



USDA, National Agricultural Statistics Service
Indiana Crop & Weather Report

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CROP REPORT FOR WEEK ENDING JULY 24

AGRICULTURAL SUMMARY

Rain was welcomed by farmers in portions of the state during the week, according to the Indiana Field Office of USDA's National Agricultural Statistics Service. However, rainfall is still "hit and miss" for many areas. Corn and soybean fields remain under stress where rain has been minimal, especially on the lighter, sandy type soils. Hot weather has farmers concerned with pollination of corn and setting of pods on soybean plants. Deficient soil moisture remains a major concern for farmers. Corn and soybean condition improved during the week. Many farmers were attending county fairs.

FIELD CROPS REPORT

There were 4.6 **days suitable for fieldwork**. Corn **condition** is rated 46 percent good to excellent compared with 77 percent last year at this time. Eighty-eight percent of the corn acreage has **silked** compared with 92 percent last year and 73 percent for the 5-year average. By area, corn silked is 87 percent complete in the north, 87 percent complete in the central region and 90 percent complete in the south. Thirteen percent of the corn acreage has reached the **dough** stage compared with 22 percent last year and 13 percent for the average. Eighty percent of the soybean acreage is **blooming** compared with 76 percent last year and 67 percent for the average. Thirty-one percent of the soybean acreage is **setting pods** compared with 34 percent last year and 24 percent for the average. Soybean **condition** is rated 51 percent good to excellent compared with 72 percent last year.

Ninety-nine percent of the **winter wheat** acreage is **harvested** compared with 100 percent last year and 98 percent for the 5-year average. Second cutting of **alfalfa hay** is 85 percent complete compared with 83 percent last year and 84 percent for the average.

Major activities during the week included baling hay and straw, repairing equipment, monitoring and spraying fields for insects, hauling grain to market, mowing roadsides and pastures, hauling manure and taking care of livestock.

LIVESTOCK, PASTURE AND RANGE REPORT

Pasture condition improved and is rated 2 percent excellent, 31 percent good, 40 percent fair, 20 percent poor and 7 percent very poor. Livestock suffered from high temperatures and humidity throughout most of the week.

CROP PROGRESS TABLE

Crop	This Week	Last Week	Last Year	5-Year Avg
Percent				
Corn Silked	88	64	92	73
Corn in Dough	13	5	22	13
Soybeans Blooming	80	62	76	67
Soybeans Podding	31	12	34	24
Winter Wheat Harvested	99	98	100	98
Alfalfa Second Cutting	85	79	83	84

CROP CONDITION TABLE

Crop	Very Poor	Poor	Fair	Good	Excellent
Percent					
Corn	5	14	35	39	7
Soybeans	4	12	33	44	7
Pasture	7	20	40	31	2

