Purdue Cooperative Extension Service

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In This Issue

Insects, Mites, And Nematodes

Are Field Crop Insects Singing in the Rain? – (*John Obermeyer, Christian Krupke, and Larry Bledsoe*)

- Cool temperatures slow down both plant growth and insect feeding
- Insects will rebound faster than the crop if temperatures warm without benefit of sunshine
- Soil insects rarely drown, especially in cooler temperatures

Throughout the weekend of wet, cool conditions, with forecasts of more to come, one may wonder what effect this has on insect pests and their damage to field crops. This question was raised by some inquisitive crop consultants monitoring alfalfa fields approaching treatment levels for weevil feeding just as the inclement weather set-in. Needless to say, there will be no hay cutting or spraying for days to come.

As a (general) rule of thumb, insects are relatively inactive at temperatures below 50ºF. The good news is that as an insect's metabolism is reduced so does its development and feeding. So these unseasonably low temperatures may have reduced the amount of early insect damage to our crops. The bad news is that the insects are not going to go away and the crops continue to grow slowly. With lack of sunshine, crops cannot "outgrow" insect feeding.

Although rain remains in the forecast for the next several days, temperatures should be trending upward. Insect feeding will resume as temperatures rise. This period of warmer temperatures, yet lacking in sunlight, will increase the time that below and above ground insects may come in contact with a slow-growing seedlings. Normally minor leaf and/or root feeding could become lethal as damaged plants continue to lag behind in development.

Drowning of below ground insects requires the total absence of air in the soil. Even saturated soils contain small amount of oxygen. Coupled with the fact that cool temperatures already reduce the insect's metabolism, grubs, wireworms, etc., it doesn't take much soil pore space for these insects to survive.

Insect epizootics (beneficial diseases) are not likely to occur at this time of the year. Typically temperatures in the 80's coupled with high humidity are necessary to promote and spread these naturally occurring soil pathogens. It will likely be mid-July by the time we experience those conditions.

With the plethora of above and below ground insects desiring to feed on field crops this time of year, we strongly recommend strapping on the boots and walking these recently planted and seedling crops for stand losses. When this weather finally breaks, fields should be prioritized for insect and/or weed control and replanting where necessary. Happy scouting!

Below ground insects will survive longer than corn seedlings in saturated soils

What About Slugs? – (*Christian Krupke, John Obermeyer, and Larry Bledsoe*)

- Wet weather will not change slug feeding much, if at all
- Non-growing young plants are vulnerable
- Most slugs are still too small to cause significant damage

The wet weather got us thinking about another, noninsect, pest of field crops – the lowly slug. Slugs, like all mollusks, need a certain amount of humidity to thrive and seem to be more apparent during periods of heavy rainfall. When it comes to slugs, we are fortunate to have an expert in the Midwest: OSU extension entomologist, the venerable Dr. Ron Hammond. Dr. Hammond tells us that although slugs may seem to "like" this weather, damage to young corn and bean plants is more likely due to slug movement patterns – the main problem (as with many soil insect pests) is that the encounter rates between slugs and non-growing plant tissue are greater during these wet and cool periods, and that can lead to higher levels of damage which the plant can compensate for by growing. Dr. Hammond tells us that slugs are also not yet at their peak size for causing damage, which is another silver lining in this cloudy period. But stay tuned – at the least these weather patterns may be encouraging young sluglets to move and feed more readily than typical mid-May conditions.

Early slug damage to corn leaf

Replanting Corn and Soil Insecticide Restrictions - (*John Obermeyer, Christian Krupke, and Larry Bledsoe*)

- Rootworm eggs don't normally drown
- Most soil insecticides have one-time use rate restrictions
- Amount of insecticide remaining after ponding is difficult to determine
- Carefully weigh the economic risk/benefit of reapplying soil insecticides

Some fields received heavy rains and subsequent showers while this lingering low circled over the Midwest for nearly a week. Because areas of fields could be saturated for an extended period of time, it is possible that these areas will need to be replanted (see Bob Nielsen's articles in *Agronomy Tips*). Soil insecticides have restrictions when replanting fields previously treated.

Should you reapply a soil insecticide if replanting? It should be understood that even if an area or whole field has ponded, the preexisting rootworm threat has not necessarily diminished. Overwintering rootworm eggs can survive flooded conditions for long periods of time in the spring, however once they hatch in late May or early June, larvae cannot.

Can you reapply a soil insecticide when replanting? Soil insecticides have restrictions as to the amount of product that can be applied per season as stated on the label. Because the label is the law, this is not to be exceeded. Of all the soil insecticides, Lorsban 15G is the only one you can legally reapply, that is if you used the 8-ounce rate both times (16-ounce restriction). The bottom line is that, if you choose to reapply a soil insecticide during replanting, it should be a different active ingredient from what you used the first time (exception is Lorsban 15G). Remember, your granular insecticide boxes will have to be recalibrated for the new product since all products are formulated differently.

How about replanting into existing rows? If areas of the field are drowned out, then planting into, or as close to, the original row is a possibility. The potency of the original soil insecticide may or may not provide sufficient control of rootworm larvae. How much of the original insecticide remains is at best a guess. Flooding can cause physical movement, leaching, hydrolysis, and hasten degradation of the insecticide. Much of this is dependent upon how long the water stands in the field, how fast the water moves out of the field or through the soil profile, and soil temperatures. So, if you're "feeling lucky," relying on the original insecticide prevents another $15+ investment in replanting costs.

Nematode updates: What Should We Expect From Nematodes This Spring? – *(Jamal Faghihi, Christian Krupke and Virginia Ferris)*

We are experiencing a wet and cool spring around here. If you are in a similar situation and farm on sandy soils, be on the lookout for corn nematode. These are ideal conditions for needle nematode to cause damage in corn. Young corn seedlings are vulnerable to these tiny nematodes as they aggregate around roots and suck the juices out of the corn root using hollow needle-type mouthparts. If these conditions persist, we anticipate encountering problems from needle nematode on corn. Nematode activity usually starts when soil temperatures reach 50°F. Early-planted corn will already have produced abundant roots for needle nematodes to feed on. If you have noticed patches of stunted young corn seedlings in sandy soil, needle nematode might be the problem. In this case, you may wish to send the entire root system with adjacent soil to the Nematology Laboratory (see address below) at Purdue University for analysis, to rule out the nematodes. Samples must be placed in well-labeled plastic bags, kept cool and prevented from drying. The charge for this service is $10/sample.

Regarding soybean cyst nematode (SCN), high temperatures earlier in the spring caused some growers to plant soybeans early when nematodes were ready to attack. The nematodes will come out of their cysts and move in the soil even if soybeans are not yet present. As soon as susceptible soybean seeds have germinated, nematodes are prepared to invade the young soybean seedlings. As the soil temperature moves upward, we anticipate heavy damage to susceptible soybean from SCN, especially in sandier soils. The potential for damage by SCN will intensify if we do not receive adequate rainfall for the rest of the season. If you have not sampled for SCN in the past or used resistant soybean cultivars for several years, you need to sample for this nematode. As we said before, the Indiana Soybean Board is no longer paying the $10 processing fee for the SCN testing and we have noticed a major drop in the number of samples received in our laboratory. We need to emphasize the importance of continuing to sample for SCN, as this is the only real way to monitor the SCN populations in your field. You can sample for SCN anytime of the year regardless of the current or previous crops. Soil samples taken from a depth of 4-6 inches can be sent to our laboratory for analysis. For additional information on sampling for SCN see E-210-W publication <http://www.entm.purdue.edu/Entomology/ext/targets/e-series/EseriesPDF/E-210.pdf>.

