



University of Kentucky
College of Agriculture,
Food and Environment
Cooperative Extension Service



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Kentucky's Fall 2018 Winter Wheat Crop Condition

Carrie Knott — Extension Grain Crop Specialist

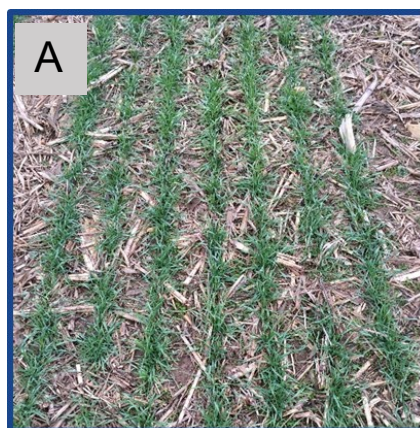


Figure 1. Winter wheat planted at University of Kentucky Research and Education Center, Princeton, KY, on Oct 9 (A) and Oct 25 (B).

In early-October, Kentucky winter wheat planting began with excellent conditions. Average daily temperatures were well above the 30-year average, soil conditions were adequate to support rapid seed germination and seedling establishment, and for much of the state precipitation did not impede planting (Tables 1 and 2). Weather conditions quickly changed in mid- and late- October. Average daily temperatures were below average and soil conditions were too wet to allow drills to be used to plant the wheat (Tables 1 and 2). Unfortunately, cool and wet conditions continued throughout November and early- December (Tables 3 and 4).

These weather conditions prevented many thousands of acres of wheat from being planted in Kentucky this fall. It also resulted in very dramatic developmental differences in Kentucky's wheat crop. In general, if wheat was planted in early-October it has tillered well and appears to have very good stands (Figure 1A). However, if wheat was planted in mid- to late- October (or later) very little tillering has occurred and stands appear very thin with delayed development (Figure 1B). In some cases, wheat planted in late-October or later has not yet emerged. This delayed development is probably due to the cool conditions that occurred after planting.

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The cumulative growing degree days (cGDD) from October 1 to December 6 ranged from 1198 to 1384 across Kentucky (Table 5). The difference between the actual cGDD this year and the 30-year average cGDD ranged from +6 to -217, which equates to a 0 to 12 day delay. In general, Western Kentucky had fewer cGDD than the 30-year average, while the southern tier and central part of the state had similar or slightly greater cGDD this year. However, given that early-October average daily temperatures were well above average across the state, it is probably better to examine the cGDDs beginning in November. From Nov 1 to Dec 6, cGDD were 22 to 220 less than the 30-year average. This resulted in wheat being delayed by approximately 2 to 16 calendar days as of Dec 7.

This delay may or may not result in problems for the wheat crop later next spring and will depend entirely on the winter weather conditions. As of Nov 15, NOAA's three month predicted forecast for Kentucky is an equal chance for the daily average temperatures to be normal, above normal, and below normal (Figure 2). Essentially, there is no good prediction of our winter weather at this point. This will require that we wait until spring to determine crop condition. In the spring, prior to Feekes 3 growth stage, the number of wheat stems per square foot will need to be determined. This will allow producers to determine which management decisions will be necessary for a profitable 2019 wheat crop.

For the wheat that has yet to emerge, it will eventually emerge, but the question will be same as all other wheat crops this year: Are there adequate stands to support profitable yield?

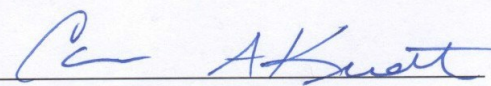

Carrie Knott, Extension Grain Crops Specialist

Figure 2. NOAA's National Weather Center's official three month outlook for average daily temperatures (http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=13).