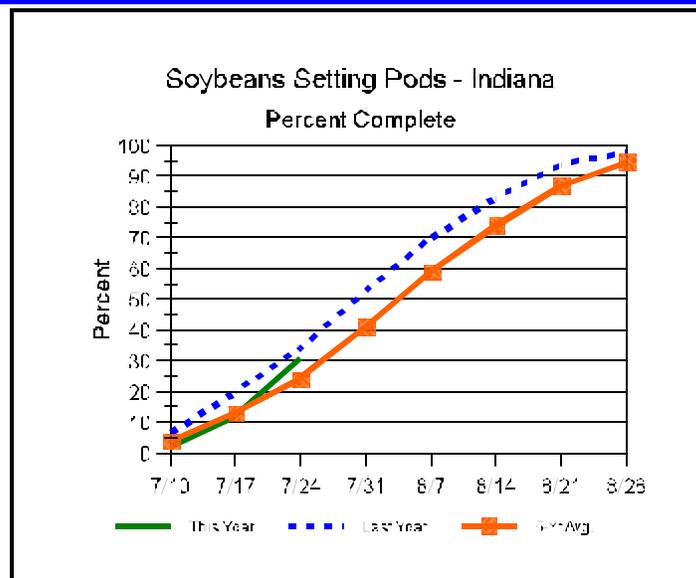
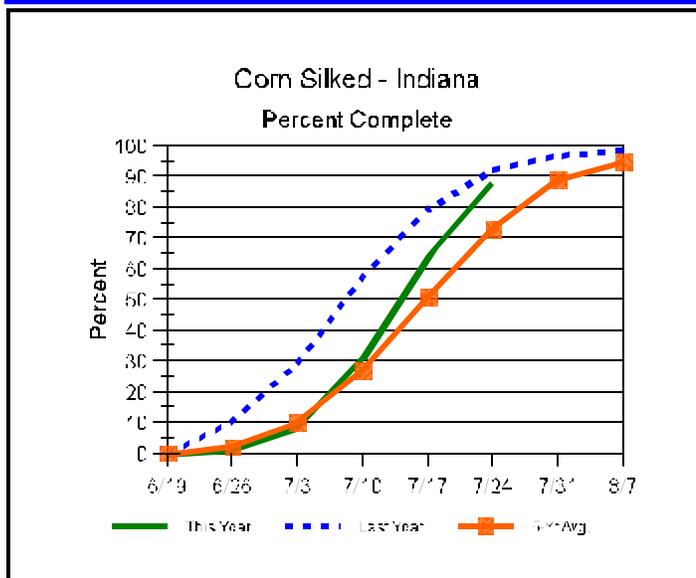
SOIL MOISTURE & DAYS SUITABLE FOR FIELDWORK TABLE

	This Week	Last Week	Last Year
Percent			
Topsoil			
Very Short	8	16	2
Short	25	34	12
Adequate	62	47	79
Surplus	5	3	7
Subsoil			
Very Short	13	18	1
Short	33	38	12
Adequate	53	44	82
Surplus	1	0	5
Days Suitable	4.6	3.7	5.0

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Crop Progress



Other Agricultural Comments And News

Behind the Proverbial Eight Ball

- “Behind the Eight Ball”: A term, referring to the game of pool, meaning in an unfavorable or uncomfortable position. The New Dictionary of Cultural Literacy, Third Edition. Edited by E.D. Hirsch, Jr., Joseph F. Kett, and James Trefil. Copyright © 2002 by Houghton Mifflin Company. Published by Houghton Mifflin Company. All rights reserved.

This year's corn crop in Indiana is certainly “behind the eight ball” relative to the potential for high grain yield. This year's struggles are particularly frustrating for growers who harvested record high yields last year following a growing season where the crop was “ahead of the curve” almost the entire game. In contrast to last year's almost perfect growing season, the 2005 season has misfired to date in a number of ways. As is usually the case, perfect weather from here to the finish line would help mitigate some of the damage, but certainly not all. The corn crop condition ratings by USDA – National Agricultural Statistics Service reflect the accumulated effects of these stresses. The percent of the state's corn crop currently (7/17/05) estimated to be good to excellent is only 39% (USDA-NASS, 2005). Based on the historical relationship between July crop condition ratings and yield, the potential statewide yield could be as much as 10% less than the historical trend yield of 146 bu/ac. Contrast this potentially low yield estimate with the record yields achieved in 2004 (16% above trend) and it's no surprise why the outlook in many local coffee shops is gloomy.

Major Stresses in 2005.

Germination, Emergence, and Stand Establishment. Fields throughout eastern and southern Indiana planted in mid-April suffered the consequences of a significant cold snap and crusting rains that occurred prior to emergence of the crop. Toss in some seedling blight and bird damage for good measure and stand establishment was pathetic in a number of fields.

The number of replanted acres consequently reported by many seed companies was cited as being the highest in recent years. A further complicating factor for some fields was a shallow compacted soil layer resulting from spring tillage that

eventually restricted rooting depth of the corn crop and increased its eventual vulnerability to drought stress.

Increasing Drought Stress. Though not as serious as reported in Illinois, soil moisture deficits began to develop early in some areas of Indiana and continue today to varying degrees, resulting in a dramatic “rags to riches” contrast from one field to another. Fields of corn also suffering from the root limiting effects of severe soil compaction or feeding damage from western corn rootworm (WCRW) larvae (Obermeyer et al. 2005b) are obviously even more vulnerable to the effects of drought stress.