If you have any questions about these or any other kinds of nematode, you can call 765-494-5901 or send an email to jamal@purdue.edu. Soil samples for nematode analysis can be sent to: Nematology laboratory, Purdue University, Department of Entomology, Smith Hall, 901 W. State Street, West Lafayette, IN 47907-2089.

Black Light Trap Catch Report - (*John Obermeyer*)

County/Cooperator	5/02/06 - 5/08/06							5/09/06 - 5/15/06						
	VC	BCW	ECB	SWCB	CEW	FAW	AW	VC	BCW	ECB	SWCB	CEW	FAW	AW
Dubois/SIPAC Ag Center	0	1	0	0	0	0	4	0	0	0	0	0	0	1
Jennings/SEPAC Ag Center	0	1	0	0	0	0	4	0	0	0	0	0	0	1
Knox/SWPAC Ag Center	0	6	0	0	0	0	9	0	0	0	0	0	0	5
LaPorte/Pinney Ag Center	0	0	0	0	0	0	36	0	2	0	0	0	0	28
Lawrence/Feldun Ag Center	1	3	0	0	0	0	66							
Randolph/Davis Ag Center	0	2	0	0	0	0	58	0	1	0	0	0	0	22
Tippecanoe/TPAC Ag Center	0	0	0	0	0	0	39	0	1	0	0	0	0	2
Whitley/NEPAC Ag Center	0	1	0	0	0	0	104	0	0	0	0	0	0	108

VC = Variegated Cutworm, BCW = Black Cutworm, ECB = European Corn Borer, SWCB = Southwestern Corn Borer, CEW = Corn Earworm, FAW = Fall Armyworm, AW = Armyworm

Weeds

Weed Management Considerations in Corn in a Wet Spring – (*Bill Johnson and Glenn Nice*)

The recent wet weather has created some challenging weed management situations for corn. Most of the corn acres in Indiana utilize soil-applied, preemergence herbicides and some utilize both soil-applied and postemergence herbicide combinations. In addition, because of rapid adoption of Roundup Ready corn, many growers have reduced or eliminated the use of soil applied atrazine or atrazine premix herbicides. In certain parts of Indiana and other areas in the Midwest, corn was planted at a rate which exceeded the ability of custom and private applicators to spray preemergence herbicides. Then the rains came. The result is a lot of acres with emerged corn and no preemergence herbicides applied and fields that were sprayed but have received 3 or more inches of rain within the last week. Below, I have listed various scenarios and some things to consider for each scenario.

Scenario # 1

Corn and weeds have emerged, but the field has ***not*** been sprayed with soil applied, preemergence herbicides.

a. Do not spray Balance Pro, Princep to emerged corn. Balance Pro will cause injury to emerged corn. Princep is not labeled to be applied to emerged corn.
b. You can apply many of the soil-applied atrazine premixes (Bicep II Magnum, Degree Xtra/Harness Xtra/Keystone/Fultime, Guardsman Max, Lumax/Lexar, others) to emerged corn. If weeds have emerged, but grass weeds are 1 inch or less and broadleaf weeds less than 4 inches in height, simply add crop oil concentrate to the atrazine premix to burn down the emerged weeds unless you have triazine-resistant lambsquarter, velvetleaf or jimsonweed. Consider using lower rates of the atrazine premixes, such as two thirds to three fourths of the label rate since the length of residual control needed is less now than if the product was applied in mid to late April
c. If grass weeds are larger than 1 inch tall, Option/Equip, Steadfast, Accent, Resolve, Lightning (only on Clearfield corn), glyphosate (only on Roundup Ready corn), and Liberty (only on Liberty Link corn) can be added to most of the soil applied grass:atrazine premix products. Be sure to consult the label for appropriate adjuvants with these mixtures.
d. If broadleaf weeds are in excess of 4 inches, there are several herbicides that can be added to an atrazine premix. Be cautious about adding 2,4-D + crop oil + nitrogen solutions to an atrazine premix and applying it to spike stage corn. I have observed rather severe injury in these situations. If 2,4-D is added, wait to apply this mixture until the corn is in the V1 to V2 growth stage. Consider using a dicamba product (Banvel, Clarity, Sterling, others) since it will be a bit safer to corn than 2,4-D at this stage. Distinct cannot be applied until corn is at least 4 inches tall.
e. Consider switching to a total post program with Celebrity Plus, Exceed, Equip, Northstar, Resolve, Spirit, or Steadfast/Steadfast ATZ herbicides. Obviously this is also a possibility with Liberty in Liberty Link corn, Lightning in Clearfield corn and glyphosate in Roundup Ready corn. These products are designed for this use and allow one to tankmix additional herbicides for added activity on specific weeds. Be cautious of the corn growth stage when using these products. Products containing Beacon (Exceed, Spirit, Northstar) and Distinct (Celebrity Plus) cannot be applied until corn is 4 inches tall, and cannot be applied broadcast after corn is 20 inches tall (Northstar), 24 inches tall (Celebrity Plus). Most postemergence ALS inhibiting herbicides have a V6 cutoff for postemergence, broadcast applications. Option and Equip cannot be applied until V1 and the cutoff is V6 for Option and V4 for Equip. Resolve can be applied broadcast up to 12-inch or 6-collar corn (whichever occurs first). Liberty (Liberty Link corn) can be applied broadcast to corn up to 24 inches tall or the V7 stage (whichever occurs first). Lightning (Clearfield

corn) can be applied broadcast to corn up to 20 inches tall or the V6 stage (whichever occurs first). Most of these products can be applied after the broadcast cutoff date with drop nozzles designed to keep the spray out of the corn whorl.

f. Products containing atrazine (Steadfast ATZ) cannot be applied to corn more than 12 inches tall. If the product you chose doesn't contain atrazine and corn is less than 12 inches tall, we recommend that you add atrazine at 0.75 lb ai/A to provide residual control.

g. If you switch to a total post program and have used a soil insecticide, consult the herbicide label to determine if use of a specific product is allowed after the soil insecticide. Certain insecticides will increase the possibility of crop injury with specific ALS inhibiting herbicides (Accent, Basis, Beacon, Option, Equip, Resolve, and Steadfast containing herbicides).

Scenario # 2

Corn and weeds have emerged, the field has been sprayed with soil applied, preemergence herbicides. If an atrazine, Balance, or Callisto containing herbicide was used premergence, weeds may emerge, turn white or yellow, then brown and die a few days later. If weeds emerge and don't die within a few days:

a. Use a rotary hoe to dislodge small weeds and reactivate herbicides. Weeds should be ½ inch or less in height. Operate the tool at a minimum of 6 mph. If the operation is dislodging more than 10% of the corn stand, slow down.

b. Apply appropriate postemergence herbicides based on scouting and weed species present. As mentioned above, be careful with specific products because of the potential to injure corn if not applied at the proper corn growth stage.

c. Do not exceed the application limits for atrazine. These limits include the following: on highly erodible soils, do not apply more than 1.6 lb ai/A in one application or more than 2 lb ai/A total. On soils that are not highly erodible, do not apply more than 2 lb ai/A in one application or more than 2.5 lb ai/A total.

