

Crop Conditions and First Yield Checks

Crop conditions have deteriorated the last week. Higher temperatures coupled with no rain is bringing home the obvious. The extent of yield loss cannot yet to be determined. However, we can get an idea of what we could possibly have IF we have normal weather from here on out. In the previous newsletter, I discussed the methodology of a basic yield estimate formula. On July 18th, I went to one of my fields in the Illinois River bottom to get an idea of yields. The field is not my best nor the worst.

The hybrid was Burrus 6F72 planted on 4/10/2012. Fertility is relatively uniform. N was fall applied anhydrous ammonia with approximately 30 units of N applied and incorporated with chemicals prior to planting.

I stepped off 17.5' of row which is 1/1000th of an acre, did population counts and collected ears. In figure 1, you see the ears of the 1st test area. In figure 2, you can see how I easily counted the # of rows.



Figure 1
Test 1
Bottom



Figure 2
Test 1
Bottom

Refer to table 1 for the results of the yield check.

Yield Check 2012

Bottom Ground Yield Check

Test 1		kernels/bu		
Population	31500	90000		
	Length	Rows	Yield	
Ear 1	30	16	168	
Ear 2	8	10	28	
Ear 3	30	18	189	
Ear 4	32	18	201.6	
Ear 5	26	16	145.6	
Ear 6	31	18	195.3	
	Avg	26.16667	16	146.5333

Test 2		kernels/bu		
Population	31000	90000		
	Length	Rows	Yield	
Ear 1	24	16	132.2667	
Ear 2	21	14	101.2667	
Ear 3	34	16	187.3778	
Ear 4	24	18	148.8	
Ear 5	26	16	143.2889	Field Average
Ear 6	34	16	187.3778	
	Avg	27.16667	16	149.7185
				148.1259

You might ask yourself as I did, can I believe these numbers given the weather that we've had. Maybe. If we get timely rains, this corn could finish filling and maybe achieve these yield levels. However, with continued dry weather and heat, these numbers will not be accurate. If we have smaller kernels, say to the point that it will take 100,000 kernels per bushels, the additional loss will be in direct proportion to the number of kernels it takes to make that bushel. In addition, when you have a premature death of the plant, you will lose test weight of the kernel. If the stress continues, we have a high probability of lower test weights due to abnormal death of the plant if the plant dies prior to black layer and normal maturity. This loss of test weight is a quality factor in regard to dockage of the delivered grain at the elevator.

**Hill Ground
Yield Check**

Test 1 -Hill



Test 2 - Hill



Yield Check 2012

Test 1		kernels/bu	
Population	25000	90000	
	Length	Rows	Yield
Ear 1	20	16	88.89
Ear 2	24	16	106.67
Ear 3	22	16	97.78
Ear 4	40	14	155.56
Ear 5	12	16	53.33
Ear 6	20	16	88.89
Avg	23	15.67	100.09

Test 2		kernels/bu		
Population	30500	90000		
	Length	Rows	Yield	
Ear 1	25	16	135.56	
Ear 2	35	14	166.06	
Ear 3	15	18	91.50	
Ear 4	28	16	151.82	
Ear 5	20	16	108.44	
Ear 6	29	16	157.24	
Avg	25.33333	16	137.36	Field Average
				118.7278

In reference to the test of the hill corn, I'm not sure I believe the numbers. The kernels are extremely small as are the cobs. The numbers and math add up, it is just the physical size that I have a problem with. If I had to make an educated guess, I would say that those yield numbers on the hill were off from 10 - 20% to the high side. The plants are not as far along maturity wise as the bottom corn and I think that this year, that will have a negative effect on yield. The later it was planted the worse it looks at this point in time. Harvest yields will tell us how close our estimates are.

Hybrids planted were Test 1 - Wyffels 7477 Test 2 - Pioneer 1395. Both were planted on 4/21/12 at 32,000 population. Fertility was moderate for P and K and the N was fall applied.

Stalk quality

I referenced the stalk quality issue in the last letter, noting that the stalk was becoming "pithy" as you can see from figure 3, you can see the white area that is what I call "pithy" for the lack of a better term. This process is natural, but not at this point in the corn maturity process. The earlier this occurs, the earlier stand ability and stalk rot issue occur. Standability and stalk rots can create losses not only from infestation, but the physical collapse of the plant making harvest difficult and grain losses rise. This can manifest itself in the next crop year if you have high grain or ear losses resulting in "volunteer" corn in the next crop.



Time will tell if we have a die off of the plant vs a more normal finish to a stressed crop. Either way, harvest is going to be earlier than normal given the current weather conditions.

Soybeans

The soybean plant has an amazing ability to with stand stress. We saw that to some extent last year with dry conditions but finished the season with last minute rains. For the most part, we had above average yields that reinforced the idea that soybeans can with stand a high degree of stress. However, as with corn, the plant does need rain to finish the job it started. Rains during podding and grain fill are extremely important. Blooms are appearing as are some small pods. It is not unusual for these blooms and pods to abort under stress which is happening right now. The plant will keep blooming and trying to pod and fill throughout the stress. At some point if the stress is severe, leaves will begin to drop and death slowly overtakes the plant. We are not at this point yet. Without significant rain, this will occur. An additional problem that usually happens in a drought situation is infestation of the two spotted spider mite. These extremely small insects are prevalent during hot, dry time periods like we are experiencing now. The small mites have the potential to completely destroy the soybean plant left unchecked. We have found active spider mite infestation in the Browning area and have treated accordingly. Please refer to the link to find out more about the two



spotted spider mite: <http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2007/7-23/spidermites.html>

Spider mite damage in Schuyler County:



As you can see from the picture below, there is a "lighter" color to the area of beans in the center of the photo. This area, left untreated will become extremely yellow and death will occur. It is also one of the first signs that you need to check this area for spider mite infestation. The darker beans at the extreme bottom of the photo to the left is a more normal color. The lower photo show what happens the spider mite infestation is left unchecked.



Lower leaves (see photo directly below) drop, leaving the plant with less leaf area for photosynthesis that feeds the plant for grain production. These plants can still have potential for good yields. This is why we are treating. The cost of the treatment will be recovered if we get rain. If no rain is received, it will just be an



additional cost. There is still time for soybeans but that time is quickly eroding. If timely rains (I'm getting as sick of writing this phrase as you are reading it) don't occur, severe production losses are going to be a reality. It's always nice to know what is going on in the fields in reference to plant physiology. The more you know, the more informed decision you can make that can and will affect your income. From a personal standpoint, sometimes all this information can be somewhat depressing when you are in the middle of this. I tend to view it as a learning experience. The experience I have had in the 70's and 80's with drought is paying off this year. Not necessarily to change the inevitable but to understand what can happen and what processes are happening with plant physiology that effect yield and ultimately bottom line income. Knowledge is power.

Animal depredation



If the heat and drought wasn't enough, we have to deal with increasing foraging damage from wildlife. Deer are the main culprit although at different times of the year, squirrels and turkeys create considerable damage. The photos shows extreme feeding by deer. One alternative is to allow hunters, but that doesn't stop them until they've done their damage. Another option is to get a nuisance permits from the game warden to allow to take as many deer as the permit allows. Deer depredations costs landowners thousands of dollars in crops losses every year not to mention damage to vehicles due to the increased populations. I know a lot of you get fees for hunters to come in to take the deer. However, most of these are trophy hunters which do nothing to thin the population and may even increase your damages if they are planting food plots (as crazy as that seems given our damage) or using attractants (probably illegal). You spend thousands of dollars in inputs for your crops. It is up to you to take control of your own property to protect your investment.