Some of the drought-stressed fields I've walked in recent weeks are as bad as I've seen since the “Great Drought of 1988”. Yet, I've seen other fields and talked with some growers who feel that 200 bu/ac is a realistic yield potential simply because they have received more rainfall at critical junctures of the season.

The effects of severe drought stress to date include a likely reduced ear size potential heading into pollination, possible delays in silk emergence during pollination, and smaller size and poorer health of the effective “photosynthetic factory”. Continued drought stress early in the grain filling period can easily cause significant kernel abortion, especially in the tips of the ears. Temperatures in the lower 90's are not terribly stressful to the corn crop in and of themselves, but clearly aggravate the effects of soil moisture deficits on the health of the crop.

Warm Night Temperatures. The two main physiological processes that work in concert to “build” the “factory” and eventually produce grain are photosynthesis and respiration. The former captures solar energy and converts it to chemical energy; which is then used to convert absorbed carbon dioxide to simple sugars in the leaves.

In contrast to photosynthesis, respiration catabolizes (breaks down) some of the simple sugars produced by photosynthesis to create the chemical energy it requires to then convert the remainder of the simple sugars to more complex carbohydrates. This catabolism also produces carbon dioxide, some of which is lost through the leaf stomata.

Excessively warm nights greatly increase the rate of respiration and are sometimes thought to be detrimental to overall dry matter accumulation in the corn crop because of a possible reduction in net carbohydrate accumulation. While

(Continued on Page 4)

Weather Information Table

Week ending Sunday July 24, 2005

Station	Past Week Weather Summary Data							Accumulation				
	Air Temperature				Precip.		Avg	April 1, 2005 thru July 24, 2005				
							4 in	Precipitation		GDD Base 50°F		
	Hi	Lo	Avg	DFN	Total	Days	Soil Temp	Total	DFN	Days	Total	DFN
Northwest (1)												
Chalmers_5W	95	64	78	+5	1.29	4		8.16	-6.13	35	1829	+116
Valparaiso_AP_I	94	59	78	+5	0.78	3		7.11	-8.09	32	1737	+205
Wanatah	95	57	77	+5	0.95	4	83	9.20	-5.50	39	1673	+210
Wheatfield	91	64	78	+5	1.95	7		13.33	-1.06	70	1734	+227
Winamac	92	64	78	+5	3.70	3	79	10.84	-3.57	43	1775	+207
North Central(2)												
Plymouth	90	63	77	+4	1.75	3		8.02	-7.10	40	1692	+57
South_Bend	89	63	78	+5	1.57	5		6.80	-7.33	38	1777	+262
Young_America	92	63	77	+4	2.05	5		12.58	-1.28	41	1767	+166
Northeast (3)												
Columbia_City	90	58	77	+5	1.22	3	79	11.40	-2.82	42	1660	+215
Fort_Wayne	92	60	79	+5	0.48	3		8.71	-4.38	43	1743	+152
West Central(4)												
Greencastle	91	65	78	+3	1.98	3		17.71	+1.47	36	1728	-90
Perrysville	93	65	79	+6	1.59	3	83	12.08	-3.53	35	1913	+211
Spencer_Ag	91	66	78	+4	1.92	3		16.82	+0.15	41	1737	+35
Terre_Haute_AFB	94	68	80	+5	2.06	3		14.16	-1.62	38	1951	+135
W_Lafayette_6NW	93	63	77	+5	1.23	5	81	8.93	-5.42	40	1814	+210
Central (5)												
Eagle_Creek_AP	90	68	79	+3	0.46	4		13.28	-1.39	41	1980	+181
Greenfield	89	67	78	+3	2.73	5		18.87	+2.88	46	1784	+72
Indianapolis_AP	91	68	80	+4	1.00	2		13.45	-1.22	38	1944	+145
Indianapolis_SE	91	67	78	+3	1.92	3		13.42	-1.78	38	1802	+26
Tipton_Ag	90	64	76	+4	2.55	5	82	15.26	+0.80	43	1656	+106
East Central(6)												
Farmland	92	61	78	+6	0.70	3	76	10.32	-4.10	41	1677	+171
New_Castle	89	64	77	+4	1.42	3		15.83	+0.04	35	1546	+6
Southwest (7)												
Evansville	94	70	81	+4	1.08	3		12.00	-3.42	34	2133	+13
Freelandville	94	68	80	+4	0.87	3		13.31	-2.62	37	2012	+131
Shoals	93	68	80	+5	1.62	4		15.99	-1.21	48	1989	+183
Stendal	95	69	81	+4	1.43	3		14.70	-2.41	35	2126	+147
Vincennes_5NE	96	69	81	+5	1.73	4	77	18.47	+2.54	41	2085	+204
South Central(8)												
Leavenworth	93	69	81	+6	1.01	3		14.42	-2.95	37	2023	+220
Oolitic	91	67	79	+5	1.06	3	83	14.23	-2.06	43	1804	+86
Tell_City	95	69	82	+5	1.44	2		15.48	-1.82	32	2240	+236
Southeast (9)												
Brookville	93	63	79	+5	1.27	3		13.16	-2.48	36	1849	+234
Milan_5NE	91	68	79	+5	1.49	4		15.21	-0.43	55	1830	+215
Scottsburg	95	66	80	+4	1.15	4		14.09	-2.01	43	1960	+96