Other general items to consider:

a. **Corn growing in wet soils will be stressed** and not able to metabolize herbicides as rapidly as it would if it were growing in drier soils. You can probably expect to see some injury symptoms from many of the soil-applied herbicides used in corn. In most cases, corn will grow out of the injury when warm temperatures and sunny days return. In addition, after applying postemergence herbicides, don't be surprised to see herbicide-related injury symptoms, even if the hybrid is resistant Roundup Ready, Liberty Link or Clearfield. Most seed companies have databases on herbicide injury potential with commonly used herbicides. Be cautious about applying specific herbicides to hybrids which have been shown to be sensitive to growth regulators (2,4-D, Clarity/Distinct), ALS inhibitors (Accent, Exceed, Option, Resolve, Spirit, Steadfast), or HPPD inhibitors (Callisto). Contact your seed representative if this information is not readily available.

b. **Adjuvant** selection is critical with postemergence herbicides. Certain tankmixes require specific adjuvants to maximize the activity of both products. Consult the label carefully to determine the appropriate adjuvant. Since corn is more sensitive to weed competition and the window to control weeds is much narrower than in soybean. You don't have time to correct mistakes.

c. **Some soil applied and postemergence insecticides slow down the corn plant's ability to metabolize herbicides** and crop injury will occur. If you are making dramatic changes to your weed control program, it pays to re-read the herbicide and insecticide labels and look for warning statements. As mentioned above, corn will be stressed more likely to show injury anyway, and the addition of an insecticide to a herbicide mixture could cause additional injury.

d. **Herbicide drift** is an issue that requires careful consideration of weather conditions before spray applications are made. Already this spring we have received a few complaints about spray drift and since there will be pressure to get a lot of acres sprayed in a short period of time, there will undoubtedly be pressure on growers and custom applicators to spray under less than ideal wind conditions. Be sure to check your sprayer set to minimize production of fine spray particles and make sure your insurance policies are up to date and comprehensive enough to cover fruit trees, ornamental plants, garden plants, hanging basket plants, corn, soybean, hardwood trees, cats, dogs, horses, little children, republicans, democrats, those unaffiliated with either party, the rich, the poor, the middle class, and the elderly. Based on the phone calls we receive here, the public is highly concerned about the consequences of drift to all of these items and individuals.

e. **Marestail escapes** from burndown herbicides are evident in southern Indiana. In some fields only glyphosate was used and since glyphosate-resistant marestail is common in southern Indiana, so it is not surprising. In other fields, tankmixes with 2,4-D are showing poor control of marestail. In some instances it is likely that a low rate (1 pt/A) was used on large plants (6 inches tall or more) and the recent wet and cold weather has slowed herbicide activity. In addition, the possibility also exists that frequent use of 2,4-D has provided selection pressure for marestail populations with more tolerance to 2,4-D. This situation is of more concern and we will be monitoring this more closely over the next couple of years. In the meantime if you have marestail populations that are missed by 2,4-D, please contact Bill Johnson. We would like to collect seed from these plants and run it through some herbicide screens to determine tolerance levels to 2,4-D. Essentially we will want seedheads from mature plants which can be collected just prior to soybean harvest.

f. **Corn yield loss due to weed interference** should be a great concern to those that did not use a soil-applied,

residual herbicide at planting. If one did not use soil-applied residual herbicides and will be relying on total postemergence systems, postemergence herbicides should be applied before summer annual weeds exceed about 3 to 4 inches in height. This corresponds to approximately 20 to 25 days after crop planting. Allowing weeds to become larger than this size results in the risk of crop yield loss due to early-season weed interference. Applying postemergence herbicides to 6 inch tall weeds results in an average yield loss of 6%, compared to earlier applications, and the losses increases with weed size. The critical period of weed control in corn occurs between 20 and 45 days (approximately) after planting. Keeping corn weed-free during this period is essential to maximizing crop yields. Total postemergence weed control programs applied at about 20 to 25 days after planting will minimize competition from weeds that emerge with the corn, but these programs should also contain residual herbicides to control weeds for another several weeks. Weeds that emerge later than about 45 days after planting should not reduce corn yield due to the ability of a well-developed corn canopy to suppress late-emerging weeds.

Specific details related to most of the comments above can be found in the 2006 Weed Control Guidelines for Indiana (WS-16) which is on the web at <http://www.btny.purdue.edu/Pubs/WS/WS-16>.

Herbicide Restrictions on Crop Rotation - (*Bill Johnson, Glenn Nice, and Thom Bauman*) - This table, from the *Weed Control Guide for Ohio and Indiana*, gives the recrop intervals for the planting of rotational crops following the application of corn and soybean herbicides. If a herbicide is not listed on the table, there are no restrictions on rotation, provided the crop on which that herbicide is applied is grown to full maturity and harvested. Refer to the following scale:

NR = No restriction, assuming that the corn or soybean crop is taken to harvest. Where the corn crop fails and soybeans will be planted within 1 to 2 months of corn herbicide application, consult the label for further precautions.

BA = Conduct a field bioassay prior to rotating to this crop; consult the label for more information. Where products containing atrazine or Princep are used, see the footnote below for precautions on rotation to soybeans and other crops. **Consult herbicide labels for precautions regarding rotation to seed corn or specialty corn.**

	Months Before Planting									
Herbicide	**Corn**	**Wheat**	**Oats**	**Alfalfa**	**Clover**		**Sugar Beets**	**Tomatoes**	**Popcorn**	**Sweet Corn**
Accent SP	NR	4	8	12	12	0.5	10/18[h]	10/18h	10	10[j]
Atrazine[a]	NR	14	21	21	21	10	21	21	NR	NR
Balance Pro	NR	4	18	10	18	6	10	18	6	6
Basis	NR	4	8	10	18	10	10	1	10	10
Beacon	14 days[i]	3	8	8	18	8	18	18	8	8
Bicep/Cinch ATZ[a]	NR	15	15	18	18	10	18	18	NR	NR
Boundary	8	4.5	12	4.5	12	NR	18	12	12	12
Buctril/atrazine[a]	NR	15	15	21	21	10	21	21	1	1
Bullet[a]	NR	15	18	18	18	10	18	18	NR	NR
Callisto	NR	4	4	10	18	10	18	18	NR	NR
Canopy EX[k]	10	4	4	10	12	1.5	30	10[b]	10	18
Celebrity Plus	NR	4	8	12	12	4	10/18[h]	10/18[h]	10	10[j]
Classic	9[n]	3	3	12[n]	12[n]	NR	30	9b[n]	9[n]	18
Command/Commit	9	12[cd]	16[cd]	16[cd]	16[cd]	NR	9	9-12[f]	9	9
Curtail	1	1	1	10.5	18	10.5[i]	6	18	10.5	10.5
Define	NR	12	12	12	12	NR	4	12	12	12
Degree	NR	4	18	18	18	9	18	18	9	9
Degree Xtra	NR	14	21	21	21	10	21	21	9	9
Equip	0.5	2	9	18	BA	9	18	BA	0.5	0.5
Exceed[p]	1	3	3	18	18	18/10[st]	18	18/10[st]	3	3
Expert[a]	NR	15	15	18	18	10	18	18	NR	NR

