



Indiana Crop & Weather Report

INDIANA AGRICULTURAL STATISTICS
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CROP REPORT FOR WEEK ENDING JUNE 25

Rain halted fieldwork in most areas of the State. Some areas received heavy amounts causing ponding and flooding in low lying areas of fields, according to the Indiana Agricultural Statistics Service. Major activities were harvesting wheat, cutting and baling hay, cleaning up and equipment repair, side dressing corn, planting soybeans and post herbicide applications. Weeds remain a problem in many soybean fields.

CORN AND SOYBEANS

Corn **condition** improved and is rated 85 percent good to excellent compared with 80 percent last year at this time. Corn continues to make good growth. Planting of double crop **soybean** acreage is underway in southern areas. Soybean **condition** improved and is rated 67 percent good to excellent compared with 76 percent last year. By area, the soybean crop is 99 percent emerged in the north, 100 percent emerged in the central and 96 percent emerged in the south.

WINTER WHEAT

Winter wheat **harvest** made some progress in southern and central areas. Nineteen percent is harvested compared with 29 percent last year at this time and 14 percent for the 5-year average. Winter wheat **condition** is rated 72 percent good to excellent compared with 82 percent at this time last year.

OTHER CROPS

Pasture condition is rated 19 percent excellent, 50 percent good, 24 percent fair, 6 percent poor and 1 percent very poor. Transplanting of **tobacco** is 97 percent complete compared with 93 percent last year and 74 percent for the average. First cutting of **alfalfa hay** is 98 percent complete compared with 100 percent last year, but ahead of the 84 percent for the average.

DAYS SUITABLE and SOIL MOISTURE

For the week ending Friday, 2.3 days were rated **suitable for fieldwork**. **Topsoil moisture** was rated 3 percent short, 63 percent adequate and 34 percent surplus. **Subsoil moisture** was rated 4 percent very short, 19 percent short, 64 percent adequate and 13 percent surplus.

CROP PROGRESS

Crop	This Week	Last Week	Last Year	5-Year Avg
	Percent			
Wheat Harvested	19	10	29	14
Soybeans Emerged	99	97	100	NA
Soybeans Blooming	10	NA	6	1
Alfalfa, First Cutting	98	93	100	84
Tobacco Plants Set	97	92	93	74

CROP CONDITION

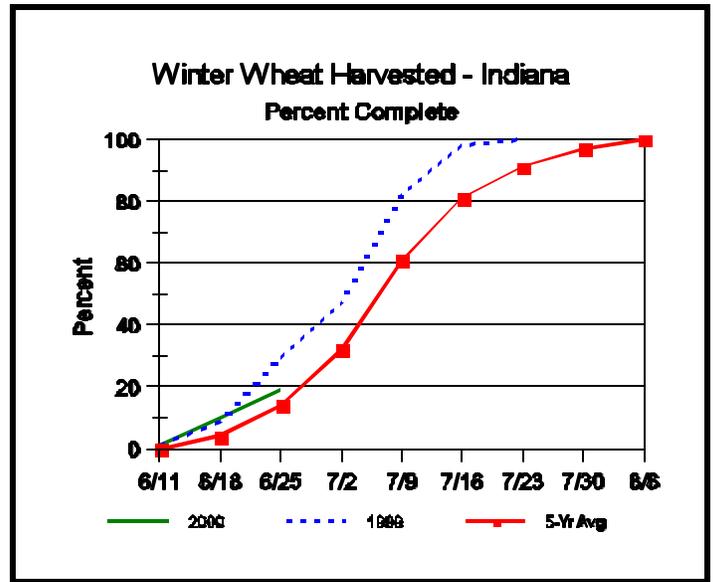
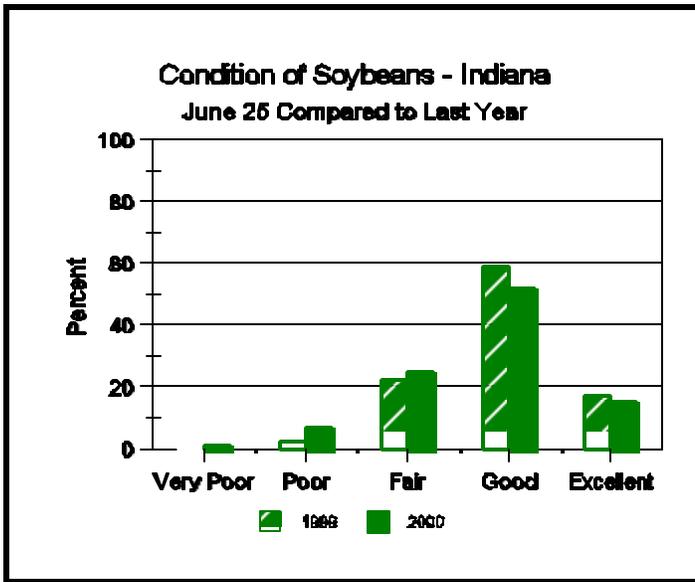
Crop	Very Poor	Poor	Fair	Good	Excellent
	Percent				
Corn	0	2	13	53	32
Soybeans	1	7	25	52	15
Winter Wheat 2000	2	5	21	50	22
Pasture	1	6	24	50	19