DFN = Departure From Normal (Using 1961-90 Normals Period).

GDD = Growing Degree Days.

Precipitation (Rainfall or melted snow/ice) in inches.

Precipitation Days = Days with precip of .01 inch or more.

Air Temperatures in Degrees Fahrenheit.

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Behind the Proverbial Eight Ball (Continued)

often talked about, there is surprisingly little published research to support the importance of this stress factor in corn.

Recent Spate of Cloudy Days. I've often thought that one of the most frequent limiting factors to high yields in the eastern Corn Belt is the typically high number of excessively cloudy or simply hazy days during mid-to late summer. The remnants of Hurricane Dennis brought welcome wet relief to some Indiana cornfields, but also blanketed the Hoosier State with nearly a week of excessively cloudy days.

Relative to the solar radiation measured on 19 July (a day with few clouds and moderate humidity) at the Purdue Agronomy Research Center near W. Lafayette, the average solar "load" received from 11 – 16 July was only about half and ranged from 35% to 61% on a daily basis (PAAWS, 2005). Such decreased levels of available solar radiation significantly reduce the rate of photosynthesis. The question is whether the reduction in photosynthesis was great enough to influence the success of pollination or the survival of newly fertilized kernel embryos in fields that were at these stages of development during the cloudy weather.

Lesser or Yet To Be Determined Stresses.

Severe Drought Stress. Corn fields in drought-stricken areas that have not received significant rainfall from recent storm systems will continue to struggle, especially if the high temperatures forecast for the next week indeed occur. Fields yet to pollinate will continue to be vulnerable to severe drought stress effects. Assuming that pollination was moderately successful in earlier planted fields, the risk of significant kernel abortion is high during first two weeks after end of pollination. Soil moisture deficits that continue to linger well into the grain filling period increase the risk of overall lower kernel dry weight and lower yield.

Silk Clipping by WCRW Beetles. Scattered reports of aggressive silk clipping in some fields can obviously interfere significantly with the success of pollination. Early planted fields by and large are finished with pollination, so are not at risk any longer. Later planted fields, including those replanted at late dates, should continue to be monitored for severity and timing of silk clipping insects (Obermeyer et al. 2005a).

Leaf Diseases. The remnants of Hurricane Dennis not only brought welcome precipitation to some areas of the state, but also foggy, misty, and otherwise high humidity weather that can be conducive for the development of a number of corn leaf

diseases. For some growers, memories of last year's incidence of northern corn leaf blight are still painfully fresh. Few reports have yet been received on this yet, but the "time is ripe".

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