(Continued)

	Months Before Planting									
Herbicide	**Corn**	**Wheat**	**Oats**	**Alfalfa**	**Clover**	**Soybeans**	**Sugar Beets**	**Tomatoes**	**Popcorn**	**Sweet Corn**
Extreme	8.5	3	18	4	40	NR	40	40	18	18
Field Master[a]	NR	14	21	21	21	10	21	21	NR	9
FirstRate/Amplify	9	3	30+BA	9	30+BA	NR	30+BA	30+BA	9	18
Flexstar	10	4	4	18	18	NR	18	18	12	12
FulTime[a]	NR	15	15	18	18	10	18	18	9	9
Gangster	9	3	9	12+BA	30+BA	NR	30+BA	30+BA	9	18
Guardsman Max[a]	NR	15	18	18	18	10	18	18	18	18
Harness	NR	4	18	18	18	9	18	18	9	9
Harness Xtra[a]	NR	14	21	21	21	10	21	21	9	9
Hornet	NR	4	4	10.5	26+BA	10.5	26+BA	26+BA	10.5	18/10.5[u]
Keystone[a]	NR	15	21	21	21	10	21	21	21	21
Laddok[a]	NR	9	9	9	9	9	15	15	NR	NR
Lariat[a]	NR	15	18	18	18	10	18	18	NR	NR
Lightning	8.5	4	18	9.5	40+BA	9	40+BA	40+BA	18	18
Lumax/Lexar[a]	NR	10	10	18	18	10	18	18	NR	NR
Marksman[a]	NR	10	18	18	18	10	18	18	NR	NR
Northstar	14 days[i]	3	8	8	18	8	18	18	8	8
Option	7 days	2	2	2	2	14	days	2	2	2
Osprey	12	7 days	10	10	10	3	10	10	12	12
Peak[q]	1	NR	NR	22	22	10	22	22	10	10
Permit/Sandea	NR	3	8	9	9	10	24	8	3	3
Princep[a]	NR	14	21	21	21	10	18	18	10	10
Priority	1	2	2	12	12	9	24	12b	3	3
Prowl/Pendimax	NR	4	8	8	8	NR	12	8	8	8
Pursuit	8.5	3	18	4	40	NR	40	40	18	18
Python	NR	4	4	4	26+BA	NR	26+BA	26+BA	9	18
Radius	NR	12	12	12	12	6	10	12	6	12
Raptor	8.5	3	9	3	18	NR	18[o]	9	8.5	8.5
Reflex	10	4	4	18	18	NR	18	18	10	10
Scepter	9.5g	4	11	18	18	NR	40	18	18	18
Sencor	4	4	12	4	12	NR	18	4	4	4
Spirit[p]	1	3	3	18	18	10s	18	10	8	8
Stalwart Xtra[a]	NR	14	21	21	21	10	21	21	NR	NR
Steadfast	NR	4	8	12	12	0.5	10/18[h]	10/18[h]	10	10
Steadfast ATZ	NR	10	18	18	18	10	18	18	10	10
Stinger	NR	NR	NR	10.5	18	10.5	NR	18	10.5	10.5
Shotgun[a]	NR	14	21	21	21	10	21	21	NR	NR
Surpass/Topnotch	NR	4	18	18	18	9	18	18	9	9
Synchrony[k] (PRE)	10	4	4	10	12	NR	30	10[b]	10	18
Synchrony[k] (POST)	9[n]	3	3	12[n]	12[n]	NR	30	9[b,n]	9	18
Valor	2	2	12+BA	12+BA	12+BA	NR	12+BA	12+BA	12+BA	4
Volley	NR	4	21	21	21	10	21	21	NR	10
Volley ATZ	NR	15	21	21	21	10	21	21	NR	NR
WideMatch	NR	NR	NR	10.5	BA	10.5	4	BA	4	4
Yukon	1	2	2	9	9	9	24	8[b]	3	3

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[a]Restrictions on rotation following the application of products containing atrazine or Princep will vary, depending on the product. There are a few general guidelines to follow to reduce the potential for injury to crops planted where these products are used. Plant only corn or sorghum the year (including fall) of application. Where oats, forage legumes, or forage grasses will be planted the following spring, do not apply more than 0.8 pounds active ingredient. If more than 3 pounds active ingredient is applied, or herbicide is applied after June 10, plant only corn or sorghum the following year. Do not plant sugar beets, tobacco, or vegetable crops the year following application.
[b] Transplant tomatoes only.
[c] Do not plant in the fall of year of application or the spring of the following year.
[d] Cover crops may be planted prior to 12 months, but stand reduction may occur. Do not graze or harvest these cover crops for feed or food.
[e] Moldboard plow to a depth of 12 inches before planting sugar beets in the spring. Recrop interval to sugar beets is extended to 13 months if less than 20 inches of rain falls during the growing season of application.
[f] 9 months for transplant tomatoes; 12 months for all tomatoes.
[g] Corn can be planted 9.5 months after application if at least 15 inches of rainfall is received from 2 weeks prior to last application through November 15 of the same year. If this requirement is not met, plant only a Clearfield corn hybrid the following spring.
[h] Rotation interval for Accent is 10 months where soil pH is 6.5 or less, and 18 months where soil pH is greater than 6.5.
[i] Refer to Syngenta literature for a list of hybrids that have good tolerance to Beacon before planting.
[j] Except the sweet corn varieties “merit”, “carnival”, and “sweet success”, for which the minimum rotational interval is 15 months.
[k] For rates higher than 1 (Synchrony) or 1.1 (Canopy EX) oz/A, if composite soil pH is greater than 7.0, plant only soybeans the following year.
[m] If applied after July 1st, do not plant soybeans the season following application.
[n] If applied after August 1, extend recrop interval by 2 months.
[o] If soil pH is less than 6.2, allow 26 months to rotation of sugarbeets.
[p] If soil pH is 7.8 or greater and/or less than 12 inches of rainfall occurs within the first 5 months and/or less than 1.0 inch within the first 4 weeks following application, then only plant corn or small grain cereals the following spring. STS soybeans can be planted the following spring after a drought if Spirit was used.
[q] Read label for precautions before planting rotational crop.
[r] Allow 12 months to rotation of sweet corn if 2-2/3 pt of Command is used.
[s] Do not plant soybeans the following season if herbicide is applied after June 30.
[t] Soybeans and tomatoes should not be planted until 18 months after application north of Interstate 70, but can be planted 10 months after application south of Interstate 70. STS soybeans can be planted the following spring in areas north of Interstate 70.
[u] Only certain sweet corn varieties may be grown 10.5 months after application; check herbicide label for those varieties. Otherwise wait 18 months.

Plant Diseases

Seedling Blights – (*Gregory Shaner and Andreas Westphal*)

- Stands may be poor in soggy fields and predispose plantings to late season problems

The seemingly constant rain that has fallen on much of Indiana since the afternoon of May 10 may create problems for corn and soybean seedlings trying to emerge from waterlogged soils. Not only are soils wet, they are cool. Over the weekend, bare soil temperatures at a 4-in. depth dropped below 55°F in central and northern Indiana. This sets the stage for seedling blight. Fields sown shortly before the rains commenced are at greatest risk.

