Wheat Crop Problem – Day 2

Mike, the Goldsky chemical rep was quick to respond. He met Trent at the farm and they surveyed together the crop and the damage. Mike had been selling herbicides and pesticides for about 20 years. He had heard a lot of talk about organic fertilizers, but when farms have 100’s of acres, that approach is difficult to justify. The green manure strategy is possible though. Perhaps a previous crop had caused the problem as they tilled it back into the soil. If so, it wouldn’t be the chemicals fault that the plants were turning yellow. Another possibility is a result of integrated pest management. Did the Jones use something else besides Goldsky? Did those chemicals or methods interact poorly and lead to crop failure?

He had worked with the Jones team for nearly all his career. Never had a problem. He had seen injury before but this was the first time he had heard of this kind of injury on a wheat crop. On the other hand, you’d think that when selling millions of gallons of chemicals, it would be possible for someone at the plant to make a mistake. That had happened before. “I wonder if they have some kind of pest or insect that was causing the problem, like eating the roots. Could they employ some type of Biological Control? As he drove out to the farm he was asking himself a lot of questions. I didn’t think they had any herds of animals where rotational grazing might have hurt the crops or extensive use of cover crops. Was the crop damaged beyond saving? If so, it was hard to know what the real reason might be. Did they over apply? How could he know that? Was the sprayer faulty? How would he know that? Had the Jones team mixed other chemicals in that didn’t work well with his Goldsky chemical? How would he know? Mike knew he needed to be careful what he said to any farmer, but in this case, he had to be very careful, because a fairly large sum of money might be at stake. The way using herbicides works, is that you can only spray up to a certain point in the growth of the wheat. Before that point, the chemical kills the weeds, but not the wheat. But at some point, you can’t spray anymore and you just have to let any weeds grow along with the wheat. So it’s important to spray as many weeds as you can while the wheat stalks are young, because at some point, you won’t have a chance to spray again. And at that point, to pull up weeds manually would mean huge cost in labor, rending the crop profit-less. Also, to pull up weeds manually means that you would also injure the roots of the wheat stalks themselves to the point it wouldn’t make any sense.

As he arrived at the farm, he knew exactly where to park and where to find Trent and Fred. They jumped back in the truck and drove out along the access road. The injury was easy to see. Perpendicular to the road the first quarter mile or so looked as normal as can be. The wheat plants were thriving. Then all of the sudden you could see the rest of the field was yellowing. And the yellowing was perpendicular to the road. They parked, got out of the truck and began to survey the situation. After a few minutes, Make pulled out a number of plants, put them in tubes, designed to use when sending them off to a lab, and put the tubes in a cooler filled with dry ice, to keep them fresh for the chemists to run tests on.



Mike began asking questions, about the previous years crop. 1) Had the entire field been planted with that crop? 2) What had they sprayed last year and when had they sprayed this year? 3) What kind of spraying machine had they used and how the spraying process went?

Trent and Fred told Mike their story. It was so hard for Mike to grasp how the two applications of Goldsky could be so different in their result: one half of the field perfectly green, and the other half yellowing. He went over the weather conditions, and temperature and the wind. Had the neighboring farmer sprayed and perhaps some of his spray has blown over into this field? How about irrigation? Had they irrigated where the water caused the herbicide to move from one part of the field to another and injure the crops? There were so many questions running through his mind, but of course he couldn’t say them out loud. Perhaps it was now time to bring in some specialists. Mike suggested that they call in the Utah State Extension Agent, and perhaps the weed specialists from USU if they would come. Perhaps their experience would help figure it out. What was happening? What caused it? Can the field be saved? If not, who is going to pay the $30,000?

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Tom was the local Extension agent in Cache Valley. He had grown up on a farm, studied at USU and was thrilled to land the Job working with farmers and helping them with the latest research from the university. This was not his “first rodeo” looking at herbicide injury. The first time he went out to see a herbicide injury case, there were stripes of yellowing in the field. Every 25 feet a stripe of yellow in the same direction as the farmer had sprayed the field. It turned out that they had not been careful about overlap. When you spray one direction, and turn around to come back, if you are not careful, your sprayer sprays over the path you had just traveled. This caused overlap and when you get double the layer of herbicide there is too much chemical, and besides killing the weeds, you kill the good plants too.



But there were no stripes in this field. And if there had been wind damage, then the entire field would have been damaged going away from the road. But that wasn’t the case. Half the field going away from the road was perfect and half was yellowing. The spray path was also perpendicular to the road.



One by one, the group arrived. Fred from USU was the weed specialist. Jim was also a weed specialist and came along for the experience. Everyone knew what was a stake. If the chemical was bad, the chemical company was going to have to pay a huge sum of money. If the farmers applied the chemical wrong the farmer was going to out about $30,000.

Immediately Jim began asking questions of Trent and the farm helper Fred. The other weed specialist began conversing with the chemical rep and tech rep who came along with him to provide support in case the chemical company was at fault. The chemical rep was suggesting that the damage was due to an ACCase inhibitor type chemical which of course wasn’t his Goldsky Chemical. He said that Trent, the farmer, must have used another chemical. The weed specialist said it looked like glyphosate chemical to him, like Roundup and went over to the field, pulled up a plant and pulled the plant apart. It took a lot of effort to pull the plant apart and when it did, it kind of “popped”. The weed specialist said, “Well it might be a ACCase inhibitor, but if so, the plant would have begun rotting on the inside and it would have pulled apart easily. These yellow plants came apart hard. It feels more like a glyphosate to me, like Roundup which could kill the wheat.” But these were experienced farmers. They wouldn’t put RoundUp on the wheat.

In the other conversation between Trent the farmer and the Extension agent and first weed specialist, it became apparent that the sprayer was pretty conventional with little or no chance for residue from spraying other fields or other chemicals. But how could them be sure? The wind wasn’t an issue, And even though there was a rainstorm after spraying, making the field wet and cool, it wasn’t enough to retard the growth of the wheat. Further if temperatures were cool enough to retard the growth, the entire field would have been affected. Only half of the field was injured.

The conversations went round and round. Finally the USU Extension agent suggested that they go back to the barn and check the inventory of chemicals that they had on hand to see if there might be a clue there.

Question: If the chemical that was causing the injury was a glyphosate, like Roundup, what kind of damage would you expect to see? If the chemical that was causing the injury was an ACCase inhibitor, what kind of damage would you expect to see? What kind of injury are they actually seeing in this crop? What does Google say?