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The Diseases Your Mum Warned You About!

*When nearing the ship date, it is especially disappointing to encounter garden mum wilt issues. With the 3 weeks of hot and dry conditions, followed by over a week of heavy rain, problems are bound to pop up. While both *Fusarium spp.* and *Pythium spp.* root rots can commonly plague a mum crop, during the past week several situations have occurred. This Alert aids in the process of diagnosing the differences between these two diseases.*



Figure 1. Comparison of the wilting pattern between *Fusarium* and *Pythium*. (Photo: Brian Whipker)

Both *Fusarium spp.* and *Pythium spp.* wilts can occur on garden mums (Fig. 1). Preventative fungicide applications are the primary method of control before problems appear. There have been a few excellent fungicide rotation articles written by Dr. Emma Lookabaugh and Jen Browning of BASF and Dr. Nancy Rechcigl of Syngenta that provide roadmaps to follow at the beginning of the season (see references).

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Unfortunately, once a plant is infected, there are not really any feasible curative treatments. The best option is to remove the plant from the field to avoid the further spread of the disease via irrigation water or plant debris.

Confirmation of Diagnosis

There can be confusion when trying to diagnose each of these diseases. There are some typical symptoms that occur and can help guide you through the diagnostic process. It is always a good idea to follow up an in-house diagnosis by submitting a sample to a lab for confirmation. If in doubt, send it out.

Typical *Fusarium spp.* and *Pythium spp.* Symptoms

A photographic guide of typical symptoms is provided for both *Pythium* (Fig. 2) and *Fusarium* (Fig. 3). It is best to examine multiple plants that recently developed symptoms. For example, *Fusarium* plants will eventually develop symptoms over the entire plant similar to a *Pythium* infection. In addition, completely dead plants can not be used to diagnose this problem.

In addition, a single page is provided at the end of the Alert so you can print it off and post it in the greenhouse.

Conclusion

Prevention of wilts starts at the beginning of the season. Once a plant is infected, there are no correction actions available. Being able to identify the problem will aid in developing future preventive strategies.

References

Lookabaugh, E. and J. Browning. 2023. Bloom into fall with perfectly protected mums. BASF. <https://betterplants.basf.us/multimedia/growwithusprotectedmums.html>

Rechcigl, N. 2023. Protecting garden mums against soilborne diseases. Syngenta.

<https://www.syngentaflowers-us.com/sites/g/files/kgtney846/files/media/document/2023/06/13/protectinggardenmumsagainstsoilbornediseselegalapproved6.13.23.pdf>

Figure 2. Typical symptoms of *Pythium*.

Pale green plants



Plant wilt



Yellowing of lower foliage



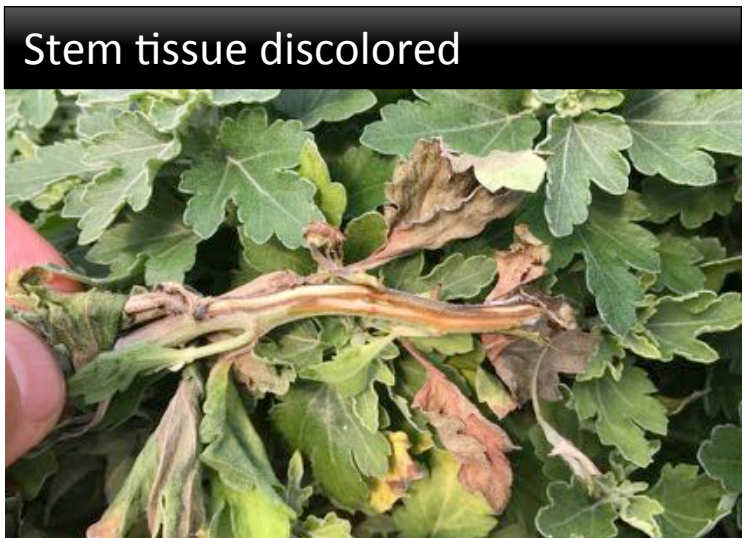
Stunted plants



Root rot



Figure 3. Typical symptoms of *Fusarium*.



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Brian Whipker & Patrick Veazie, Floriculture Research and Extension

A quick 3-step diagnostic check for identifying wilts. *Pythium* tends to result in entire plant wilting, have green stems, and discolored roots. *Fusarium* tends to develop discoloration and wilt on one side of the plant, have discolored stems, and good roots. If in doubt, sent it out to confirm your diagnosis.

Pythium

Fusarium

Plant View



Stem



Roots