A number of common fungi can infect corn and soybean seedlings. Some of these are associated with seed itself (fungi that cause ear or seed rots); others are soil inhabitants. Many of the fungi that cause root rot are “opportunistic” pathogens. If the plant is generally healthy and growing vigorously, they don’t do much damage. Natural wounds occur where branch roots emerge, and nutrients leaching from these wounds can stimulate spores of soilborne fungi to germinate, which can lead to infection. Under good growing conditions, these wounds heal quickly, before the pathogens gain a foothold. When growing conditions are adverse--cold and wet soil, crusting, etc.--the young roots are more vulnerable to infection. Wounds do not heal quickly, nor can the plant produce new roots fast enough to offset the loss of roots to rotting. The low oxygen conditions in saturated soil favor the development of *Pythium* species, a group of fungus-like organisms that cause seedling blight. Under adverse conditions, the plant may succumb to seedling blight, also called damping-off. The seedling may be killed before it emerges from the soil, or shortly after emergence. Even if the plant survives, its growth will be slowed down and it will produce little or no grain or seed.

In fields that appear to have some problem with seedling blight, dig up plants in several areas of the field and carefully wash the roots, so they can be examined for rot. Rot symptoms may range from a pale red to pink discoloration to a much darker color, associated with a mushy cortex. Only a small portion of a root may show symptoms, but if the lesion girdles the root, the apparently healthy tissue distal to the lesion may no longer be able to provide moisture and nutrients for the shoot. Symptoms of root rot may not appear for several more days.

Phytophthora rot of soybean is a widespread problem in Indiana, mainly in heavier, poorly drained soils. *Phytophthora sojae* causes a root rot later in the season, but can also cause seedling blight. Some soybean varieties carry race-specific genes for resistance (*Rps* genes), which provide protection throughout the season. Sporangia of *Phytophthora sojae* require a soil temperature of at least 59°F to germinate, but

a temperature of 77°F is much more favorable. The cool soils over much of the state right now suggest that *Pythium* is more likely to cause seedling blight on soybean than is *Phytophthora*.

Seed treatment fungicides are designed to reduce losses from the sort of conditions we are now experiencing. If the rain lets up soon and soil temperatures rise, the plants may be okay. If adverse conditions persist for a longer period, the ability of the seed-applied fungicide to protect the young plant diminishes, and there may be some loss of seedlings.

Seedling blight can contribute to stand loss, which raises questions about whether the loss is sufficient to warrant replanting some or all of a field. Bob Nielsen has recently posted two articles about stand establishment evaluation in corn and making replant decisions: <http://www.agry.purdue.edu/ext/corn/news/articles.06/CornStandEval-0512.html>. In soybean fields with a history of sudden death syndrome (SDS), current conditions are particularly troubling because wet, cool soils are favorable for early infection with the SDS pathogen, *Fusarium solani* f. sp. *glycines*. This fungus can colonize soybean roots soon after planting. Although no symptoms occur early in the season, this colonization of roots sets plants up for SDS to develop later in the summer. SDS symptoms typically appear when plants reach early reproductive stages. A heavy rain in late June or July that saturates the soil will promote the rapid development of leaf symptoms of SDS. For fields that are already planted, there is no remedial action that can be taken to avert development of SDS. Whether the disease actually develops depends on rainfall during the summer and the degree of susceptibility of the soybean variety.

Crazy Top of Corn – (*Gregory Shaner and Andreas Westphal*)

- Corn in ponded areas at field edges may look strange when tassels emerge

The recent rainy weather over much of Indiana has brought fieldwork to a halt, but has so far not caused extensive flooding. However, low areas in many fields do have standing water. Submerged, young corn plants, particularly near perennial grasses at the edge of fields may develop crazy top later in the season.

Crazy top gets its name from the symptoms produced in the tassel. Instead of producing tassels, infected plants produce a proliferation of small leaves. Other symptoms include excessive tillering and rolling or twisting of upper leaves. Ears may also develop masses of small leaves.

Crazy top is normally limited to a few plants in low-lying areas of a field where flooding occurs. The disease is sometimes widespread in river bottom fields that have been flooded. Crazy top is usually more of a curiosity than a real problem in Indiana. Sometimes a few plants in low-lying areas show symptoms, but it is unusual to see large numbers of diseased plants.

Sclerophthora macrospora, a fungus-like organism, causes crazy top. Overwintering spores (oospores) of this organism germinate in saturated soil and produce a second type of spore (zoospore) that swims for short distances. Zoospores that come into co shortly after planting until corn has reached the 3- to 4-leaf stage.

Once corn is past the 4-leaf stage, the likelihood of infection is thought to be less. Corn that was past this stage when the rains commenced last week will probably not become infected. Corn in many fields was just emerging last week, and crazy top may show up in these.

Wheat head scab – *(Gregory Shaner and Andreas Westphal)*

In many of the past 20 years, wheat in Indiana has been damaged by head scab (Fusarium head blight). The primary cause of head scab in the Corn Belt is Fusarium graminearum (aka Gibberella zeae), a fungus that also causes stalk rot and ear rot of corn. Whether a corn crop has a stalk rot problem or not, Gibberella zeae is a common invader of stalks as they mature, so there is always plenty of the fungus around to potentially infect wheat. Weather determines the occurrence of scab. Warm, humid weather during flowering and early grain filling of wheat provides the necessary conditions for production of spores by Gibberella zeae on corn residue and infection of wheat heads by these spores.

Although recent weather has been wet, it has also been cool. Based on several years of head scab epidemiology studies, in which Purdue was a participant, a weather-based risk model was developed to help growers, grain buyers, and processors determine when and where scab will be a problem. The model is available at: <http://www.wheatscab.psu.edu/>

From the home page, the user can go the Risk Map Tool. Choose the type of wheat (winter or spring) and then click on the state of interest. Up until 2 days ago (15 May) the risk for Indiana was low. The model looks at weather for the 7 days prior to the day of prediction. Essentially, risk increases the more hours there are in that 7-day period when temperature is between 48 and 85 °F and relative humidity is 90% or greater. Prior to the afternoon of 10 May, much of Indiana was dry. When the rains commenced, temperatures dropped and there were few hours above 48 °F. The prediction of risk for wheat flowering on 16 May was somewhat greater (medium risk) for a few counties in southeastern Indiana. The 17 May prediction shows more counties at medium risk, across southern Indiana and in the northeast. This increased risk is the result of sustained wet weather coupled with rising temperatures.

The risk assessment tool has two new features this year: the ability to look at risk 1 or 2 days forward and a commentary. For today's (17 May) model output, the area of medium risk for wheat that flowers tomorrow or Friday diminishes compared to the risk for wheat that flowers today.

In summary, there does not appear to be a high risk of head blight anywhere in our region. There is medium risk for some areas. Under these circumstances, a wheat field where there is corn residue on the soil surface or a field where a highly susceptible variety was planted may develop scab.

Wheat remains vulnerable to infection through the milk stage of grain development, and even into early dough. Although wheat may escape infection during the flowering stage, it may be infected later. Later infections may not cause as much yield loss as infections that occur at flowering, but test weights can be low and grain may contain high levels of the mycotoxin DON, which can greatly reduce grain quality. Therefore, it's important to continue to monitor the favorability of weather over the next 3 weeks.

