



Assessing Frost Damage

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Many of you enjoyed early-season warm temperatures and an ideal start for young corn seedlings. Unfortunately, some of you have just experienced frost on that emerged corn, which is far from ideal. Now what?

We'd recommend waiting three to five days after the frost to evaluate damage as sometimes the plants can bounce back, saving time and money on replant situations.

AgProfessional Weekly put together a great article about assessing frost injury to young corn. If you're in the midst of low temperatures and/or frost, this is definitely worth the read.

(The article is attached.)

Assessing frost/cold temperature injury to young corn

By [Bob Nielsen, Purdue University](#) May 22, 2015 | 8:20 am EDT



The risk of damaging spring frost events is one of the downsides to planting corn earlier than normal, but is one growers often accept when early spring field conditions are otherwise suitable for planting. However, the threat of low temperatures in late May or early June also raises the specter of frost or low temperature damage to young corn plants, regardless of planting date. Early morning temperatures in the 30s (F) coupled with clear calm conditions overnight certainly are favorable for frost formation on exposed surfaces, including leaves of young corn plants. In other words, temperatures do not need to drop to 32F or cooler in order for frost to form.

When significant frost develops on young corn plants, it is tempting to jump to the logical conclusion that significant plant mortality will soon follow. However, frost by itself is not a guaranteed "kiss of death" for young corn plants. What is more important is whether the temperature that accompanied the frost event was lethal or not. Most agronomists agree that "lethally cold" temperatures for young corn are those that dip to 28F or lower for 1 to 2 hours.

The effect of frost on young corn when it is accompanied by temperatures no lower than about 30F is primarily damage and death of the exposed above ground leaf tissue. As long as the growing point of the young plant (aka the apical meristem) is still protected below the soil surface, the injured plant usually recovers from the effects of the superficial leaf damage.

Within a number of days of the frost event (more quickly with warm temperatures, more slowly if cool), elongation of the undamaged leaf tissue in the whorl will become evident. As long as the recovery is vigorous, subsequent stand establishment should not be affected.

The bottom line for diagnosing the severity of frost or low temperature injury to corn is that you generally need to wait three to five days after the weather event before you can accurately assess the extent of damage or recovery. Injury to the crop can look very serious the day after the event or even two days after the event, but recovery is likely if there is no injury to the growing points of the affected plants.