



The Chem Gro Crop Watch, Issue #6, 11/6/13

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Green soybean plants mystery...SOLVED! In my last Crop Watch letter I presented the mystery challenge of why the green soybeans in this picture are not maturing the same as the rest of the soybeans in the field. I had a total of 22 correct answers to this question, and I thank those for trying. Nate Huls was the first correct response. Thanks Nate!

This green soybean mystery is a two part answer. First, what is the physical cause for the green beans? If you notice in the upper left corner of the picture, there is a dusk to dawn light hanging on the telephone pole. As the name of the light suggests, it produces light from dusk to dawn during the night time hours of the day. This is the physical cause for the green soybeans.



Second, what is the physiological cause for the green beans? The soybeans that we grow in our region (group 00 – 4) are referred to as indeterminate soybeans. These types of soybeans are able to grow vegetation and set pods at the same time. These soybeans are physiologically “told” to mature by the increasing of night-time hours (darkness). In other words, as fall approaches, the soybean plant can sense that the nights are increasing in darkness therefore it forces itself to stop growing and mature. The “mystery” in this picture is that the dusk to dawn light is creating artificial light and casting it into the field. The soybeans are receiving this light at night, therefore not recognizing the season is shortening to make it mature, therefore they remain green with little or no yield.

Another interesting question...what would happen if you were to take a group 3 soybean that you plant in Western Illinois, and plant it in Florida? Since the Southern US has much shorter night time hours than what we do in Western Illinois, a group 3 indeterminate soybean would just keep growing and growing to the point that it falls over and not reach maturity. Group 5 – 9 soybeans that are used in the Southern US are determinate, meaning they grow vegetative for X amount of days then quit growing. After that the plant forces itself into reproduction to create yield (somewhat comparable as to corn grown in our area). So there you go. I am not sure what you can do with this information, but maybe you can impress your city slicker friends while you are sitting at the bar when it's too wet to farm (like today)!

Winter annual weeds... Keep until spring or destroy in the fall? Fields that receive minimal fall tillage or no-till over a period of years begin to develop a whole new weed spectrum (chickweed, henbit, marestail, etc.) compared to fields that are under more intensive fall tillage.

Winter annual weeds germinate in the early fall (and



early spring) and re-seed in late spring. The picture above received a fall herbicide application (the clean area) and the picture was taken the following spring. These winter annual weeds create an onslaught of challenges in the spring, and one positive as I see it. Here are a few of my thoughts that I have observed over the years.

- The positive. Winter annual weeds do serve as a “poor man’s cover crop” when it comes to reducing soil erosion on HEL ground. Even though we view weeds as bad, the root systems are still valuable in anchoring soil to the ground in heavy periods of rain on fields that slope.
- The negatives.
 - The dense mat of weeds keeps the soil wetter longer, possibly delaying planting.
 - The dense mat of weeds can ignite tempers of tractor operators as the weeds bunch up in field cultivators creating “beaver huts” scattered around the field.
 - Black Cutworm moths seem to be more attracted to these weedy fields for laying their eggs for the larvae to hatch and feed. If these fields are planted to corn you had better be actively scouting or plan on a preventative insecticide treatment to kill the cutworm larvae before they thin down your corn stands.
 - If marestail does not die from a spring burn down application of herbicide, it will haunt you for the rest of the growing season if it is in a soybean crop. This year, the spring burndown of herbicide appeared to have killed the marestail. It burnt the weed down to a small brown nub. However weeks later it regrew and was immune to virtually any herbicides that we threw at it. ***Post applied herbicides labeled for marestail in soybeans are marginally effective at best.*** A fall application is recommended for control prior to planting soybeans.
 - Chickweed in corn. Although I cannot scientifically prove it, I do believe there is some sort of a negative allelopathic compound that is given off from chickweed when corn is trying to grow through it. The picture to the right shows what happens when chickweed is killed too late after corn emergence. The stunted corn will never recover or yield what it could have like the tall green corn in the background. Chickweed needs to be dead or dying prior to planting corn. Either do it in the fall or early spring.
 - Three consecutive years. That is about the time period that it takes to vanquish winter annuals from your fields by killing them **BEFORE THEY SET SEED.** Many times spring burndown of herbicide applications are made too late and seeds are already viable for the following years.
 - Vertical tillage. If you time it correctly (when the moon is in line with Jupiter on the 8th day of the month during the daylight hours between 1:12 pm and 3:08pm); vertical tillage can do a good job of reducing winter annual weed pressure if conditions are ideal. However; if not enough dirt is moved, or the soil is too moist, or the weeds are too tall; then weed control will be poor in comparison to a fall herbicide program.



That’s my 2 cents worth.....the choice and decision is always yours.

Lonne