Indiana Crop & Weather Report

INDIANA AGRICULTURAL STATISTICS
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Released: Monday, 3PM | August 27, 2001 | Vol. 51, #34 | West Lafayette, IN 47907

CROP REPORT FOR WEEK ENDING AUGUST 26

AGRICULTURAL SUMMARY

Farmers welcomed the rain last week. This will help pod fill for soybeans and grain fill in later maturing corn fields. Heavy rain, strong winds and hail occurred in isolated areas. Corn plants are advancing toward maturity and soybean plants are turning color in some fields. Silage harvest continued and corn harvest has started in a few fields in southwestern Indiana.

FIELD CROPS REPORT

There were 4.7 **days suitable for fieldwork**. Corn **condition** improved and is rated 72 percent good to excellent compared with 66 percent last week and 79 percent last year at this time. Thirteen percent of the corn acreage is **mature** compared with 8 percent last year and 5 percent for the average. Seventy-one percent of the corn acreage is in the **dent** stage compared with 65 percent last year and 43 percent for the 5-year average. By area, 60 percent of the corn acreage is in the dent stage in the north, 76 percent in the central regions and 83 percent in the south. Soybean **condition** improved and is rated 67 percent good to excellent compared with 64 percent last week and 68 percent last year. Eight percent of the soybean acreage is **shedding leaves** compared with 9 percent last year and 5 percent for the average. Ninety-nine percent of the soybean acreage is **setting pods** compared with 97 percent last year and 89 percent for the average. Other activities during the week included, preparing equipment for the fall harvest, baling hay, cleaning grain bins and care of livestock.

LIVESTOCK, PASTURE AND RANGE REPORT

Pasture condition is rated 4 percent excellent, 36 percent good, 33 percent fair, 20 percent poor and 7 percent very poor. Pastures have improved. Third cutting of **alfalfa** hay is 92 percent complete compared with 84 percent last year. **Tobacco** harvest is 25 percent complete compared with 20 percent for the average. Livestock are in mostly good condition.

CROP PROGRESS TABLE

Crop	This Week	Last Week	Last Year	5-Year Avg
	Percent			
Corn Dough	97	93	97	85
Corn Dent	71	50	65	43
Corn Mature	13	NA	8	5
Soybeans Podding	99	98	97	89
Soybeans Shedding Lv	8	3	9	5
Alfalfa Third Cutting	92	84	84	NA

CROP CONDITION TABLE

Crop	Very Poor	Poor	Fair	Good	Excel-lent
			Percent		
Corn	2	6	20	53	19
Soybeans	2	7	24	51	16
Pasture	7	20	33	36	4

SOIL MOISTURE & DAYS SUITABLE FOR FIELDWORK TABLE

	This Week	Last Week	Last Year
		Percent	
Topsoil			
Very Short	4	13	4
Short	19	37	15
Adequate	71	48	69
Surplus	6	2	12
Subsoil			
Very Short	11	14	8
Short	27	37	21
Adequate	59	48	63
Surplus	3	1	8
Days Suitable	4.7	6.2	5.2