Agronomy Tips

Take Time to Evaluate Corn Stand Establishment – (*R.L. (Bob) Nielsen*) - With the majority of Indiana's corn crop planted, the next phase of the growing season is stand establishment. Growers intuitively strive for fields of corn with evenly spaced plants that emerge quickly and uniformly.

Uneven emergence can be caused by spatial variability for seeding depth, seed-to-soil coverage, seedbed moisture, seedbed temperature, or damage from soil-borne insects and diseases. Uneven plant spacing within the row is most commonly due to problems related to the planter, including worn seed meter components, poorly lubricated chains and fittings, mismatch of seed size with seed meters, and excessive planting speed. Stand losses due to pests or weather often result not only in lower plant densities, but also in unevenly spaced survivors. Corn that initially emerges and develops uniformly through early leaf stages can take a turn for the worse around the three- to four-leaf stage if the kernel or mesocotyl is damaged by insect or disease prior to the successful development of nodal roots from the crown area of the plant.

Take time over the next few weeks to assess the uniformity of stand establishment in fields as plants emerge and develop through their early leaf stages. Identify the cause(s) of uneven stands before the evidence disappears and determine whether changes in your planting operation or agronomic decisions may improve the odds of uniform stand establishment in the future.

- Early-planted corn remains at risk for the development of seedling diseases given the recent onset of cool, wet conditions plus the fact that seed-applied fungicides begin to lose their effectiveness 2 to 3 weeks after planting. Brownish or otherwise discolored seed roots, kernel tissue, or mesocotyls are symptoms of seedling disease and can have devastating effects on young plants prior to successful development of nodal roots from the crown area.

- Some early-planted fields were also "nipped" by light frost in recent weeks at the time that the seedlings were just beginning to emerge from the soil. Frost injury to coleoptiles may hinder the normal splitting of the coleoptile tip and emergence of true leaves; resulting in a "laddered" or "knotted" appearance as the true leaves rupture through the sides of discolored and injured coleoptiles.

- Fields planted more recently and not yet emerged are at risk of damage from cold, saturated soils and/or subsequent development of hard soil crusts once fields begin to dry. Be prepared with the rotary hoe if we experience a quick return to sunny warm days before the crop emerges. Bare soil temperatures have dropped by as much as 10 degrees F since the mid-week onset of the rains. Water-logged soils translate to soil oxygen deficits that can be detrimental to germination and early seedling development. Germination and emergence will occur at a slow pace until temperatures rise to normal levels or beyond. Slow seedling development further aggravates their susceptibility to disease, insect, and weather stresses.

- Uneven plant spacing within the row can be measured and quantified by simply measuring plant spacings within a set length of row. The simplest measuring technique requires a 25-ft tape measure with large easy-to-read numbers, a pad of paper and pencil (or handheld PDA), a good pair of walking shoes (and/or hip waders), and a computer with a spreadsheet program like Microsoft® Excel. Record consecutive plant spacings (inches) within 25ft of row (for each row unit of the planter if you want) at several locations within a field. Enter the numbers in columns on a computer spreadsheet and calculate the standard deviation for each list of plant spacings using Excel's built-in mathematical formula (=stdev). My research suggests that corn grain yield may decrease up to 2.5 bu/ac per inch increase in standard deviation of plant spacing within a standard deviation range of 2 to 8 inches.

Related References

Nielsen, R.L. 2001. Stand Establishment Variability in Corn (AGRY-91-01). Purdue Univ. Online at <http://www.agry.purdue.edu/ext/pubs/AGRY-91-01_v5.pdf>[URL verified 5/12/06].

Nielsen, R.L. 2006. Effect of Plant Spacing Variability on Corn Grain Yield: 2005 Research Update. Purdue Univ. Online at <http://www.kingcorn.org/research/psv/Report2005.pdf>[URL verified 5/12/06].

Corn Replant Decision-Making – (*R.L. (Bob) Nielsen*)

Crappy stands of corn (aka less than desirable) occur somewhere in Indiana every year. The recent spate of cool, rainy days does not bode well for some corn fields planted during the days immediately preceding the onset of the rainy weather. Stands of corn in river bottoms may be destroyed outright by flood waters. Poorly drained soils where ponding has occurred for four or more days are vulnerable to seedling death. Eventual drying of saturated soils often leads to severe crusting that can restrict corn emergence and result in lower than desirable plant populations. Cool, wet soils are also conducive for seedling infection by certain soil-borne diseases.

Unacceptable stand establishment in some of these fields may eventually require growers to make decisions about replanting. Deciding to replant a crappy stand of corn should be based on a number of criteria, but unfortunately the major influencing factor is often the emotion associated with looking out the kitchen window at the damaged field every morning or driving by the field every afternoon taking the kids to baseball practice.

Make a wise decision about the merits of replanting a damaged field of corn requires more than emotions. In fact, I would rather that emotions be taken out of the equation entirely. Toward that end, I developed a replant decision-making worksheet that assists growers and farm managers in making that important replant decision. The worksheet allows you to determine the damaged field's current yield potential (if left untouched), its replant yield potential, and the dollar returns (if any) from replanting the field.

The worksheet is included in a larger overall publication on corn replanting titled "Estimating Yield and Dollar Returns From Corn Replanting". This Purdue Extension publication (AY-264-W) is available as a PDF-formatted download from the Web at <http://www.agry.purdue.edu/ext/pubs/AY-264-W.pdf>. If you do not have access to the Web, stop by your local Purdue Extension county office and ask the folks there to download and print it for you.

Some of the information that is required to complete the worksheet originates from cropping records and history, including the original seeding rate and planting date for the damaged field. Some of the required worksheet inputs are frankly estimates, including what the field would have yielded under "normal" conditions if it had not been damaged and what market price you expect to receive for the grain after harvest. The expected replanting date and replanting costs are also required for the worksheet calculations.

- Recognize that the expected replanting date this year may be quite late given the amount of rainfall these fields have received in recent days, the uncertain rainy forecast for the remainder of this week, and the uncertain time required for these fields to dry enough to allow replanting.

- Also, recognize that there is no guarantee of success for late-planted replanting situations. Late-planted fields will pollinate during late summer when high temperatures and moisture deficits are more common. Late-planted fields are often more attractive to late flights of European corn borer, so replant hybrids with Bt-Corn borer traits would be worth considering. Late-planted fields can also be more susceptible to fall frost damage if the corn does not reach physiological maturity prior to the occurrence of damaging temperatures, so choose replant hybrid maturities wisely (Nielsen & Thomison, 2002).

Finally, some information is required from the damaged field itself. You will need an estimate of the surviving plant population that is representative of the damaged areas of the field. Depending on the nature of the crappy stand, you may also need estimates of after-damage stand uniformity and plant defoliation.

I will be the first to admit that it takes some time and patience to complete the replant worksheet; both of which are usually in short supply at the time the decision is being made. Recognize, though, that much of the replanting that occurs every year throughout the state is based primarily on emotion and not on estimates of economic returns. Taking the time to work through the steps of my replanting worksheet will help clarify the economic returns (or losses) to replanting and reduce the influence of emotions in this important crop management decision.

Related References

Nielsen, Bob. 2002 (rev). Estimating Yield and Dollar Returns From Corn Replanting. Purdue Univ. Cooperative Extension Service publication AY-264-W. Online at <http://www.agry.purdue.edu/ext/pubs/AY-264-W.pdf>. [URL verified 5/15/06].

