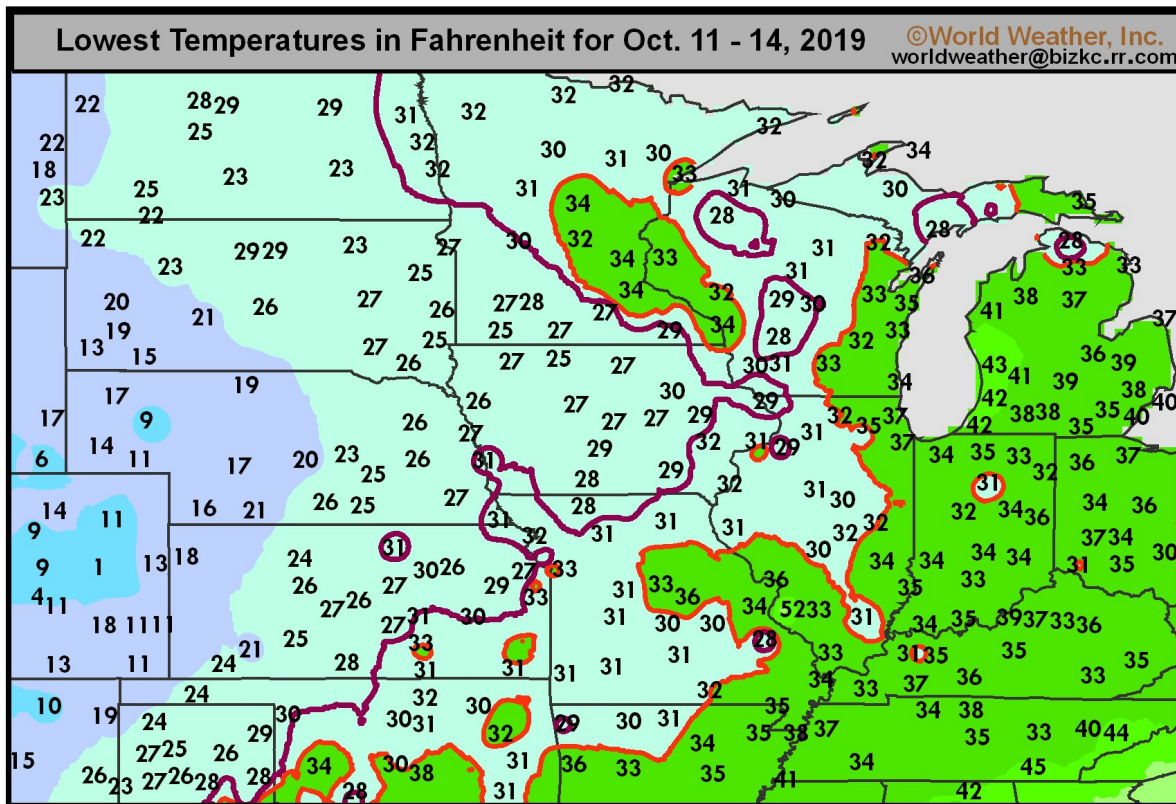


# Updated Oct. 11-14, 2019 Cold Event Preliminary Assessment

By Drew Lerner

Kansas City, October 13 (World Weather Inc.) – An impressive first season freeze event that occurred Friday through Monday across the U.S. Great Plains and western Corn Belt has likely ended in crop damage, but assessing the losses and impact on 2019 production will be extremely difficult until the harvest is complete. Iowa, southwestern Minnesota and areas from North Dakota to Nebraska and Kansas were most impacted.



Saturday and again Monday morning lows slipped to the upper 20s Fahrenheit in most of Iowa and in some immediate neighboring areas of northern Missouri and southern and west-central Minnesota. Previously (Friday morning) the coldest conditions were mostly in the Great Plains from North Dakota through central and western Kansas and Colorado to the Texas Panhandle. Crop damage was suspected in many immature summer crops from North Dakota to northwestern and a few west-central Texas locations Friday, but damage expanded Saturday through parts of Iowa while lighter freezes and sporadic damage likely occurred in Minnesota, Wisconsin, central Illinois, other areas in Missouri and eastern Kansas. Frost was reported in many areas as well.