CONTACT INFORMATION

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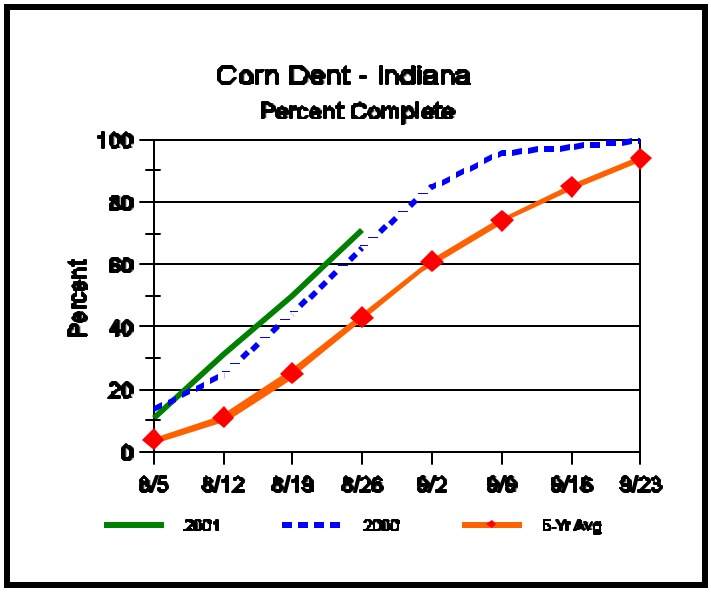
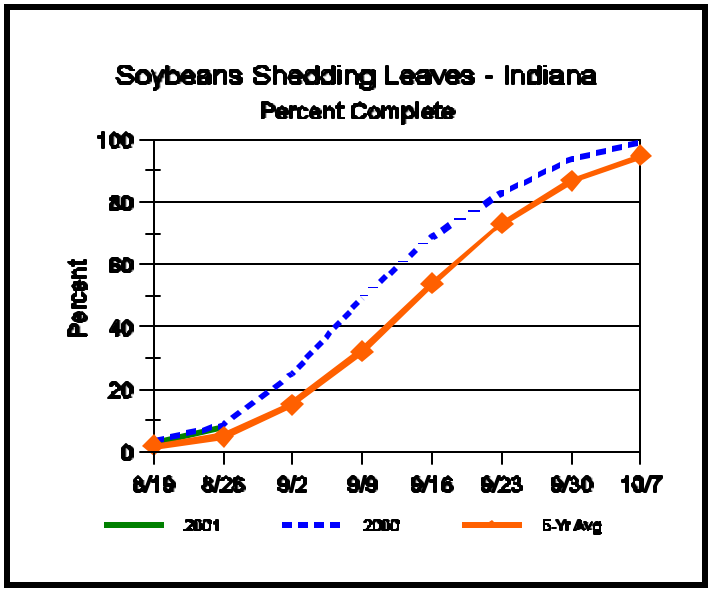
http://www.nass.usda.gov/in/index.htm

Crop Progress





Other Agricultural Comments And News

Sexual Dysfunction in the Corn Field

- Pollination failure, especially on ear tips, is common in some fields
- Kernel abortion has also occurred in some fields
- Scattered kernel set due to pollination failure and kernel abortion is common in some fields
- Causes of sexual dysfunction are multiple

Déjà vu or serendipity? Several weeks ago I shared with readers the ins and outs of the corn pollination process (P&C Newsletter, 29 July) and the ways in which the pollination process or subsequent grain filling period could go wrong (P&C Newsletter, 11 Aug). Since that time, quite a few reports have come in describing pollination or grain filling problems in fields around the state.

For the record, let's remember that pollination failure in corn is caused by either lack of viable pollen, failure of silks to emerge or non-receptive silks. Kernel abortion is most likely to occur early in the kernel development process when photosynthesis is restricted (cloudy days, leaf disease, hail damage, severe N deficiency) or when photosynthate availability to the kernels is limited (excessively warm nights, competition with older kernels).

There seems to be a perception that one or two hybrids are especially affected this year. This may not be correct; especially if folks are concentrating on walking fields of those hybrids and ignoring fields of other hybrids. Indeed, I have observed serious tip fill problems and severely scattered kernel set in more than one hybrid and from more than one seed company.

Many fields exhibit some degree of pollination failure or minor kernel abortion near the tip of the ears. Typically, one finds one to two inches of barren cob. The bad news is that the yield loss is about five bushels for every absent 'ring' of kernels around the cob. The good news is that ear length potential this year was often quite exceptional owing to the generally favorable growing conditions prior to flowering.

In such fields, ear length potential was so long that the tip silks likely emerged after pollen shed was complete. The number of successfully developing kernels in these affected fields is still 'normal' (from 30 to 35 kernels per row), even though one or two inches of the ear tip are barren. So, count your kernels before you get all bent out of shape with the poor tip fill in your fields.

