

# Reproductive Management of Wheat

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## Aphids

High levels of English grain aphids have been found on wheat in South Dakota. If heavy pressure occurs at boot or flowering, yield loss can reach 30% and 20% respectively. Aphids primarily reduce yields due to direct feeding injury, but are also a known vector of Barley Yellow Dwarf virus. After heading, the aphids will move from the leaves, aggregate on the heads, and aggressively feed on the ripening kernels.



English grain aphid. Courtesy of SDSU Dept. of Plant Science: Virology

Thresholds are 50 aphids per plant in the boot to heading stage, 5 per plant when wheat is flowering, and 10 or more when the head is exposed. If insecticide treatment is required, several pyrethroid and organophosphate chemistries are labeled to control aphids in wheat. Be sure to check the pre-harvest interval when selecting an insecticide.

## Nitrogen

There are many factors that affect protein content of wheat. This season we have experienced climatic conditions that have reduced the ability of the plant to take up adequate nitrogen, resulting in lower protein contents. Average soil temperatures at the crown depth during the growing season, particularly growth initiation and soft dough stage, decrease nitrogen uptake and protein content. Rainfall from flag leaf to heading increases the percentage of tillers that will produce a head and may increase yield, but it dilutes the protein content. By this time the plant has already taken up 90% of the total amount of nitrogen it will take up through the roots, and the production of more heads will reduce the amount of nitrogen the plant can supply to each head, thus reducing the protein content.

Foliar applications of nitrogen, such as CoRoN<sup>®</sup> controlled release nitrogen, onto wheat will increase tissue nitrogen levels and can help make up for conditions that would otherwise limit grain protein content. Applying 20-30 lbs of N/acre will increase protein content by one percentage point.



Fusarium Head Blight (Head Scab). Courtesy of Purdue University Extension

## Head Scab

As the wheat crop approaches heading stage, a disease to watch for is Head Scab (*Fusarium* head blight). Infections that occur from head emergence through flowering cause the greatest yield losses from scab, which can also produce the mycotoxin deoxynivalenol (DON). Environmental conditions conducive to development of head scab are 75-85°F temperatures with high humidity and frequent rainfall, although infection can occur at lower temperatures with longer periods of humidity and moisture.

Infected spikelets will show bleaching of the kernels while healthy heads are still green and may produce additional spores that can infect other plants. Research indicates that triazole fungicides are effective for managing head scab and should be applied at early flowering. Viathon<sup>®</sup> fungicide has tebuconazole as one of its active ingredients, and is labeled for suppression of Head Scab.

# AGRONOMY ALERT

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