Nielsen, Bob and Peter Thomison. 2002. Delayed Planting & Hybrid Maturity Decisions. Purdue Univ. Cooperative Extension Service publication AY-312-W. Online at <http://www.agry.purdue.edu/ext/pubs/AY-312-W.pdf>. [URL verified 5/15/06].

Nielsen, R.L. (Bob) & Greg Shaner, Purdue Univ. and Peter Thomison & Patrick Lipps, Ohio State Univ. 2005. Singin' From The Same Sheet of Replant Music. Purdue Univ. Corny News Network. Online at <http://www.kingcorn.org/news/articles.05/MidAprilCorn-0522.html> [URL verified 5/15/06].

Late Planting/Replanting & Relative Hybrid Maturity – (*Bob Nielsen*)

Even though Indiana's corn planting pace is essentially on par with the 5-year average (74% planted as of May 14 vs. 70% planted 5-yr average, according to USDA-NASS), much of the remaining quarter of the state's corn crop will likely be planted later than desired due to the excessive rainfall that occurred throughout the state for most of a seven-day period. Additionally, some of the early-planted crop may require replanting if plant populations are reduced due to soggy soils and/or disease.

A large section of central and northern Indiana received 2 to 4 inches of rainfall over about 7 days, while much of southern Indiana has received 0.5 to 2 inches (based on 7-day precipitation amounts ending 7am 5/16/06, NOAA-NWS Precipitation Analysis). Because of wet and slowly drying fields, some corn planting may not resume until near the end of the month.

Some of the locals who frequent the Chat'n Chew Café are beginning to question whether they should consider replacing their remaining full-season corn hybrids with shorter-season versions. They are worried that full-season hybrids planted in late May or early June may not mature safely before the first killing fall frost.

Fortunately, previous research has indicated that delayed planting results in hybrids maturing in fewer than expected Growing Degree Days (GDDs) from planting (Nielsen et al., 2002). The number of GDDs required from planting to physiological maturity in corn decreases nearly 7 GDDs per day of delayed planting after May 1. An example would be that a hybrid planted June 1 will mature approximately 210 GDDs sooner than it would if planted May 1 (30 days times 7 GDDs/day).

The bottom line from this research is that a given hybrid maturity can be planted later than we once thought possible and still mature safely before a killing fall frost. Nevertheless, at some point on the calendar, growers need to consider switching to earlier maturity hybrids to minimize the risk of frost damage in the fall.

The tables that follow summarize the delayed planting effect on hybrid GDD requirements and present the results in terms of "safe" hybrid maturities for a range of delayed planting dates (see Nielsen & Thomison, 2003, for more information). Both tables assume a fall frost date that is based on a 50% risk of frost occurring by a given date for individual crop reporting districts around the state.

Table 1 targets physiological maturity occurring the week that a killing frost is expected to occur. Table 2 targets physiological maturity occurring the week before a killing frost is expected to occur. The hybrid maturities listed in Table 1 are therefore a bit more risky than those listed in Table 2.

Table 1. Approximate "safe" relative hybrid maturities for late planting dates in Indiana with the assumption that the hybrid will mature the week of the expected first fall frost date. The expected fall frost date is that based on a 50% risk of frost occurrence. The acronym "CRM" refers to Comparative Relative Maturity as defined by Pioneer Hi-Bred International.

			Planting Date		
Crop Rpt. District	"Typical" CRM	Expected fall frost date	27 May	3 June	10 June
			Approx. "safe" relative maturity		
NW	109	6-Oct.	109	107	104
NC	109	6-Oct.	109	107	104
NE	109	6-Oct.	107	105	102
WC	112	13-Oct.	119	117	113
C	112	13-Oct.	117	114	111
EC	109	6-Oct.	110	107	104
SW	116	20-Oct.	118+	118+	118+
SC	113	13-Oct.	118+	118+	118+
SE	113	13-Oct.	118+	118+	118+

Table 2. Approximate "safe" relative hybrid maturities for late planting dates in Indiana with the assumption that the hybrid will mature one week before the expected first fall frost date. The expected fall frost date is that based on a 50% risk of frost occurrence. The acronym "CRM" refers to Comparative Relative Maturity as defined by Pioneer Hi-Bred International.

			Planting Date		
Crop Rpt. District	"Typical" CRM	Expected fall frost date	27 May	3 June	10 June
			Approx. "safe" relative maturity		
NW	109	6-Oct.	107	105	102
NC	109	6-Oct.	106	104	101
NE	109	6-Oct.	104	102	99
WC	112	13-Oct.	117	114	111
C	112	13-Oct.	114	112	109
EC	109	6-Oct.	107	105	102
SW	116	20-Oct.	118+	118+	118+
SC	113	13-Oct.	118+	118	115
SE	113	13-Oct.	118+	118+	116

The hybrid maturities are described in terms of "CRM" or comparative relative maturity ratings as defined by Pioneer Hi-Bred International, partly because most growers can relate to those definitions. More importantly, Pioneer publishes hybrid data for both CRM ratings and GDDs from planting to physiological maturity that then allow us to estimate the "safe" hybrid maturities listed in these tables <https://www.pioneer.com/growingpoint>.

The tables indicate that growers in the southern third of Indiana could continue to plant full-season hybrid maturities through at least June 10. Growers in the northern third of the state and eastcentral Indiana should consider switching to earlier maturing hybrids if planting is delayed into early June.

Related References

Nielsen, Robert L., Peter R. Thomison, Gregory A. Brown, Anthony L. Halter, Jason Wells, and Kirby L. Wuethrich. 2002. Delayed Planting Effects on Flowering and Grain Maturation of Dent Corn. Agron. J. 94:549-558.

Nielsen, R.L. (Bob) and Peter Thomison. 2003. Delayed Planting & Hybrid Maturity Decisions. Purdue Univ. Cooperative Extension Publication AY-312-W. Available online at <http://www.agry.purdue.edu/ext/pubs/AY-312-W.pdf> [URL verified 5/16/06].

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

Bug Scout

"Who said we should scout this field before that little ol' cloud got here?"

Bits & Pieces

I Found A Dead Bird.....Now What Do I Do? - (*Excerpt from Indiana Wildlife Disease News*) - Because of the media surrounding Avian Influenza and West Nile virus, this will be a question you may be asked. The Indiana Department of Health, Indiana DNR Division of Fish and Wildlife, Board of Animal Health, USDA Wildlife Services, and USDA Veterinary Services have collaborated to answer these questions for the residents of Indiana.

West Nile Virus - Wild birds serve as an amplifying host for West Nile virus. Mosquitoes become infected by feeding on infected birds and then biting humans. Wild birds are also killed by the West Nile virus. Blue jays, robins, cardinals, crows, and raptors (falcons, hawks, and owls) are highly sensitive to the virus, and therefore are the best indicators of West Nile virus activity in a community. They are the only species of birds that the Indiana State Department of Health Laboratory is testing for the virus. If you find a dead blue jay, robin, cardinal, crow, falcon, owl, or hawk during mosquito season (May - October), please call your local health department (numbers are available at <http://www.in.gov/isdh/links/local_dep/index.htm>) and ask them if they would like to pick it up and send it to the State Laboratory.