Low temperatures below 30 degrees likely killed corn, immature soybeans, sorghum and other crops without any question. Lighter freezes of 30 to 32 degrees may have killed some plants depending on the duration of such temperatures and their location in the fields. Frost formation was likely limited in some areas of the Midwest because of cloud cover and wind and it is possible that some of the corn might have survived with only leaf mass damage, but that depends on how long temperatures were below freezing and how

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well the wind blew across some fields. There is a chance that with the wind blowing and no frost in some areas in the Midwest that the warm ground and dense plant population might have limited the damage at temperatures of 30-32, although *World Weather, Inc. is sure that some damage occurred in all of the immature fields. The extent of damage is likely to vary greatly based on exposure to the cold and its duration. Iowa was likely hardest hit along with southwestern Minnesota, far north-central Missouri and from North Dakota to the Texas Panhandle.*

Corn approaching “black layer” with just a week or two left might not have been as seriously impacted by the past two days of cold as crops experiencing sub 30-degree Fahrenheit low temperatures. An assessment of the damage will take several days after a warming trend begins and a full understanding of the loss may not be possible until the harvest is complete. Some Iowa farmers were harvesting pre-black layer corn and drying the crop with some loss, but for ethanol plants that kind of deal works well as long as the price received for the premature crop is enough to counter the discount in production. Corn raised for grain is another storm, however.

*There is little doubt that immature crops experiencing temperatures below 30 degrees were damaged. Losses in those instances will be determined by how much of the crop was fully mature.* A week ago only 52% of the Iowa crop was rated fully mature. Kansas corn was 84% mature a week ago, Nebraska 74%, South Dakota 36% and North Dakota only 22%. Minnesota corn was just 39% fully mature. *Some of these maturity percentages likely moved higher during the past week, but there was still many crops rated immaturity when the coldest conditions hit Friday and Saturday.*

*Losses in immature corn production may be widespread in the Dakotas, Nebraska, Kansas and Iowa with some crops in Northern Missouri and far southern Minnesota also included in the list. That represents a significant amount of crop damage and the impact on futures prices and supply and demand could become significant.*

Other crop damage has also occurred, but soybeans were already dropping leaves in many areas and their physiological state was already in a shutdown mode when the cold came this week because of reduced hours of daylight. With that said, immature soybeans that were subjected to the coldest temperatures below 28 may experience some shattering and that will result in production losses. Nebraska, a few areas in Kansas and a few areas in Iowa may have experienced this fate because of temperatures near and below 28 degrees Fahrenheit.

For immature soybeans in North Dakota and South Dakota as well as Manitoba, Canada, bean shattering will be limited to beans that were fully exposed to temperatures near and below 28 degrees Fahrenheit. However, the heavy snow event in these areas may have buried some of the beans in snow and that would have helped to protect them from shattering. However, beans buried in the snow will likely suffer a serious quality decline especially those crops that are in the deepest snow because of the extended period of time in which the bean will be exposed to moisture until the snow completely melts. The assessment for damage to beans in this region will not occur until the snow melts which is a week away and perhaps longer for some areas.

*Low temperatures in the upper 20s in Iowa both Saturday and again Monday were near and slightly below 28 degrees which may have induced some shattering and it will be important to pay attention to reports out of those areas for possible cut in production because of dropped pods.*

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Dry edible beans are facing the same issues in the Northern Plains and upper Midwest as soybeans.

**Sunday morning temperatures were not nearly as cold as those of Saturday or Monday.**

This week's blizzard in North Dakota and Manitoba and a few areas in Minnesota may have lodged sunseed and corn due to wind gusts of 40 to 60 mph. The amount of lodging was expected to be low for corn, but it is additional damage to crops that are already facing losses. Sunseed lodging will likely be higher.

**The cold is now over.** The threat of additional damage from freezing temperatures is passing, although there will still be some chilly air around periodically in the coming week.

The only crop areas in the U.S. Midwest that escaped the impact or significant frost and freezes during this entire event were in much of Michigan, Ohio, Kentucky and many areas in Indiana. There will be areas in central and eastern Missouri and southwestern and eastern Illinois that were also be unaffected by significant frost or freezes, but the impact farther west will be more significant and it will be very interesting to hear of the assessments in the next few weeks. Some of the mature crops will not be seriously impacted, but the most significantly immature crops may be lost and or suffer a notable quality decline.

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