

# Drought Stress During Pollination Window

*Blanks On The Cob, A Lot Of Just Cobs*

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**J**onathan Fant, area agronomist for Pioneer Hi-Bred in West Tennessee and the Purchase Area of Kentucky recently spoke about drought stress and its affect on corn in the area.

“Growers have experienced a lot of drought stress, right in the pollination window of corn. Growers are seeing lots of pollination issues where they are seeing blanks on the cob, a lot of just cobs and no grain. It all plays back to



**Drought stress during the pollination window of corn was discussed by Jonathan Fant, Area Agronomist for Pioneer Hi-Bred in west Tennessee and the Purchase Area of Kentucky.**

Photo by John LaRose

drought stress. We have had a lot of heat, but it has been the drought stress that has delayed the silk or the silk was non-receptive to the pollen that was out there.”

Irrigated fields appeared to have fewer problems. According to Fant, “the guys have taken care of the corn in irrigated areas in a timely manner. Irrigation is picking up in West Tennessee. There are a lot of pivots going up right now.”

Fant explained pollination. “For everything to work right, your silks must come out. Next the pollen sheds. The silk receives the pollen. Because there was not enough moisture in the ground silks were being deprived of moisture. Since the silks are comprised mostly of water, this lack of moisture severely limited the ability of the silks to either come out or to be receptive to the pollen.”

He continued, “The plant doesn’t have enough moisture in it to push that silk out at the time that the pollen is out. The pollen is shedding but there is no silk to receive it or the silk is already dried up and doesn’t have enough moisture content to bring the pollen down the tube

into the ear.”

Fant has seen fields throughout the area that drought has impacted yield. He said, “I have been in some corn that I don’t know if it will make 20 bushel. You can go down into the flat of the fields where they have had moisture and it may be 150 bushel.”

West Tennessee soil moisture varies within fields. Fant said, “Our fields are highly variable. We have fields that go up on a rise and then come down in the bottom and those bottoms, they have had enough soil moisture in them to pollinate. They are 150/160 bushel corn and

then you get up on the rise where soil moisture is just depleted and there is nothing. The depth of our topsoil varies a lot in our hills. Our hillsides are much eroded, all that topsoil is just washed down in the bottom.”

Fant continued, “It is strictly a timing issue. About 10 days prior to silking and during silking is when water is critical. For example, a 107-day hybrid that silks early may have been more successful this year because it was closer to the last rain. There was more moisture in the ground. You get 118 day and it will go to silk a little bit later, it was further away and with less moisture in

the ground when it was going through that critical stage. It was less successful. It is not hybrid specific, it is not company specific. It is planting date and silking date specific. It is specific to environmental conditions that coincided with the silking, pollen shed and lack of moisture. Ultimately it is a question of ‘Was there enough moisture during silking to be successful?’”

Lack of moisture creates a visual affect. Fant stated, “A long silk is an indication that the silk was continuing to try to extend and elongate and catch pollen but was not successful. Once it turns brown, that indicates that it has pollinated.”

Purple or reddish leaves indicate plants that did not pollinate. Fant stated, “The plant naturally wants to put the sugar up into the ear to make a grain. If that grain is not there because it did not pollinate, then that sugar has got to go somewhere and it goes back into the leaves. If you have red or purple corn then more than likely it did not pollinate.”

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