SOIL MOISTURE

	This Week	Last Week	Last Year
	Percent		
Topsoil			
Very Short	0	3	6
Short	3	13	27
Adequate	63	62	63
Surplus	34	22	4
Subsoil			
Very Short	4	7	4
Short	19	30	31
Adequate	64	55	63
Surplus	13	8	2

--Ralph W. Gann, State Statistician
--Bud Bever, Agricultural Statistician
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Crop Progress



Flooding & Ponding: How Long Can Corn Tolerate 'Wet Feet'?

Consequence of ponding dependent on crop growth stage, duration of saturated soils and temperature

Recent intense rainfall events (technically referred to as 'toad stranglers' or 'goose drownders') have caused flooding or ponding of corn fields in low-lying areas throughout the state. Other fields, while not technically flooded, have nonetheless been saturated for lengthy periods of time. The oxygen supply in the soil is depleted after about 48 hours in a flooded soil. Without oxygen, the plant cannot perform critical life sustaining functions; e.g., nutrient and water uptake is impaired, root growth is inhibited, etc.

How long can corn tolerate 'wet feet' before dying? If it survives, what other consequences of 'wet feet' can develop?

The growth stage of a corn crop greatly influences whether ponding or saturated soils kills, severely stunts or mildly stunts the corn plants. Plants younger than V6 are susceptible to damage for two reasons.

First of all, the growing point in such young corn is at or below the soil surface and therefore is also subject to the stress of oxygen-depleted conditions. Once the growing point is above the water level the likelihood for survival improves greatly.

Secondly, plants younger than V6 are in the process of trying to successfully establish a vigorous root system. Stunting or death of roots by oxygen-depletion can be a major stress for a plant that is not yet fully established.

Prior to leaf stage V6 (six-leaf stage as measured by visible leaf collars), corn can survive only two to four days of flooded conditions. If temperatures are warm during flooding (greater than 77°F) such young plants may not survive 24 hours. Cooler temperatures prolong survival.

If flooding in corn is less than 48 hours, crop injury should be limited. To confirm plant survival, check the color of the growing point (it should be white and cream colored, while a darkening or softening usually precedes plant death) and look for new leaf growth three to five days after water drains from the field.

Plants older than V6 will tolerate ponding or saturated soils longer for essentially the opposite reasons. As plants develop beyond V6, rapid stalk elongation elevates the growing point region above the soil surface and, thus, away from the direct stress of flooded soils. Secondly, an older crop's root system will simply be larger and consequently the crop can tolerate a certain amount of root death without dying or dramatic stunting.

(Continued on Page 4.)