In some fields, the poor tip fill includes some number of aborted kernels in addition to simply blank portions of cob. Kernel abortion can be caused by any number of stresses, including excessively warm nights (low to mid -70's) during silking or severe moisture deficits. Some areas experienced several days of heavy overcast clouds during or shortly after the pollination process. Such excessive shading or lack of intense sunlight soon after fertilization of the ovary occurs can easily abort kernels. Instances of all three climatic conditions occurred in areas throughout the state during pollination. The cause of the abortion revolves around a limited photosynthate supply to the younger developing kernels.

Unfortunately, the tip fill problems in other fields are not related to exceptionally long ears or simply to warm nights or limited photosynthate supply. Harvestable kernels per row of ears in some fields sometimes number only 15 to 20. Moreover, varying degrees and frequencies of severely scattered kernel set also exist in many fields.

In the fields I've walked, the more severe kernel set problems are usually associated with significant levels of clipped silks. In most cases, it is unclear whether corn rootworm (CRW) or Japanese beetles were the culprits, although goose-necked

(Continued on Page 4)

Weather Information Table

Week ending Sunday August 26, 2001

Station	Past Week Weather Summary Data							Accumulation				
								April 1, 2001 thru August 26, 2001				
	Air Temperature				Precip.		Avg 4 in Soil	Precipitation		GDD Base 50°F		
	Hi	Lo	Avg	DFN	Total	Days	Temp	Total	DFN	Days	Total	DFN
Northwest (1)												
Valparaiso_Ag	85	55	72	+3	0.88	5		17.54	-1.65	70	2500	+258
Wanatah	80	49	67	-3	3.73	5	75	21.40	+2.69	68	2302	+156
Wheatfield	89	54	72	+4	1.61	4		18.00	-0.25	64	2495	+296
Winamac	88	54	71	+3	2.32	5	73	20.76	+2.25	66	2474	+208
North Central(2)												
Logansport	94	55	71	+0	3.15	3		26.10	+8.40	68	2504	+177
Plymouth	86	52	70	-1	1.04	5		19.63	+0.89	65	2343	-31
South_Bend	85	55	72	+3	1.91	4		19.09	+1.05	62	2486	+255
Young_America	88	52	71	+1	2.81	3		22.27	+4.57	60	2551	+224
Northeast (3)												
Bluffton	83	53	70	-1	2.30	3	71	18.84	+1.06	65	2525	+137
Fort_Wayne	82	52	70	-1	2.51	4		21.58	+4.86	63	2490	+160
West Central (4)												
Crawfordsville	90	50	70	-2	1.38	4	73	18.56	-1.26	62	2461	-36
Perrysville	90	52	72	+2	1.07	5	77	16.06	-3.88	58	2648	+201
Terre_Haute_Ag	94	51	72	-1	0.38	3	76	23.84	+3.99	57	2868	+260
W_Lafayette_6NW	91	52	71	+2	1.87	4	74	15.80	-2.72	58	2628	+309
Central (5)												
Castleton	89	54	72	-1	0.59	3		21.79	+2.36	59	2709	+138
Greenfield	90	51	74	+4	1.77	4		24.54	+3.89	63	2854	+376
Greensburg	87	54	72	+2	0.89	6		22.14	+1.99	66	2816	+399
Indianapolis_AP	92	55	74	+2	1.03	3		20.52	+1.75	51	2862	+275
Indianapolis_SE	90	52	72	-1	1.25	4		19.27	-0.16	59	2623	+52
Tipton_Ag	88	50	70	+1	1.47	5	68	17.77	-1.05	54	2425	+172
East Central (6)												
Farmland	84	48	69	+0	3.71	6	69	22.74	+4.48	63	2462	+262
New_Castle	89	49	69	-2	1.23	2		27.20	+7.28	61	2221	-31
Southwest (7)												
Dubois_Ag	93	53	74	+2	0.44	3	78	19.63	-1.99	56	2995	+370
Evansville	92	58	76	+1	2.44	3		20.64	+1.71	57	3247	+242
Freelandville	91	57	73	+1	1.92	2		19.55	-0.20	45	2972	+278
Shoals	91	54	73	+1	0.42	2		20.18	-1.26	55	2828	+223
Vincennes_5NE	95	57	75	+3	1.57	3	73	16.37	-3.38	42	3094	+400
South Central(8)												
Bloomington	91	55	73	+1	1.32	4		19.75	-0.40	58	2830	+187
Tell_City	93	59	77	+3	0.35	3		15.81	-5.87	41	3174	+299
Southeast (9)												
Scottsburg	90	55	74	+1	0.97	4		20.97	+0.61	70	2931	+251

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.