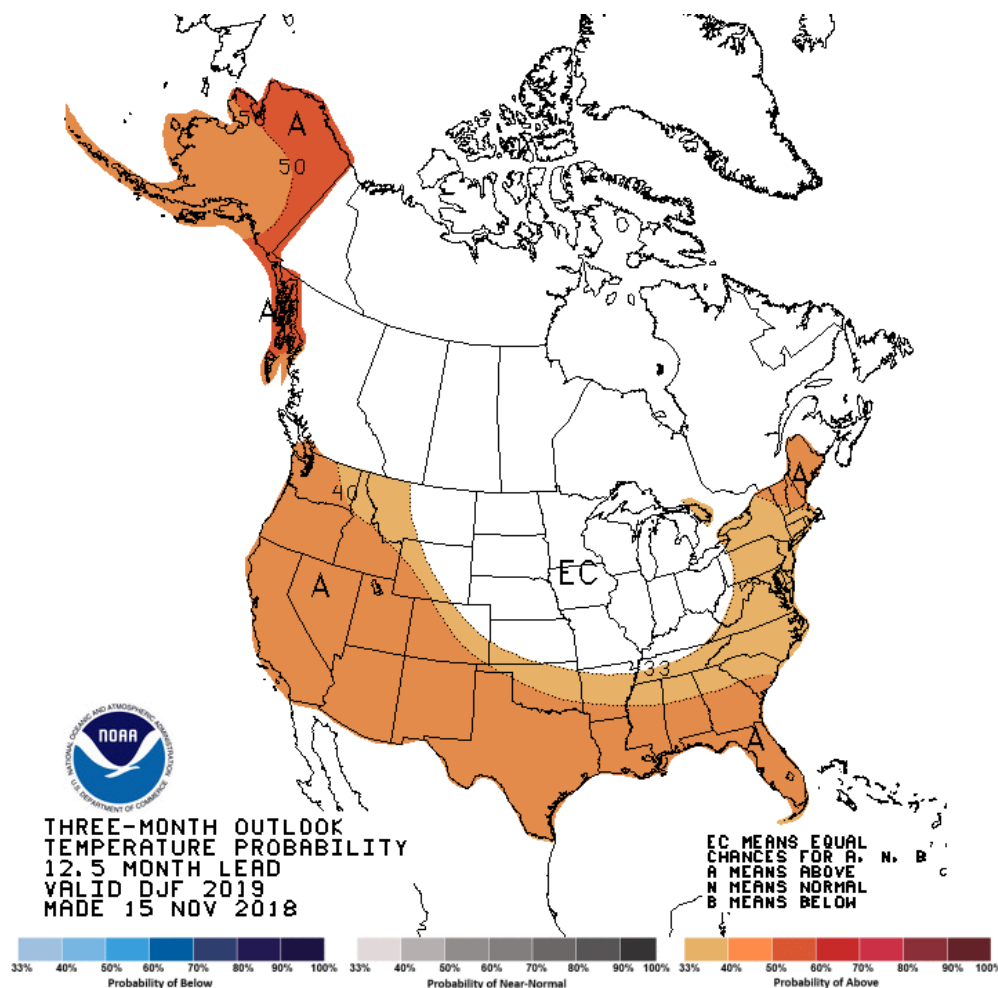


Table 1. Average daily temperature and deviation from the 30-year average in early and late October for various locations throughout Kentucky. Data obtained from University of Kentucky Agricultural Weather Center
http://weather.uky.edu/ky/data.php#KY_Climate_Data.

Location	Oct 1 to 15, 2018		Oct 16 to 31, 2018	
	Average Daily Temperature (°F)	Deviation from 30-yr Avg (°F)	Average Daily Temperature (°F)	Deviation from 30-yr Avg (°F)
Bardstown	69	+8	50	-5
Bowling Green	71	+10	54	-2
Glasgow	69	+8	52	-3
Hardinsburg	68	+7	51	-4
Henderson	69	+6	52	-6
Mayfield	69	+7	53	-4
Paducah	70	+7	54	-3
Princeton	69	+7	52	-5
Somerset	68	+8	50	-4
Spindletop Research Farm--Lexington	68	+8	51	-3

Table 2. Total precipitation and deviation from the 30-year average in early and late October for various locations throughout Kentucky. Data obtained from University of Kentucky Agricultural Weather Center
http://weather.uky.edu/ky/data.php#KY_Climate_Data.

Location	Oct 1 to 15, 2018		Oct 16 to 31, 2018	
	Total Precipitation (inches)	Deviation from 30-yr Avg (inches)	Total Precipitation (inches)	Deviation from 30-yr Avg (inches)
Bardstown	1.93	+0.69	0.76	-0.57
Bowling Green	4.07	+2.61	0.86	-0.70
Glasgow	3.41	+1.95	0.91	-0.64
Hardinsburg	1.13	-0.35	1.71	+0.14
Henderson	1.10	-0.25	2.04	+0.61
Mayfield	1.60	-0.15	0.80	-1.06
Paducah	1.47	+0.02	2.29	+0.74
Princeton	1.09	-0.39	1.87	+0.30
Somerset	3.75	+2.17	0.91	-0.78
Spindletop Research Farm --Lexington	1.91	+0.67	4.63	+3.30

Table 3. Average daily temperature and deviation from the 30-year average from October and November to early-December for various locations throughout Kentucky. Data obtained from University of Kentucky Agricultural Weather Center http://weather.uky.edu/ky/data.php#KY_Climate_Data.

