Wheat Disease Update – 12 April 2022

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During the first and second week of April, some wheat diseases appeared in Oklahoma. For example, in the Stillwater Agronomy Research Station, I observed high powdery mildew infection on the susceptible wheat variety 'OK Bullet' (Figure 1). Similarly, Bradley Secraw (Extension educator at Cleveland county; March, 31, 2022) found little powdery mildew infection on the variety 'OK Corral' which is moderately resistant to this disease. In Stillwater and on April 11th, I observed initial stripe rust infection on OK Bullet (Figure 2). Also recall in my previous update of 25-March, I indicated seeing little stripe rust infection in Jackson country. Therefore, I encourage growers to start scouting their fields for these diseases, especially if they are growing susceptible varieties. We will continue to monitor these diseases as we approach flag leaf stage and provide recommendations.

Figure 1. Powdery mildew infection on the susceptible wheat variety 'OK Bullet' in Stillwater, OK (April, 11, 2022)

In the Stillwater Agronomy Research Station, I also observed barley yellow dwarf virus (BYD) symptoms on the susceptible wheat variety 'Pete'. The symptoms appeared as yellow, red/purple discoloration on the leaves as shown in Figure 2. This virus is transmitted from plant to plant by cereal aphids. Enzyme linked immunosorbent assay (ELISA) on a symptomatic sample from Pete was positive for two BYD strains; BYD strain 2 (BYDV-PAV) and cereal yellow dwarf (CYDV-RPV).

Figure 2. Barley yellow dwarf virus symptoms on the susceptible variety ‘Pete’ in Stillwater, OK (April, 5, 2022).

In Stillwater, I observed yellowing on the wheat variety ‘Lonerider’. Older leaves were completely chlorotic (Figure 3). Laboratory diagnosis of a sample using ELISA was positive for wheat streak mosaic virus (WSM) which is transmitted by wheat curl mite. This disease is an issue in our region as many wheat varieties growing in Oklahoma are susceptible to WSM.

Figure 3. Symptoms of wheat streak mosaic virus on the susceptible wheat variety ‘Lonerider’ in Stillwater, OK (April, 5, 2022).