Barley Yellow Dwarf Evident In Some Wheat Fields

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May 1, 2012 – Barley Yellow Dwarf (BYD), caused by a group of luteoviruses and generically referred to as barley yellow dwarf virus (BYDV), is showing up in numerous wheat fields across Kentucky, but is especially evident in central KY. The appearance of BYD is no surprise in light the fact that BYDV is transmitted by multiple aphid species and the very mild winter and early spring we have just experienced allowed aphids to remain active almost continuously since last fall. Barley yellow dwarf can infect various small grains grown in Kentucky, but most growers' interest and concern center on wheat because of the significant amount of wheat grown in the state. However, BYD is also visible this year in barley, oats and spelt.

Symptoms associated with BYD can be highly variable depending on the host species, cultivar, age and health status of plants at the time of infection, the BYDV type involved, and environmental conditions. Foliar symptoms include leaf yellowing (Figure 5) and/or purpling from tip to base and from margin to center. Plants infected early (fall, winter, very early spring) are often stunted, have decreased tiller numbers, and plants may appear "spiked" (flag leaf stands erect). Symptoms may occur in individual plants or in patches of plants. In addition, it is very common for discolored leaves to exhibit some leaf spotting/streaking associated with secondary bacterial infections.

Most of the fields showing BYD this spring in Kentucky (Figure 6) look to be fairly normal, except for discoloration of the flag leaf, and in some cases the F-1 leaf (i.e., second leaf from the top). Stunting does not appear to be extremely common, suggesting that most infections occurred mid- to late March. Plants might look pretty unhealthy, but our experience is that yield losses associated with late infections are minimal (10 percent or less).

As previously stated, wheat cultivars differ in regard to expression of BYD symptoms as well as potential yield effects. However, due to the sporadic occurrence of BYD from year to year, as well as the rapid turnover of wheat cultivars, little information is available in terms of cultivar resistance to BYDV or yield effects. Thus, most emphasis on managing BYD is centered on managing the aphid vectors that transmit BYDV. Δ

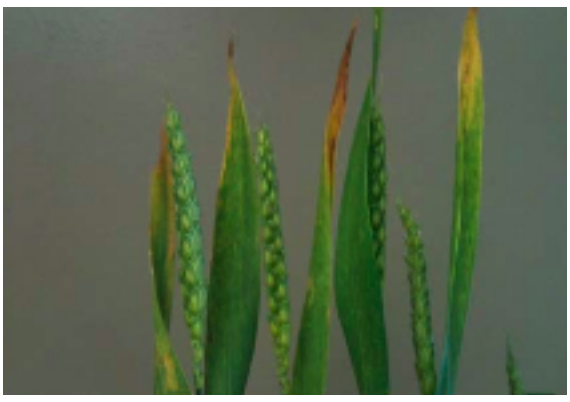

Figure 5. Typical leaf yellowing associated with Barley Yellow Dwarf in wheat (photo by Chad Lee).

Figure 6. Field shot showing yellowing associated with Barley Yellow Dwarf in wheat. Note scattered plants with yellowed leaf tips (photo by Chad Lee).

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