Location	Oct 1 to Dec 6, 2018		Nov 1 to Dec 6, 2018	
	Average Daily Temperature (°F)	Deviation from 30-yr Avg (°F)	Average Daily Temperature (°F)	Deviation from 30-yr Avg (°F)
Bardstown	50	-1	42	-3
Bowling Green	52	+1	44	-1
Glasgow	51	+2	43	-3
Hardinsburg	50	+1	41	-4
Henderson	50	-4	40	-7
Mayfield	51	-2	42	-5
Paducah	52	-1	43	-4
Princeton	51	-3	42	-5
Somerset	50	0	42	-2
Spindletop Research Farm --Lexington	50	0	42	-2

Table 4. Total precipitation and deviation from the 30-year average from October and November to early-December for various locations throughout Kentucky. Data obtained from University of Kentucky Agricultural Weather Center http://weather.uky.edu/ky/data.php#KY_Climate_Data.

Location	Oct 1 to Dec 6, 2018		Nov 1 to Dec 6, 2018	
	Total Precipitation (inches)	Deviation from 30-yr Avg (inches)	Total Precipitation (inches)	Deviation from 30-yr Avg (inches)
Bardstown	10.45	+3.72	7.76	+3.60
Bowling Green	11.75	+3.33	6.82	+1.42
Glasgow	10.99	+2.45	6.67	+1.14
Hardinsburg	9.61	+1.53	6.77	+1.74
Henderson	9.20	+1.61	6.06	+1.25
Mayfield	9.21	-0.30	6.81	+0.91
Paducah	11.37	+3.14	7.61	+2.38
Princeton	9.14	+0.48	6.18	+0.57
Somerset	10.97	+2.60	6.31	+1.21
Spindletop Research Farm --Lexington	12.50	+5.77	5.96	+1.80

Table 5. Cumulative Growing Degree Days (cGDD) calculated from the 30-year average and for 2018 from October 1 December 6 for various locations throughout Kentucky. Data obtained from University of Kentucky Agricultural Weather Center http://weather.uky.edu/ky/data.php#KY_Climate_Data.

Location	cGDD† Oct 1 to Dec 6, 2018		Estimated Difference "Calendar Days"‡	cGDD Nov 1 to Dec 6, 2018		Estimated Difference "Calendar Days"
	30-yr Avg	2018		30-yr Avg	2018	
Bardstown	1285	1242	-3	484	398	-8
Bowling Green	1285	1384	+6	483	461	-2
Glasgow	1278	1284	0	479	411	-6
Hardinsburg	1283	1208	-5	486	361	-10
Henderson	1425	1208	-12	560	340	-16
Mayfield	1427	1287	-8	561	390	-12
Paducah	1429	1349	-4	562	424	-10
Princeton	1426	1277	-8	561	390	-12
Somerset	1186	1198	+1	426	371	-6
Spindletop Research Farm --Lexington	1190	1203	+1	428	363	-7

†cGDD=Cumulative Growing Degree Days; Calculated as the sum of the daily GDD for the specified period of time with a base temperature of 32°F (sum of day 1 to day x of {Average Daily Temperature - 32°F}).

‡To determine the estimated difference in calendar days the average daily temperature for the month of October and November and from Dec 1 to 6 was obtained from University of Kentucky Agricultural Weather Center http://weather.uky.edu/ky/data.php#KY_Climate_Data. The average daily temperatures were used to calculate GDD per day for each time period and location in Kentucky.

USEFUL RESOURCES



Crops Marketing and Management Update

<http://www.uky.edu/Ag/AgEcon/extcmu.php>

Wheat Outlook for 2018-19 and Preliminary 2019-20 Projections

Dr. Todd D. Davis, Extension Grain Marketing Specialist

The December *World Agricultural Supply and Demand Estimates (WASDE)* tends to provide little new supply information as the markets wait for the final production estimates in the January report. The only new information is for Southern Hemisphere production and USDA's expectations for crop exports.

