

Wheat Disease Update – 9 June 2021
Bob Hunger, Extension Wheat Pathologist
Department of Entomology & Plant Pathology
Oklahoma State University - 127 Noble Research Center
405-744-9958

During the last two days there have been a couple reports of dark wheat heads being observed in fields. This is a condition call sooty mold (aka black head mold) (Figure 1). These dark heads are the result of saprophytic (living of dead tissue) or weakly pathogenic fungi growing on the dead tissue in wheat heads. Reports of this have come from Greg Highfill (Alfalfa County Extension Educator in north central OK) and from Brad Secraw (Cleveland County Extension Educator in central OK). Additionally, I have observed severe sooty mold in some of the trials around Stillwater.

Sooty mold occurs when wheat has turned but cannot be harvested in a timely manner. Wet/humid conditions during a delayed harvest will then promote the fungal growth on wheat heads. Often wheat that has been subjected to a stress such as freeze, root rot, or drought shows a greater severity of sooty mold than if the wheat had been healthy and not stressed. This is the case in the top photo in Figure 1. The darker strips of wheat with sooty mold are the variety Pete, which was hit hard by the late freeze in April. The lighter, more golden colored heads with much less sooty mold are lines in one of Dr. Carver's nurseries. These breeder lines were not nearly as affected by the freeze as was the Pete. Although grain yield from wheat with sooty mold often is reduced, the sooty mold itself is not the primary cause of that reduce yield. Rather, it was the stress such as a freeze or root rot that was the primary cause of the reduced yield.

Figure 1. A field view of sooty mold (black head mold) on wheat at Stillwater, OK on June 9, 2021 (top photo). Note the darker appearance of the wheat heads in the alternating long, solid strips of wheat compared to lighter, more golden colored heads in the middle strip. The bottom two photos show wheat heads with sooty mold. [Photo credits bottom two photos – Left photo; Greg Highfill (Extn Educator, Alfalfa County); photo on right; Brad Secraw (Extn Educator, Cleveland County)].





One additional point to be made is that grain harvested from wheat with severe sooty mold may show a condition known as black point (Figure 2). Black point is a discoloration of the seed (typically the germ end of the seed) resulting either from infection by various fungi that typically are saprophytic but can occasionally parasitize living tissue, or from a combination of abiotic (environmental) conditions that promote the discoloration without the presence of an organism. Like sooty mold, black point often is observed when freeze damage has occurred or when harvest was delayed and dead tissue in the heads was heavily colonized by fungi that resulted in sooty mold. Black point in wheat grain can be a grading factor as the discoloration can result in black flecks in flour milled from such grain. Additionally, if used as seed wheat, kernels with black point can have reduce germination resulting in lower seedling emergence. Hence, if wheat showing black point is to be used as seed wheat, it is imperative to check the germination of that seed and to use a seed treatment that controls seed and seedling rots.

Figure 2. Wheat kernels with black point. The wheat kernels to the left and right show typical black point. The kernel in the middle is healthy. Ignore the reddish-pink color in the outer kernels as this is from an applied seed treatment.



FINALLY - This likely will be my last Wheat Disease update as my last day of work is July 9th. It has truly been a pleasure to send these updates!! I hope all of you have a great harvest this year and even better ones in the future!!!