



Sample of the week: Hollyhock rust

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Figure 1. Yellow spots on upper leaf surface Photo Credit:
Caroline Jackson, University of Missouri Plant Diagnostic Clinic

Have strange orange and brown bumps plagued your flower beds this year? The prolonged cool temperatures and heavy precipitation this spring have allowed fungal pathogens to flourish. Here is one heavy infestation of Hollyhock rust, a disease that is caused by the fungal pathogen *Puccinia malvacearum*. Common hosts include *Alcea rosea*, (hollyhock), *Abutilon spp.* (flowering maple), *Malvaceae spp.* (rose mallow), and common weed mallow. It is one of the most common diseases of hollyhock.

Symptoms of the disease include the yellow to red spots on upper leaf surface, and brown pustules that appear blister-like occur on lower leaf surface and stem. Leaves that are heavily infected often wilt, turn brown and die. This disease is the most common of hollyhock and can spread rapidly from leaf to leaf. The fungus overwinters in the infected plant materials, and in the spring produce spores that are dispersed by wind to initiate infection on new plants.



Figure 2. Orange brown pustules on underside of leaf Photo Credit: Caroline Jackson, University of Missouri Plant Diagnostic Clinic



Figure 3. Orange to brown pustules on stem characteristic of rust pathogens

Photo Credit: Caroline Jackson, University of Missouri Plant Diagnostic Clinic

For appropriate diagnosis, the MU Plant Diagnostic Clinic can help you confirm if your plant has this disease. Please visit our website <http://plantclinic.missouri.edu/> and follow the instructions for collecting, packaging and shipping samples to the clinic.

More Resources about Hollyhock Rust:

<http://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/advice-tips-resources/pests-and-problems/diseases/rusts/rust-of-hollyhock.aspx>

Good cultural practices such as appropriate spacing between plants to allow better air flow to reduce leaf wetness will help prevent this disease and also manage it. Management can include weed control of *Malva rotundifolia*, or common mallow, which can act as an inoculum reservoir. Sanitation practices such as removal and burning of infected hollyhock stalks, stems, leaves or other host material will further reduce spores for infection. Fungicide products can be applied from the start of growing season (when the leaves are expanding before the first sign of the disease) through mid-July. Applications should be made frequently or when rainfall exceeds ½ inch. Fungicides recommended for control include chlorothalonil, sulfur, mancozeb, and maneb. Note that fungicides are preventative and do not cure already existing disease.



Figure 4. Teliospores of rust fungus *Puccinia heterospora* Photo Credit: Josephine Mgbechi-Ezeri, University of Missouri Plant Diagnostic Clinic

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