

Assessing Damaged Corn and Sorghum

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Hail damages have been and will continue to be a possible threat of damage to corn and grain sorghum plants. When damaging hail occurs, our first impulse is to assume that the damage is worse than it may really be. This is particularly true where the crop had been growing very well, and the prospects of a good yield were promising.

The optimum planting “window” for the crop in relation to the time of the year when the hail event occurred, and the expected weather patterns for the remainder of the season are the basis for one being tempted to make a prompt decision regarding: 1) the degree of damage experienced from the hail event, and 2) the need to re-plant the crop. Although a prompt decision is important, one must realize that a better assessment of crop damage is made several days after the event than can be made the next day or so. This is because the severity of the crop’s actual damage may not be fully manifested the first day or so after the storm event.



Determining how severe the corn or grain sorghum crop is damaged is a rather complex one in most cases. It is certainly not an exact science because of all the unknown conditions that are involved. For example, will the next few days be warm and sunny (which would support rapid plant growth and development)? Additionally, will there be sufficient rainfall/soil moisture to support re-planting the crop (assuming the crop is grown under dryland conditions)?

Five to six days after a hailstorm has occurred, one must consider the following circumstances as a basis for making wise decisions regarding the damaged crop:

- 1) What was the stage of development of the crop at the time of the event?
- 2) How much leaf tissue was **removed** (not just perforated and torn, but actually removed)?

- 3) Has the growing point been damaged?
- 4) Are the stalks broken, especially below their growing points?
- 5) What is the remaining “viable” plant density; and are there major skips in the stand?
- 6) What is the optimum planting “window” for the crops in the affected area?
- 7) Will the crop be grown under dryland conditions, or is supplemental irrigation available?
- 8) What are the costs of replanting; and is seed of desirable hybrids still available?
- 9) Have there been herbicide applications which would preempt replanting a different crop?
- 10) Is there evidence of disease infections at or near the points of injury from the hail on the crop?

Damage tables constructed to indicate the percent yield reduction observed with various percent of leaf defoliation at defined growth stages are given in a publication entitled: “Assessing Hail and Freeze Damage to Field Corn and Sorghum”. A hard copy of this publication (B-6014) may be obtained from the Extension Publication Office; or you may see a copy of it on the following website: <http://soil-testing.tamu.edu>

If you decide to look the above mentioned publication up on the internet, follow these steps: go to the above website; in the left window, scroll down and click on “Faculty & Staff”; in the right window, scroll down and click on “Coffman”; scroll down to the bottom and click on “My Publications”; scroll down and click on the publication entitled: “Assessing hail and freeze damage to field corn and sorghum”.

Often, heavy rainfall is associated with the hailstorm. These conditions may also cause severe root lodging of the plants, especially when the soil was already wet. Lodged corn and sorghum plants, if not otherwise damaged will, attempt to straighten themselves and should not have a major impact on the grain yield. The orientation of the crop row relative to the direction of the winds that blew the crop plants down may influence the harvesting process. Plants lodged across the row should be less of a problem harvesting than those lodged with the row.

In summary, wait several days after the hail event before trying to assess the degree of damage. Consider the amount of leaf loss, and the growth stage of the crop at the time of damage; use the appropriate table for estimating expected yield reduction; the adequacy of the remaining plant stand; the possible presence of developing disease organisms; and the feasibility of replanting the same or alternate crop. Often times, it is too costly and too late in the season when the hail event occurs to replant the crop. In these cases, salvaging what is possible from the crop is the best decision.

For additional information see our website at: <http://www.taexsoilcrop.tamu.edu>