The above weather information is provided by AWIS, Inc.
For detailed ag weather forecasts and data visit the AWIS home page at
www.awis.com or call toll free at 1-888-798-9955.

plants in many of these fields were a good indication that serious CRW larvae feeding injury to roots was a problem earlier in the season.

The kernel set problems seem to be most prevalent in fields where uneven plant development occurred due to uneven emergence or uneven seedling growth. In the fields I've walked, severe silk clipping and resulting kernel set problems were most evident in delayed plants than in 'normally' developing plants. Normal and delayed plants side-by-side typically exhibit ears that are night and day different in the success of pollination. Plants in fields with more uniform plant development exhibit less silk clipping in general and fewer problems with severe scattered kernel set.

Uneven stands or plant development can be attributed to a) uneven seedling emergence, b) injury from the Mother's Day frost event, c) uneven plant development catalyzed by late May/early June cold snap, d) injury from postemergence herbicide applications, e) chilling injury from the mid-June cold snap, f) chilling injury from the early July cold snap, or g) injury from CRW larvae root feeding. Any combination of the above stresses could have set back plant development unevenly throughout a field. The delayed plants would silk later and be more attractive to CRW or Japanese beetles than would 'normal' plants.

The severe tip fill problems or scattered kernel set associated with insect silk clipping are interesting because few people, including yours truly, thought it was much of an issue back in July when fields were pollinating. Maybe we were simply avoiding corn fields during the heat and humidity and did not notice the problem.

There are also indication that earlier planted fields and earlier maturity hybrids are less affected than later planted fields or later maturity hybrids. My own planting date study at the Purdue Agronomy Farm illustrates the worst-case scenario for CRW / Japanese beetle silk clipping in late-planted corn. Over many years of conducting planting date studies, I have never seen such extensive CRW beetle feeding on the silks in later-planted corn.

There are also a couple of weather-related issues that may have played a role in setting up the corn plant for pollination failure. Above normal temperatures experienced in some areas during pollen shed could have caused faster pollen shed completion at the expense of later silk emergence from tip ovules of long ears or delayed silk emergence due to excessive CRW / Japanese beetle silk damage.

An admittedly farther stretch of imagination suggests that it is possible that the one or two cold nights in early July (remember the frost injury in low-lying muck fields) interfered with normal pollen maturation, resulting in less total pollen or some frequency of unviable or defective pollen. Similarly, the late May/early June cold snap may have interfered with initiation of tassel branches and spikelets due to the timing of the chilling injury with the initiation of tassels occurring in corn that was at growth stages V5-V6. Interference with either tassel that was at development or pollen maturation would have left the corn plant more vulnerable to the effects of severe silk clipping by insects.

Bob Nielsen, Dept. of Agronomy, Purdue University. This article also contains pictures, which can be viewed at: http://www.entm.purdue.edu/entomology/ext/targets/p&c/P&C2001/P&C23_2001.pdf, pg. 3.

The INDIANA CROP WEATHER REPORT (USPS 675-770), (ISSN 0442-817X) is issued weekly April through November by the Indiana Agricultural Statistics Service, Purdue University, 1148 AgAd Bldg, Rm 223, West Lafayette IN 47907-1148. Second Class postage paid at Lafayette IN. For information on subscribing, send request to above address. POSTMASTER: Send address change to the Indiana Agricultural Statistics Service, Purdue University, 1148 AgAd Bldg, Rm 223, West Lafayette IN 47907-1148.