

Agronomist: Monitor winter wheat crop for freeze damage

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(PhysOrg.com) -- Winter wheat producers should carefully monitor their crops over the next week to assess possible damage from late frosts.

That's according to South Dakota Cooperative Extension Agronomist Thandiwe Nleya, who said producers in different parts of South Dakota have reported freeze-injury on the winter wheat crop over that last two weeks.

"We encourage all winter wheat growers to closely eye their stands and to start considering management options," Nleya said. "To evaluate the damage, producers need to carefully monitor the crop three to five days after the low-temperature event because cool [weather](#) after the event may delay the appearance of injury symptoms."

Critical temperatures at which damage to winter wheat can occur include 12 degrees F at tillering stage, 24 degrees during jointing to early boot stage, and 28 degrees during late boot to head emergence stages.

"The degree of damage to the crop is also influenced by the duration of low temperatures," Nleya said. "Prolonged exposure to low temperatures causes much more injury than brief exposure to the same temperature."

Nleya said that if the crop is at tillering stage the growing point is just below the [soil surface](#) and is protected from injury.

"Most of the damage will therefore occur to the leaves," said Nleya.

"They become yellow in color and show burning at the tips within one to two days after freezing. Injury at this stage will slow growth and reduce tiller numbers."

At this stage, growth of new leaves and tillers usually resumes when higher temperatures return. Yield reduction may range from slight to moderate.

When low-temperature events happen at jointing stage, Nleya said leaves will show similar symptoms as when it happens at tillering stage, but that the most serious injury at this stage occurs to the growing point.

"Locate the growing point by splitting the stem, and look to see if the growing point is bright yellow-green," said Nleya. "A damaged growing point is white or brown and water-soaked in appearance."

Crops at boot stage that faced frost may show injuries on the small head found above the top node in the stem.

"A healthy head should be white or light green, and an amber or watery appearance would indicate freeze damage," Nleya added.

Freezing usually injures part of the wheat head or only plants in certain parts of the field especially depressions or low areas. Where main tillers have been damaged, secondary tillers may grow and enhance the stand.

"The general rule is that if a producer has 50 percent or more of his or her plant standing, the stand is adequate," she said. "If damage to the crop is widespread, producers may consider abandoning the crop, and producers should remember to check with their crop insurance adjusters before they re-seed."

Producers abandoning the winter crop also may want to consider re-

seeding to other crops. "The most likely [crops](#) for West River producers are milo, millet, and sunflowers," Nleya said. "Growers should consider the moisture situation and make the decision to re-seed based on whether there is adequate soil moisture for the alternate crop."

If moisture is not present, the land with the injured wheat can be summer fallowed and replanted to wheat in the fall, Nleya said.

"I'd remind all producers to carefully evaluate the freeze-injured winter wheat crop before destroying it and planting another crop," said Nleya. "They should consider the production costs they have incurred and the cost of producing the new crop."

Provided by South Dakota State University

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