

**Cropland disease. Frost damage showing up in winter wheat heads, on peas and some damage to anticipate in the coming week (12 June, 2017).**

**1. Frost damage.** With cold temperatures during head formation and emergence, we're seeing a lot of white-tipped heads, most often restricted to the main tiller. We're also seeing trapped heads and twisted leaves, which can be attributed to frost, insect feeding during leaf/head formation, and in some cases, late applications of herbicide. Don't confuse frost tipped heads with Fusarium head blight. In the case of FHB, picture below, the bleaching will be 'incomplete' – this means the pattern won't be all the tips, it could be at the base or in the middle of the head or at the tip. A consistent pattern on tips indicates frost. The bleached heads are often associated with low areas where cold air settles.



Frost can be confused with FHB, which causes 'incomplete' bleaching and brown discoloration of rachis on a very susceptible variety:



2. **Drought and wind damage** on leaves. Causes shredding of leaf tips and 'leaf tip burn.' Symptoms may be exacerbated by poor root/crown health or anything else weakening the plant, such as drought.



3. **Hail damage in the coming weeks.** Bacterial diseases are associated with hail and driving wind damage. Symptoms in wheat and peas include 'watersoaked' lesions and an ooze that can dry on leaves. In pea, the key to discriminate from *Ascochyta* blight is that bacterial lesions stop at the leaf veins. There is no treatment for these diseases.



3. **Other observations:** Suspected fungal leaf diseases are starting to pour into the lab. These can take 2 to 5 days to sporulate in the lab after we receive a sample, so we're basically calling them based on symptoms and confirming after that moist chamber period. The majority of pulse crop samples have had no pathogens found, so the damage was likely caused by dew + frost, chemical burn, nutrient issues, or insect feeding injury. *We have had several photos of *Ascochyta* blight on chickpea submitted, and this rain system moving through will make conditions very favorable for disease development.*

We have had a number of WSMV samples with active mites. If the samples are too dry, it is very difficult to find wheat curl mites. Call the d-lab at 994-5150 or visit our website at [diagnostics.montana.edu](http://diagnostics.montana.edu) if you have any questions about how to submit a good sample.

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