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Balance Use and Corn Injury

Most of you have probably heard of the new corn herbicide 'Balance' that was labeled for use in 1999. Balance contains the active ingredient isoxaflutole, the first product from a new class of chemistry with a new mode of action (the way it kills weeds). Balance is a preemergence herbicide that gives broad spectrum broadleaf weed control, as well as being fairly effective on a number of annual grasses. Balance has been advertised as having the ability to recharge after a rain and 'reach back' and control emerging weeds. Unfortunately it seems to be 'reaching back' and causing considerable damage to a number of corn fields.

Many tests on the effectiveness and crop safety of Balance have been conducted by Rhone Poulenc and University personnel the last couple of years. I have had five tests the last two years that included Balance. Although slight injury has occasionally been reported there have not been reports of serious injury. I saw very little injury in my trials.

Last week I began to get reports of Balance injury in corn around Plainview. On Monday May 17, Dr. Wayne Keeling from the Lubbock station and I had a chance to visit some of these fields. Clearly injury from Balance had occurred. Severity of the injury ranged from completely dead plants to slightly yellow plants. Some of these fields will have to be replanted.

Balance is a pigment inhibitor, and does not disrupt the initiation or differentiation of new growth. Injury symptoms that are being observed are yellow, necrotic leaves, and stunted plants. These symptoms are a little bit of a surprise in that I would have expected to see the injury expressed more as white leaves.

So, the big question is why are we seeing such severe injury from Balance? As is usually the case, weather is likely playing a large role. Thus far where injury has been most severe is in fields where corn was planted early in cool wet soil. The corn had emerged prior to receiving heavy rainfall (up to 4 inches). The corn looked okay initially at emergence and then

began to go down hill following the rain. The corn plants have a relatively good root system and you would expect to see plants recover following warm, sunny weather, however, this does not appear to be the case. Many of the most severely injured fields were treated with Balance + atrazine. I do not know if the atrazine is contributing to the problem or not, but it is something to look for. **Why are we seeing so much injury?** My best guess at this point is that the corn plant is taking up a much higher percentage of the Balance than normal due to the wet soil conditions. Water will compete for herbicide binding sites on soil particles. Thus, the wetter the soil the more herbicide that will be available to be taken up by the plant. In addition the poor growing conditions have slowed the ability of the corn plant to metabolize the herbicide.

Will plants that are exhibiting slight to moderate injury symptoms recover? In general I would say yes, however, this is a new herbicide that we simply do not have a lot of experience with. In herbicide trials where slight injury symptoms occurred, plants did recover in a few days. I expect most of the corn exhibiting mild to moderate symptoms will recover with little effect on yield. **If replanting is necessary will the second crop also be injured?** I would not expect injury to occur on replanted corn. The warmer soil and better overall growing conditions should reduce the potential for injury. The faster corn is growing the better it will be able to metabolize the herbicide. Before the decision to replant is made be sure and check with your Rhone Poulenc representative.

Corn that was planted after the big rains does not appear to be injured as much as the earlier corn. These fields will continue to be monitored. It is my hope and expectation that corn planted later under better growing conditions will be fine.