USDA projects the 2018 wheat yield at 47.6 bushels/acre, a 1.3-bushel increase over 2017, on 39.6 million harvested acres. USDA projects total wheat production at 1.88 billion bushels. The larger wheat crop is off-set by a smaller carry-in and reduced imports with supply projected to increase by 45 million bushels from 2017-18 (Table 1).

Table 1. U.S. Wheat Supply and Use.

Table 1. U.S. Wheat Supply and Use					
	2015-16	2016-17	2017-18 Estimated	2018-19 Projected	Change from 17-18
Planted Acres (million)	55.0	50.1	46.0	47.8	+1.8
Harvested Acres (million)	47.3	43.9	37.5	39.6	+2.1
Yield (bushels/acre)	43.6	52.7	46.3	47.6	+1.3
----- Million Bushels -----					
Beginning Stocks	752	976	1,181	1,099	-82
Production	2,062	2,309	1,740	1,884	+144
Imports	<u>113</u>	<u>118</u>	<u>157</u>	<u>140</u>	-17
Total Supply	2,927	3,402	3,078	3,123	+45
Food	957	949	964	970	+6
Seed	67	61	63	69	+6
Feed and Residual	152	156	50	110	+60
Exports	<u>775</u>	<u>1,055</u>	<u>901</u>	<u>1,000</u>	+99
Total Use	1,952	2,222	1,979	2,149	+170
Ending Stocks	976	1,181	1,099	974	-125
Stocks/Use	50.0%	53.2%	55.5%	45.3%	-10.2%
Days of Stocks	183	194	203	165	-37
U.S. Marketing-Year Average Price (\$/bu)	\$4.89	\$3.89	\$4.72	\$5.15	+\$0.43

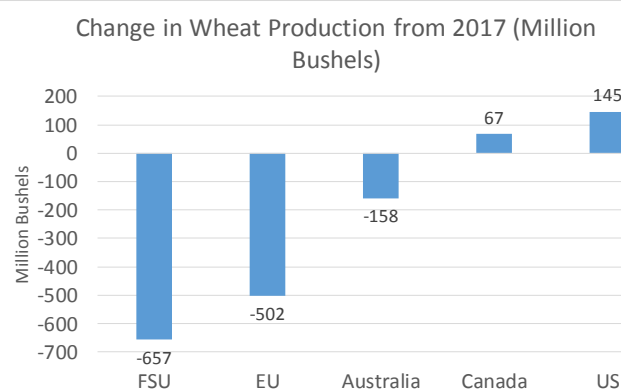
Source: December 2018 WASDE - USDA: WAOB.

USDA projects wheat use to increase by 170 million bushels from the 2017-18 marketing-year. Food use and seed use are both projected to increase slightly from the previous year. Feed use is projected to increase by 60 million bushels to 110 million bushels. The estimate might be aggressive given the supply of corn.

USDA projects exports to increase by 99 million bushels. However, wheat exports have lagged last year and the five-year-average export pace. As a result, USDA may lower the export projections in future reports.

The current projections are for wheat stocks to decline by 125 million bushels to 974 million bushels (Table 1). The stocks-to-use ratio would fall below 50% for the first time since 2014-15. The smaller quantity of stocks would support higher wheat prices, with the U.S. marketing-year average (MYA) farm price estimated at \$5.15 per bushel, which is a \$0.43/bushel increase from last year.

Figure 1. Change in Wheat Production for Major Exporting Countries from 2017.



The U.S. serves as the residual supplier and may benefit from additional exports in 2018-19. Major exporting regions harvested smaller wheat crops with the FSU, EU, and Australia crops reduced from last year. The combined production loss for the world is about 1.1 billion bushels (Figure 1).

USDA released the preliminary *USDA Agricultural Projections to 2028* on November 2, 2018. These long-term projections are used for budgeting and making policy decisions (like the next Farm Bill) to determine the benefit and costs of alternative policies. The projections are entirely based on statistical models and do not incorporate any survey information from farmers. However, the forecasts provide an initial guess on 2019 planted area for wheat and competing crops.

Table 2. Preliminary Wheat Balance Sheet for the 2019-29 Marketing-Year.

