Fine Tuning Your Cereal Disease Management Toolbox

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Cereal disease management tools to reduce the impact of scald, net blotch, spot blotch, stripe rust, Septoria and Fusarium head blight are discussed for Atlantic Canadian cereal producers. Knowledge of the disease triangle, the use of quality seed, the impact crop rotation and the influence of timing concerning the application of fungicides are covered.

At the Atlantic Grains Council's Grain Symposium Kelly Turkington reviewed some ways that Atlantic Canadian cereal producers can use disease management tools to reduce the impact of cereal disease such as: scald, net blotch, spot blotch, stripe rust, Septoria and Fusarium head blight (FHB) which often elevates Deoxynivalenol (DON) levels. The entire presentation is available at: 2023 Grain Symposium.

Summary

Control of cereal diseases can take place when a producer influences one or more of the components of the Disease Triangle, Figure 1, by using the available tools including:

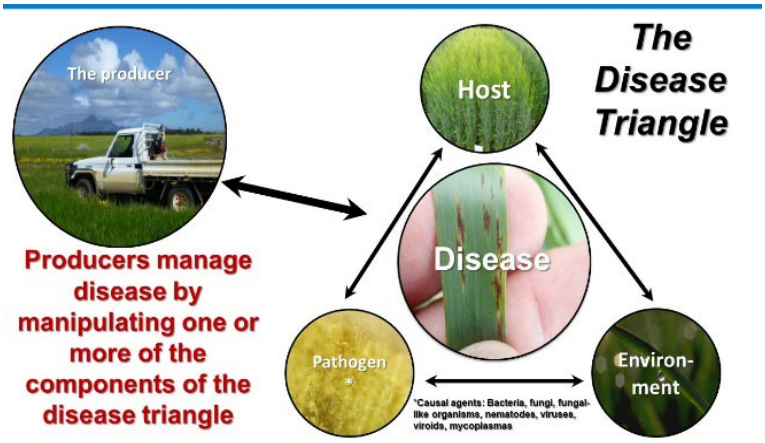

Figure 1: The Disease Triangle

1. Resistance
   - Use the current *Maritime Cereal Cultivars Performance Trial Report* to assess both a cereal varieties disease resistance and yield characteristics. Selecting a variety with enhanced resistance to expected diseases automatically builds in a degree of protection.
2. Seed
   - Use quality seed and seed treatment.
   - Adequate seeding rates, with good germination leads to more uniform head emergence and can improve FDK, and DON management.
   - Monitor grain which may be used for seed.
3. Rotation
   - Know that there is an enhanced risk of
   - disease occurrence with tight crop rotations, especially if crop residue remains on the soil surface.
   - Two years between host crops is a minimum. A single year between host crops is not sufficient for adequate decomposition of infested crop residues.
4. Fungicides
   - Typically need to be applied before extensive disease development - Limited activity on well-established infections.
   - Need to be applied directly to the plant tissues you want to protect - Typically do not move from one leaf to another.
   - Effective for up to 2-3 weeks.
   - Need right timing, right target, right product, right rate.
   - Focus more on the mid-latter part of the FHB label application window, see figure 2.
   - Scouting for leaf spot and rust diseases from tillering to head emergence can

help to identify emerging issues and the proper timing for a fungicide.

- Need to consider pre-harvest intervals and the economics of fungicide use.
- Addressing both FDK and DON management may require a change in mindset, regulations, and/or chemistries.

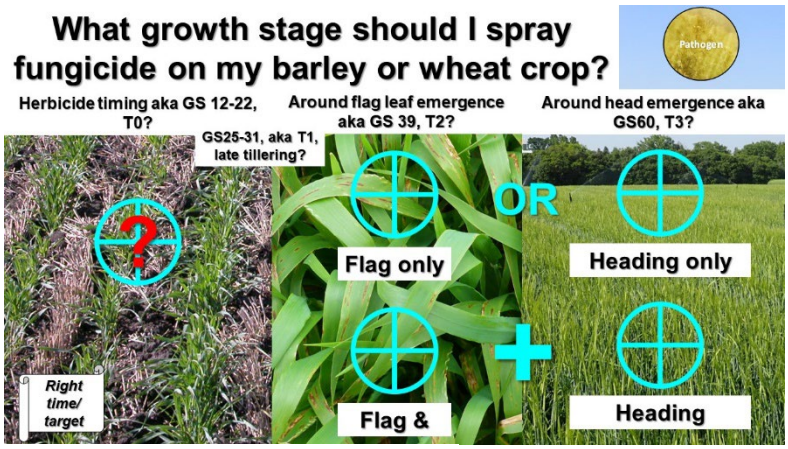

Figure 2: Fungicide timing

Turkington reported that using a fungicide to protect the flag leaf provided effective disease control and enhanced yield see figure 3. Herbicide timings for fungicide did not protect key upper canopy leaves.

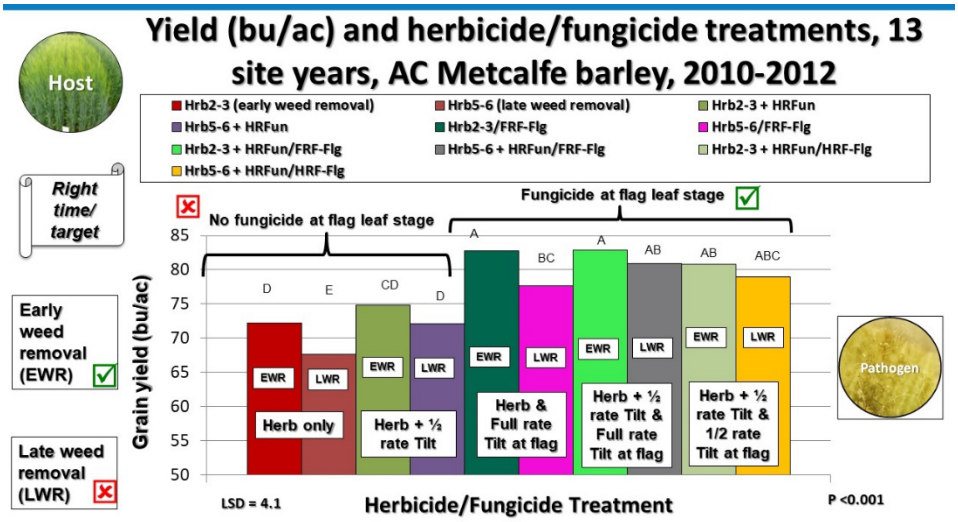

Figure 3: Impact of fungicide treatment