

Crop Progress and Notes

Wow, how the last week has brought on changes; both good and bad. In the last week, corn fields went from barely tasselling to over 50 percent tasseled. Soybean fields put on height and are mostly in the early to full bloom growth stage. Soybean aphids and bean leaf beetles have been found across west central Iowa but at low incidence and low levels. It is highly recommended not to throw in an insecticide with your last glyphosate application. This kind of treatment simply knocks out beneficial insects without giving a yield response. There are some cases of common rust and grey leaf spot on corn and cases of brown spot and bacterial leaf blight on the soybeans. X.B. Yang and Alison Robertson have been providing good coverage on the topics of disease presence and fungicide use/timing. In short, scout to determine disease presence and pressure then wait to apply fungicides at the R3 growth stage for soybean and full tassel growth stage for corn.

The weather this past week has resulted in some poorer crops in the area due to high winds causing lodging and large hail significantly reducing yield potential in areas. Often, lodging at or before tasselling is not as problematic as later in the year. Even in severe cases the corn will gooseneck back up and from the road you will still be able to 'row the corn'. At tassel there is still the possibility that pollination will be affected due to the stresses, but yields loss should still be minimal. In cases where greensnap has occurred, yield losses can be high depending on where the stalk snapped. Where hail has caused damage the severity ranges widely. The most recent hail damage occurred in northern Carroll and southern Calhoun counties. Hail in corn is most damaging at pollination. For soybean hail damage is more serious the later it occurs in the growing season; particularly worse during the reproductive stages.

Soybean Aphid Treatment Thresholds and Economic Injury Levels

There has been a lot of talk about soybean aphids and treatment thresholds over the last week as soybean aphids have been found in west central Iowa. Just a reminder that the treatment threshold of 250 aphids per plant with an increasing population is still the treatment threshold regardless of soybean prices. Matt O'Neal, ISU soybean entomology, has noted that past studies have shown fields with aphid populations at 100 aphids per plant have not shown a yield response to insecticide application. This is one reason for not lowering the treatment threshold. Another reason for not lowering the treatment threshold is because aphid populations follow a 'S' curve. The 250 aphids per plant level is at the lower end of where soybean aphids begin a rapid population explosion. Below 250 aphids per plant there is slow and unpredicted population growth. More information on aphids can be found at the link to the right. Also in the next week, two new publications will be available regarding soybean aphids: *soybean aphid companion guide*; publication number CSI 0011 and *soybean aphid speed scouting*; publication number CSI 0015. Keep an eye on the ISU Extension publications webpage for their availability.

While treatment thresholds have not been lowered due to higher soybean prices, the economic injury level should be lowered. Before soybean prices rose the economic injury level was in the 650 aphids per plant range and now with near \$15 per bushel prices that economic injury level should be around 400 aphids per plant. Even at 400 aphids per plant there is still time to make an insecticide application at the 250 aphid per plant treatment threshold.

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Web pages to View:

- [Soybean Aphid](#)
- [Field Extension Education Laboratory](#)
- [ICM News](#)
- [Sensitive Crops Directory](#)
- [Soybean Disease & Pest Management Field Guide](#)

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Bean Leaf Beetle and Thresholds

This year's weather is having some affect on the bean leaf beetle (BLB) populations. The overwintering generation lasted longer than normal due to cooler temperatures. And now the first generation BLB is around, possibly peaking and also drawn out. This first generation BLB will feed on the leaves even when pods are present. So if pods are aborting it is likely coming from another cause. It is usually the second generation BLB that feeds on pods due to natural senescence of the plant and therefore lack of a preferred feeding site.

It takes greater than 20 percent defoliation before yield loss is recognized. Therefore, scouting for first generation BLB to determine treatment of the second generation is first and foremost. The treatment threshold using the drop cloth method is 2 to 4 beetles per 3 feet of row, depending on application costs. The treatment threshold for the sweep net method is 8 to 16 beetles per 20 sweeps, depending on application costs. The full treatment threshold tables can be found a 2007 ICM News article found at; <http://www.ipm.iastate.edu/ipm/icm/2004/7-12-2004/predictblb.html>.

Assessing Hail Damage Yield Loss for Corn and Soybeans

Here are a couple tables to help assess hail damage to soybeans (Table 1 and 2) and corn (Table 3). The publications credited are not the most current, but the tables provide the best data to date for assessing hail damage yield losses.

Soybean hail damage yield loss has 3 components; 1) stand loss, 2) defoliation and 3) node loss. For each percent stand loss there is a proportional percent yield loss. Tables 1 and 2, below address the defoliation and node loss yield components. Adapted from *Soybean Yield Loss Due to Hail Damage*, NebGuide A-8, November 1985.

Table 1. Estimated percent yield loss due to soybean leaf defoliation for indeterminate varieties.

Growth Stage	Percent Leaf Area Destroyed			
	10	40	70	100
R1-R2	0	5	9	23
R3	2	6	14	33
R4	3	9	22	56
R5	4	13	31	75
R6	1	11	23	53

Table 2. Estimated percent yield loss due to nodes lost and broken over (number of nodes is expressed as percent of total nodes).

Growth Stage	Percent Nodes Cut Off				Percent Nodes Broken Over			
	5	25	45	65				
R1-R2	1	-	12	23	0	2	6	14
R2.5	2	10	18	32	1	6	11	20
R3	3	14	25	41	2	10	17	25
R3.5	4	19	35	53	2	13	23	33

Table 3. Estimated percent corn yield loss due to defoliation at various growth stages. Adapted from *Assessing Hail Damage to Corn*, National Corn Handbook, NCH-1, May 1985.

Growth Stage	Percent Leaf Area Destroyed				
	10	25	50	75	100
16 - leaf	1	4	18	36	61
Tasseled	3	9	31	62	100
Brown Silk	2	8	26	53	88
Blister	2	7	22	45	73
Milk	1	5	18	37	59
Soft Dough	1	2	12	26	41
Dent	0	0	7	16	24
Mature	0	0	0	0	0