

# BETWEEN THE ROWS

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FROST AND FREEZE DAMAGE TO CORN

ISSUE: 12

## Introduction

Recent freezing temperatures may impact emerged corn plants. Some early planted corn is struggling to emerge due to an extended cold period. Uneven emergence can result in difficulty in evaluating yield potential of a less than ideal population. Add frost damage and the process of stand evaluation becomes more challenging. Actual air temperature, soil moisture conditions, stage of growth, tillage, and length of cold period all can influence the amount of damage that may occur to corn seedlings.

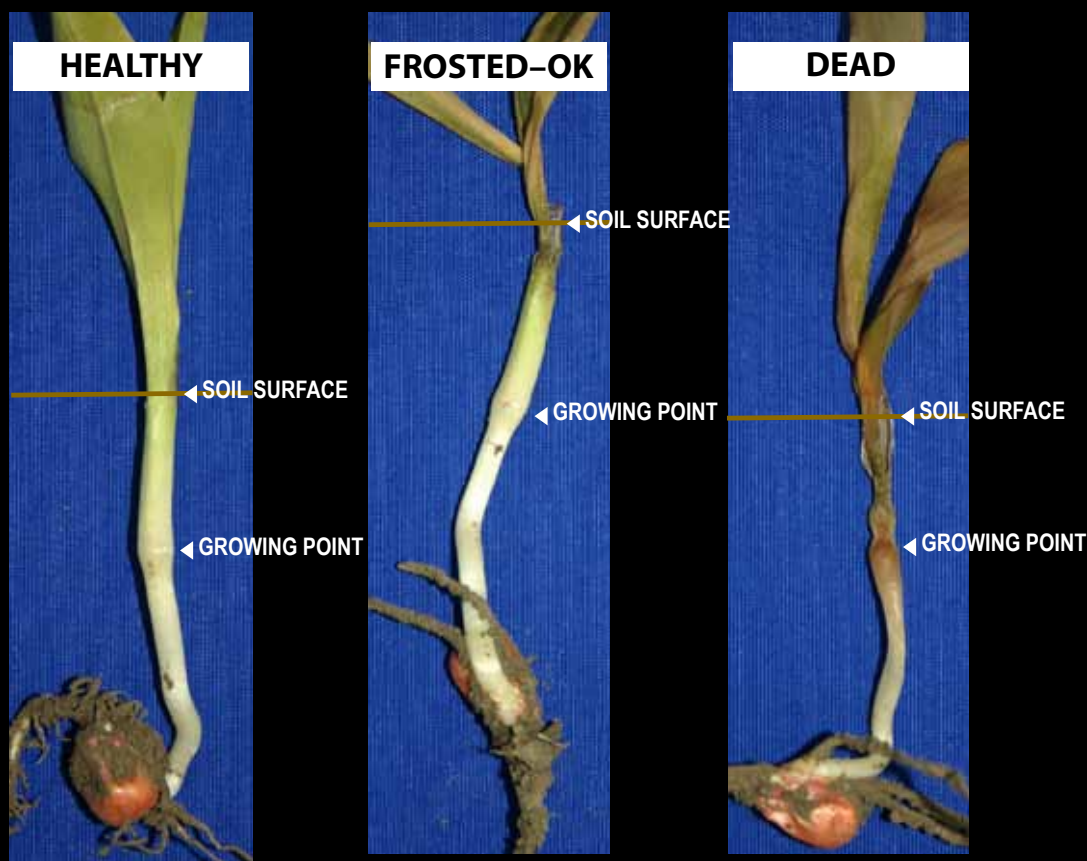
## Plant Evaluation

The growing point of a corn plant remains about 1/2 inch below ground until about the 5-collar stage, which keeps the plant reasonably protected from the effects of above ground frost. Frost damage to corn is usually minor and limited to above ground plant tissue.

*Corn can easily recover from this type of injury early in its development and suffer no yield loss.*

When air temperatures actually drop to lethal levels (28°F or less) for more than a few hours, the growing point of a young corn plant can be injured or killed even if it is still below the soil surface. The degree of lethal damage that occurs (even at 28°F or less) depends on your soil type and the amount of moisture in your soil. Corn plants in sandy soil or in very dry soil are more prone to freeze damage. Corn planted in low-lying muck areas may actually drop below the freezing mark quicker than other spots in the field.

The key requirement for assessing freeze damage is to **be patient** and to allow the plants to recover. While corn leaves may blacken and wither within a day after frost occurs, the true extent of plant damage may not be evident. After three to five days, surviving corn plants should be showing new leaf tissue expanding from the bleached or straw-colored whorls. If a significant portion of the population is obviously



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dead after this same period of time, then replanting may be justified.

Another way to assess whether a plant will survive is to split the plant in half (the below ground portion). A brown discoloration in the interior of the plant at the growing point would indicate the plant will not survive. A white or light green color indicates a live plant with a chance to continue development.

Wait to apply postemergence herbicides and fertilizers. Weeds won't be controlled and corn won't metabolize the

herbicide which will lead to greater risk of injury.

Another point to keep in mind—if frost injured corn was at the V2 growth stage when the frost set in and ends up losing two leaves because of the injury, when that plant resumes growth and two new leaves are produced the plant is now at V4, not V2. This can be a common misunderstanding that can have very detrimental effects, especially if you apply a herbicide when the corn plant is actually at V6 or V7, but you thought it was only V3-V5.

***The most important thing you can do is be patient!***



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