Weather Data

Week ending Sunday June 25, 2000

Station	Past Week Weather Summary Data							Accumulation				
	Air Temperature				Precip.		Avg 4 in Soil Temp	April 1, 2000 thru June 25, 2000				
	Hi	Lo	Avg	DFN	Total	Days		Precipitation		GDD Base 50°F		
							Total	DFN	Days	Total	DFN	
Northwest (1)												
Valparaiso_Ag	85	55	71	-1	3.86	5		17.79	+6.43	46	890	-8
Wanatah	86	54	70	-1	4.21	3	74	15.29	+4.57	37	887	+42
Wheatfield	87	57	71	+1	4.42	3		14.89	+4.26	34	946	+70
Winamac	86	55	70	-2	1.85	3	75	12.38	+1.67	32	942	+9
North Central (2)												
Logansport	89	56	71	-1	2.60	4		12.07	+1.72	40	966	+24
Plymouth	85	55	69	-3	3.02	4		14.40	+3.22	40	859	-116
South_Bend	83	53	70	-1	1.93	3		13.97	+3.50	42	907	+30
Young_America	86	53	71	-2	3.81	4		13.53	+3.18	36	1046	+104
Northeast (3)												
Bluffton	84	53	70	-2	1.38	4	68	12.97	+2.09	38	995	+27
Fort_Wayne	84	53	70	-3	2.66	3		15.01	+5.19	37	971	+46
West Central (4)												
Crawfordsville	87	56	72	-2	2.43	4	75	12.02	+0.69	34	961	-96
Perrysville	86	57	72	-2	3.71	4	75	13.71	+2.28	36	1047	+27
Terre_Haute_Ag	91	58	75	+2	2.94	4	75	16.37	+5.10	36	1229	+128
W_Lafayette_6NW	88	53	72	+0	3.37	4	70	12.35	+1.67	36	1034	+85
Central (5)												
Castleton	86	56	72	-2	1.60	5		15.18	+4.38	45	1084	+20
Greenfield	87	55	72	-1	0.97	3		16.85	+5.69	41	1093	+70
Greensburg	88	58	73	+1	1.86	5		15.94	+4.12	45	1133	+116
Indianapolis_AP	87	58	73	-1	0.99	3		13.78	+3.24	35	1157	+67
Indianapolis_SE	87	56	71	-3	1.33	4		13.90	+3.10	34	1085	+21
Tipton_Ag	85	51	68	-4	2.35	4	70	11.65	+1.05	35	929	+23
East Central (6)												
Farmland	86	51	70	-2	1.00	4	68	14.93	+4.08	41	1001	+128
New_Castle	83	53	68	-4	0.99	5		14.39	+2.62	39	860	-36
Southwest (7)												
Dubois_Ag	90	62	75	+2	0.78	4	79	11.68	-0.86	41	1266	+147
Evansville	89	61	75	-2	0.89	6		9.15	-2.49	36	1373	+47
Freelandville	89	60	74	-1	2.00	3		12.79	+0.81	31	1219	+70
Shoals	89	60	73	-1	0.79	3		15.44	+2.74	40	1155	+55
Vincennes_5NE	88	60	74	-1	2.33	3	70	14.60	+2.74	37	1199	+50
South Central (8)												
Bloomington	89	55	73	-2	1.53	3		13.87	+2.30	34	1124	+6
Tell_City	89	65	75	+0	1.43	5		12.84	-0.13	33	1307	+67
Southeast (9)												
Scottsburg	88	64	74	+0	1.31	6		14.73	+3.02	32	1256	+115

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

GDD = Growing Degree Days.

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

Precipitation Days = Days with precipitation of 0.01 inch or more.

Air Temperatures in Degrees Fahrenheit.

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Flooding & Ponding: How Long Can Corn Tolerate 'Wet Feet'? (continued)

Nonetheless, extended periods of saturated soils plus warm temperatures will take their toll on the overall vigor of the crop. Some root death will occur and new root growth will be stunted until the soil dries to acceptable moisture contents. As a result, plants may be subject to greater injury during a subsequently dry summer because root systems are not sufficiently developed to access available subsoil water.

Concomitant (I found a new word in the dictionary!) with the direct stress of saturated soils on a corn crop, flooding and ponding can also cause losses of soil nitrogen through denitrification and leaching of nitrate N. Significant loss of soil N will result in nitrogen deficiencies in the corn crop that may cause additional yield loss. The Purdue reference cited below offers guidelines in estimating the amount of nitrogen loss due to saturated soils and making decisions on application of additional nitrogen fertilizer to fields once ponded.

Certain disease problems which may become greater risks due to flooding and cool temperatures are corn smut and crazy top. The fungus that causes crazy top depends on saturated soil conditions to infect corn seedlings. There is limited hybrid resistance to these diseases and

predicting damage is difficult until later in the growing season.

Other flooding/ponding on-line references:

Hail and Flooding Damage in Corn (Univ. of Illinois,1999)
<http://spectre.ag.uiuc.edu/cespubs/pest/articles/199913h.html>

Effects of Flooding and Ponding on Corn (AGF-118-95)(Ohio State University)
<http://www.ag.ohio-state.edu/~ohioline/agf-fact/0118.html>

Genetic Help on the Way for Flood-Prone Corn (USDA-ARS, 1999)
<http://www.ars.usda.gov/is/pr/1999/990426.htm>

Corn survival in wet conditions (Iowa State Univ.,1999)
<http://www.ent.iastate.edu/ipm/icm/1999/5-24-1999/wetcorn.html>

Predicting Early Season N Loss (Purdue Univ., 1998)
<http://www.kingcorn.org/news/articles.98/smb9802.html>

Don't forget, this and other timely information about corn can be viewed at the Chat 'n Chew Café on the World Wide Web at < <http://www.kingcorn.org/chatchew.htm> >. For other information about corn, take a look at the Corn Growers' Guidebook on the World Wide Web at < <http://www.kingcorn.org/> >.

– Bob Nielsen, Purdue University, Agronomy Department

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