

KEEP YOUR GUARD UP FOR RUST ATTACKS

SITUATION

Sunflower rust is capable of wiping out yields throughout sunflower-growing regions. Scouting is essential to preventing widespread damage.

FACTORS TO CONSIDER

- Disease characteristics and cycle
- Identification
- Fungicides
- Seed variety

ACTION PLAN

- 1. Understand disease cycle.** The primary fungal cause of southern rust is *Puccinia helianthi*, which develops in warm, humid and wet conditions. Rust completes its entire **five-stage life cycle** in one year, beginning as spores overwinter on plant residue from the previous year's crop. Spores then germinate in the spring, passing through several phases before infectious cinnamon-red pustules emerge. The disease can multiply itself onto wild sunflowers by way of wind and even light dew, with the potential to harm entire fields.
- 2. Identify damage.** Rust is primarily marked by cinnamon-red pustules found on both the lower and upper leaf surface. When rubbed, the pustules smear the leaf surface. Eventually, pustules harden into a black structure that remains on the plant surface when rubbed. Not treating fields that have been infected early during vegetative development can cause plants to senesce prematurely — reducing test weight, oil content, seed size and yield.
- 3. Manage with fungicides and seed varieties.** **Fungicides** are the most effective way to prevent a sudden rust outbreak. Early season outbreaks are more damaging, possibly requiring multiple applications. Fungicide application should be considered when rust severity reaches 1 percent to 3 percent on the upper four leaves, prior to or during bloom (**R5 reproduction stage**). When flowering is complete (R6), fungicide applications are no longer economical.
- 4. Consider other management strategies.**
 - Fertilize heavily to produce dense plant canopies.
 - Plant a **sunflower hybrid** with rust protection. Confection sunflowers are much more susceptible to rust than oil sunflowers.
 - Control wild or volunteer sunflowers.
 - Rotate crops to help to break up the rust life cycle. However, this will not protect your crop from wind-related outbreaks.

SUMMARY

Without proactive management, sunflower rust can spread like wildfire. Consider disease severity and crop growth stage when determining if fungicide treatment is necessary. For more information, contact your local Mycogen Seeds customer agronomist or trusted agronomic adviser.



Image credit: University of Nebraska-Lincoln.

Sunflower rust is primarily identified by cinnamon-red pustules. The disease spreads rapidly under the right conditions.

AgronomyServices

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Resource: North Dakota State University Extension [Plant Disease Management](#)

Resource: North Dakota State University Extension [Sunflower Production](#)

Resource: National Sunflower Association [Rust Damage and Control](#)

Resource: North Dakota State University [Fungicide Guide – Sunflower](#)

Resource: North Dakota State University Extension [North Dakota and South Dakota Hybrid Sunflower Performance Testing 2011](#)

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