Spring Frost & Whiteheads in Morrow County

We all know the whiteheads we are seeing can be attributed, at least in part to the drought and/or dryland foot rot. All of the wheat in Morrow county is suffering from water stress. Some of the spring wheat has been hit pretty hard by Dryland (Fusarium) Foot Rot. Whiteheads are a symptom of both drought and dryland foot rot. The possibility of frost damage has been discussed and debated. A brief review of frost damage and how and when it can affect the wheat plant is provided in the paragraphs below.

One of the classical symptoms of damage from a spring frost is often referred to as “tip blighting,” a situation where the tip or upper 1/3 of the wheat head is white and devoid of kernels. Damage in the field is often noticed in low spots or draws because cold air either settles in or moves through these lower elevation areas. Damage from spring frost occurs because cellular protoplasm is frozen. Ice crystals enlarge and destroy cellular membranes.

Frost damage is usually not evident until after heading is complete. The actual time of damage though, often occurs earlier in the season and coincides with a time when reproductive cells are rapidly dividing and elongating. The growth stages at which the wheat plant is most vulnerable to damage from spring frost are after tillering (when the developing head is down inside the stem) and just before, during, or just after the “boot” stage. Temperatures of 28° or 29° F can cause spring-frost damage.