

Storm Damaged Corn

by Andy Luke, Field Specialist in Agronomy

Recent storms have left many fields damaged by hail or floods. When assessing damage, it's best to wait three to seven days to allow your plants to begin recovery before determining the extent of the injury.

When corn is small, yield or stand loss from hail damage is negligible. In corn plants, the growing point remains underground until approximately the V5 or five leaf growth stage. Most area fields have not yet reached this point, so even complete defoliation is not expected to significantly reduce yield. These fields should recover and should not be replanted or destroyed. For fields past the V5 growth stage, pull and split several plants five to seven days after the storm and determine if the growing point has been damaged. If the growing point remains intact and viable, the plant is expected to survive. Expected yield loss can then be estimated by determining the percent leaf area destroyed and the growth stage of the corn. As an example, 75% leaf defoliation of sixth and seventh leaf plants will result in 5 and 6 percent yield losses, respectively.

Assessing flood damaged corn can be more difficult. As expected, the longer an area remains under water, the higher the risk of plant death. Corn roots take up oxygen from the soil to perform critical life sustaining functions. Within about 48 hours after soil saturation, the oxygen levels in the soil are depleted. Some young plants may survive longer than this if temperatures are cool, but as temperatures warm up and the plant is expending more energy to grow, plant death can be expected around two days after the flooding begins. Corn plants that sustained brief periods of flooding are expected to survive, but may be left with mud or old crop residues on their surface. Ironically, these plants would benefit from more rain to wash the mud off their leaves which would allow them to begin photosynthesizing again.

Growers also need to be on the lookout for nitrogen deficiency symptoms when they begin scouting their flooded corn stands. Nitrogen in the nitrate or urea form is highly mobile and prone to leaching in the soil. In the clay or silt loam soils that are common in Northwest Missouri, urea or nitrate can move five to six inches down with each inch of rain. Some of this may return to the root zone as the soil dries out, but a large amount of it may be lost through tile lines or denitrification. Corn plants only take up about 5% of their total nitrogen before the V6 growth stage, so a vast majority of the nitrogen needed for your crop is yet to be taken up. Therefore, growers should be prepared to add additional nitrogen to their corn when conditions allow.

For more information on this and other topics, contact Andy Luke at the Harrison County Extension Office at 660-425-6434 or LukeA@missouri.edu.