Stripe rust first. And then there is…..

Overall, things have been pretty quiet! That’s good news. I have seen very little Barley yellow dwarf, and no wheat streak mosaic virus yet. The weather is conducive for stripe rust and seedling damping off caused by Pythium. With the cool wet weather, I suspect there may be some strawbreaker foot rot showing up at some point, as well.

The conditions that make stripe rust problematic also lead to issues with strawbreaker foot rot. This disease occurs mainly in winter wheat with cool wet winters and wet spring conditions but last year we did see symptoms in spring wheat and barley. Excess moisture, high amounts of nitrogen fertilizer, lack of crop rotation, high humidity and host debris favor infection. One year out of cereals is not enough to break the disease cycle, and a wheat-wheat-potato rotation under irrigation has been found with strawbreaker foot rot as well as in continuous dryland winter wheat. Areas of yellow, unthrifty wheat with reduced tillers and plant height in the spring may be difficult to detect, but close to harvest large areas of wheat will lodge, and symptoms, including lesions at the base of the stem, are easily found. Look for elliptical lesions among dying tissue (leaf sheaths) at the base of stems, with the centers lighter than the brown margins. These lesions give strawbreaker it’s other name – eyespot. The disease is caused by a fungus called *Oculimacula yallundae* (don’t ask me how to pronounce it. Formerly named *Pseudocercosporella herpotrichoides*).

Reducing strawbreaker impacts in currently affected fields include applications of propiconizole fungicides (4 oz/A) in combination with other fungicides, or Topsin M WSB at 1 lb/A. The PNW Disease handbook (pnwhandbooks.org) includes the following recommendation: If 10% of the stems of susceptible varieties show lesions, application of fungicides at tillering but before stem elongation is recommended. (Often, it is too late to apply fungicides by the time this disease is detected in the field.) There are varieties with greater levels of resistance such as soft whites WB456, Otto, Jasper, Madsen, AP 700CL, and hard red LCS Colonia, which carry resistance genes Pch1 and/or Pch2. (Check Washington Crop Improvement Association Seed Guides at washingtoncrop.com.)

While signs of stripe rust have yet to develop, I have seen damage to spring wheat caused by Pythium. When barley and wheat get planted in cold, wet soils, Pythium can infect developing seedlings and completely take out the root system. Spring planted cereals are very vulnerable, and seed treatments must contain metalaxyl or mefanoxam to fight against infection by these “fungal-like” organisms. Since they are not “true fungi,” but water molds, a specific kind of fungicide is needed to protect the seed and seedlings. Make sure your crop is protected with one of these two seed treatments.

Let’s not forget cold damage that has been seen on winter crops as well as seedlings. One easy way to tell cold / frost / freezing damage on tips of winter wheat from BYD is to look for constrictions and necrosis on the leaf tips. Frost damage will result in yellowing of leaf tips, as will BYD. However, those frozen tips will have constrictions and necrosis (dead leaf tips – see Figure 1). Seedling of wheat and barley will also show color banding (see Figure 2). Sometimes it is hard to tell the difference, but hopefully these pictures will help you to see cold damage in winter and seedling wheat.
Questions? Concerns? Reports? If you see stripe rust, please let me know at jmarshall@uidaho.edu or call at 208-529-8376.

Figure 1. Cold damage in winter wheat. Note the line between healthy and damaged leaf tissue. Figure 2. Cold banding in spring wheat.