Highly Pathogenic Asian H5NI (HPAI) - commonly known as Avian Influenza or bird flu is a disease that concerns many people. Avian Influenza (AI) occurs in North America naturally in a form that does not infect humans (Low Path AI, or LPAI). The disease that has affected humans in other countries, HPAI, is not currently found in North America. In the worldwide wild bird population, AI is most often found in waterbirds, such as waterfowl (geese, ducks, swans) and shorebirds (sandpiper-type birds). However, there are no documented cases of the disease ever being transmitted to humans from wild birds. Wild, migrating birds may be one possible route of entry for HPAI into North America. If the disease is spread by wild birds, the first evidence of HPAI in North America would be expected to be found in Alaska due to its proximity to the natural Asian wild bird migration paths. The Indiana Department of Natural Resources has joined forces iwth USDA APHIS Wildlife Services in a state/federal partnership to initiate a pro-active wild waterfowl surveillance program. This will establish an early warning system for any evidence of HPAI in our migratory waterfowl. Biologists from IDNR and Wildlife Services will be handling all sampling and monitoring activities for HPAI in Indiana. Since our resident geese and ducks do not migrate a significant distance, those waterfowl are not at risk for initial exposure to HPAI and are not a priority in the surveillance program.

If you find dead migratory geese, ducks, swans, or shorebirds, **Do not pick up the birds for testing. Please call the Wildlife Conflicts Information Hotline at 1-800-893-4116** to report the location and number of dead waterfowl. IDNR and Wildlife Services professional staff willl determine if testing is necessary.

Please read the linked article for more information on what is being tested <http://www.entm.purdue.edu/entomology/ext/PDF/I_Found_A_Dead_Bird.pdf>.

Forage Day 2006 - (*Keith Johnson*) - This year's Purdue Forage Day will be held June 22. It will be hosted by Jim Kobold's Hickory Knoll Farms, southwest of South Bend. This year's Forage Day is sponsored by the Purdue Cooperative Extension Service and the Indiana Forge Council. Forage Day combines educational workshops with equipment demonstrations. Presentations cover various topics in the production, utilization and marketing of forages. Forage Day is the only annual event in the state where one can see a live demonstration of harvesting equipment.

To participate in the Hay Quality Contest you must bring one unbroken bale of hay and have it entered before 11 AM. A certificate will be awarded by the Indiana Forage Council and forage-related products will be provided by agribusinesses to the winner of each division (grass, legume, and mixed). Hay will be tested with a near Infrared Reflectance Spectrophotometer. Results will be announced within 2 weeks following the field day. Hay may be taken by the owner after the day's activities.

To see more information for registration and demonstrators view <http://www.agry.purdue.edu/forageday>.

Weather Update

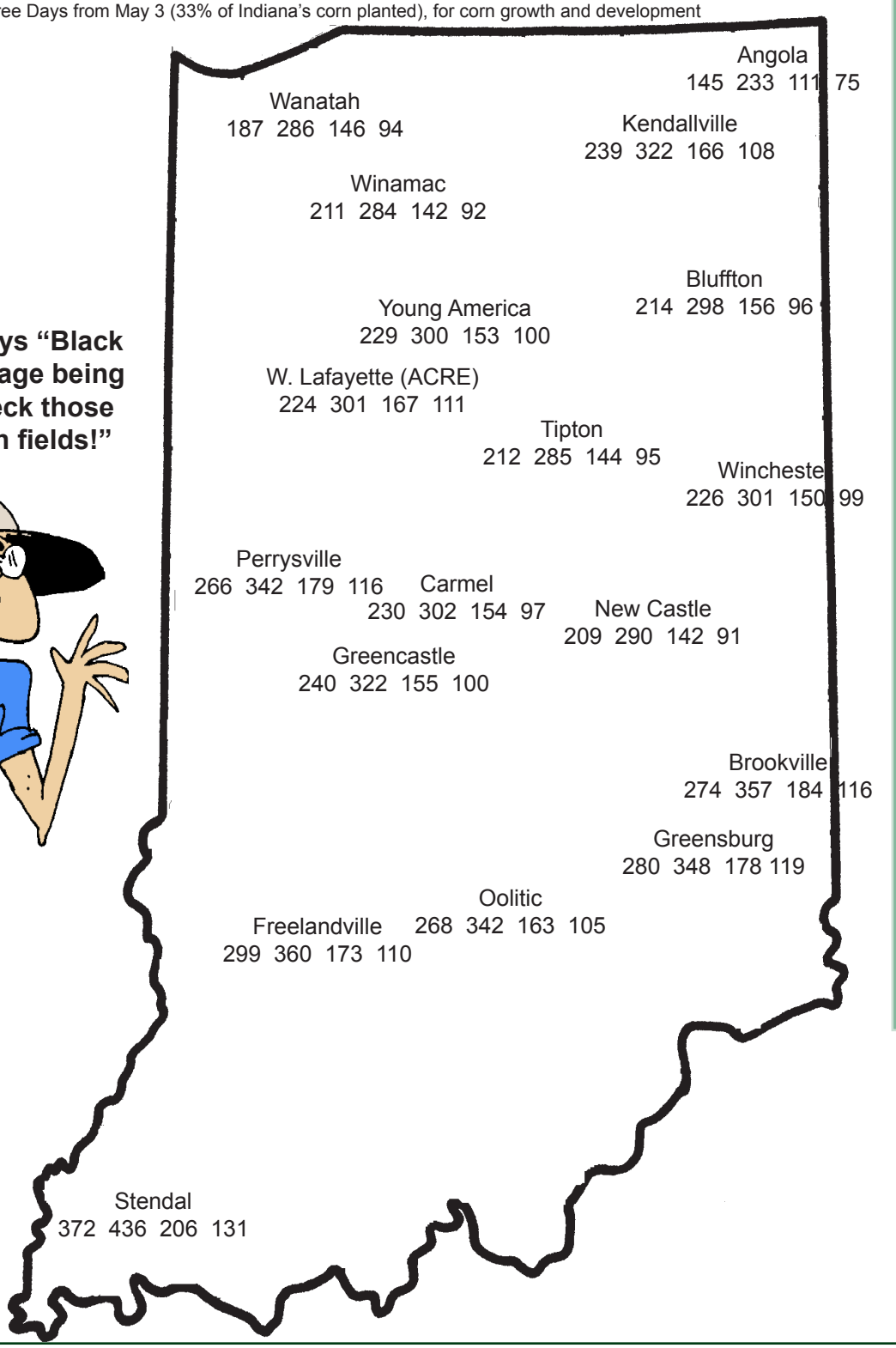
Temperatures as of May 17, 2006

MAP KEY			
Location			
HU50	GDD(2)	GDD(10)	GDD(33)

HU50 = heat units at a 50°F base from date of intensive moth capture, for black cutworm development (larval cutting begins about 300)
GDD(2) = Growing Degree Days from April 12 (2% of Indiana's corn planted), for corn growth and development
GDD(10) = Growing Degree Days from April 26 (10% of Indiana's corn planted), for corn growth and development
GDD(33) = Growing Degree Days from May 3 (33% of Indiana's corn planted), for corn growth and development

4" Bare Soil Temperatures 5/17/06

Location	Max.	Min.
Wanatah	70	48
Columbia City	64	52
Lafayette	70	51
Farmland	70	52
Butlerville	70	55
Vincennes	73	57



Bug Scout Says "Black cutworm damage being reported, check those seedling corn fields!"