	2019-20 Wheat	Change from 2018-19	USDA projects 2019-seeded area to increase by 3.2 million acres due to soybean acres switching to corn or wheat. USDA assumes average abandonment and trend-line yields; therefore, the 2019 wheat crop is expected to increase by 176 million bushels to over 2 billion bushels. The smaller carry-in and reduced imports would offset the larger crop. The net impact on supply is a small increase from 2018-19.
	----- Million Acres -----		
Planted	51	+3.2	
Harvested	43.1	+3.5	
Yield (bu/acre)	47.8	+0.2	
	----- Million Bushels -----		
Beginning Stocks	949	-150	
Production	2,060	+176	
Imports	130	-10	
Total Supply	3,139	+16	
Domestic Use	1,163	+14	
Exports	1,050	+50	
Total Use	2,213	+64	
Ending Stocks	926	-48	
Days of Stocks	153	-13	
U.S. Average Farm Price	\$5.20	+\$0.05	
Source: December 2018 WASDE - USDA: WAOB. Preliminary Baseline Projections November 2018.			

Wheat could absorb increased area if yields are near trend and if use remains strong. The projections suggest that stocks would decline slightly in 2019. USDA projects the 2019 MYA farm price at \$5.20 per bushel, which is a \$0.05 per bushel increase from 2018 (Table 2).

In summary, after consecutive years of reduced area, the wheat market has whittled away at the large stocks from the 2016 marketing year. The prospect of an increase in planted area in 2019 (weather permitting) combined with above-trend yields could increase stocks by a larger than projected amount. Regardless, the July 2019 wheat futures contract has provided pricing opportunities this fall to protect wheat margins. A weather scare in spring 2019 could provide another opportunity to price 2019 wheat.

Kentucky Agriculture Training School (KATS)

(formerly called the Field School)

The University of Kentucky Field School has officially been renamed the Kentucky Agriculture Training School (KATS)! The KATS trainings have been and will continue to be held at the University of Kentucky Research Center in Princeton, KY and are designed to provide hands-on trainings for consultants, advisors and producers.

Dates for 2019 Trainings:

- * **March 7** **Wheat Management at Green-up, Pre-plant Decisions for Corn and Soybeans**
- * **May 21** **Field Crop Scouting Clinic**
- * **June 13** **Mid-season Corn and Soybean Considerations, Preparing for Wheat Harvest and Storage**
- * **July 18** **Spray Clinic**
- * **Aug. 22** **Disease Identification and Management, Harvest and Storage Decisions, Cover Crops**
- * **Sept. 19** **Late-season Management of Corn and Soybeans, Successful Wheat Establishment**



For updates as well as information on past workshops visit <http://kats.ca.uky.edu/>

For more information contact: Lori Rogers, University of Kentucky Research & Education Center, Lori.rogers@uky.edu



UPCOMING EVENTS

<u>2019</u>	<u>EVENT</u>	<u>LOCATION</u>
JANUARY 8	UK WINTER WHEAT MEETING	HOPKINSVILLE KY
MARCH 6	2019 IPM TRAINING	HOPKINSVILLE KY
MARCH 7	KATS (KY Agriculture Training School) Wheat Management at Green-UP/Pre-plant Decisions for Corn & Soybean	PRINCETON KY
MAY 14	UK WHEAT FIELD DAY	PRINCETON KY
MAY 21	KATS—Field Crop Scouting Clinic	PRINCETON KY
JUNE 13	KATS— Mid-Season Corn & Soybean Considerations/Preparing for Wheat Harvest & Storage	PRINCETON KY
JULY 18	KATS—Spray Clinic	PRINCETON KY
JULY 23	UK CORN, SOYBEAN & TOBACCO FIELD DAY	PRINCETON KY
AUG 22	KATS—Disease ID & Management/Harvest & Storage/Cover Crops	PRINCETON KY
SEPT 19	KATS—Late-Season Management of Corn & Soybeans/Successful Wheat Establishment	PRINCETON KY



2019 WINTER WHEAT MEETING

January 8th

 University of
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College of Agriculture, Food and Environment

9—3 cst

Which and When?

Applying the Best Products at
the Best Timing for Fusarium
Head Blight Management

Current Wheat
Condition

Weed Control
in Wheat

Harvest Aid Options
in Wheat

TOPICS

Soil Impacts and Economic
Costs of Cover Cropping

IPM vs. Prophylactic
Management of Aphids
and BYDV

Wheat, Corn and Soybean Outlook,
Profitability Potential, and Risk
Management Update for 2019

Forum-UK Specialists



James E. Bruce Convention Center
303 Conference Center Drive
Hopkinsville, KY 42240

APPROVED CREDITS:
CCA : 1 SM; 2 PM; 1 CM
PAT: Pending

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