

## SUNFLOWER RUST MANAGEMENT

Rust is caused by the fungus, *Puccinia helianthi*. This fungus will only infect sunflower species and rusts on other plants will not infect sunflower. The disease can reduce head size, seed size, oil content and yield, but can only cause economic damage if it develops and becomes extensive in a crop prior to flowering. In general, confection hybrids are more susceptible than oilseed hybrids. Development of the disease on the crop after flowering will not affect yield. Free moisture on the leaves is required to initiate infection and epidemics occur during periods of rainy weather or heavy dews. Extensive rust development is shown in Fig. 1.



Fig. 1. Symptom of rust.

**Field diagnosis:** Rust pustules (Fig. 2) produce dark brown spores that easily rub off onto your fingers.



Fig. 2. Detail of rust pustules.

**When to spray a fungicide:** Scout the field frequently during the season. A small amount of rust on lower leaves is not a concern, particularly early in the season, before flowering. Lower leaves may have other diseases, but these do not need to be treated. A spray is economical if the severity of rust reaches 1% on the upper four, fully expanded leaves, prior to, or during bloom (R5). See Fig. 3 for an illustration of 1% disease severity. Application of fungicides after flowering is not likely to result in a yield benefit.

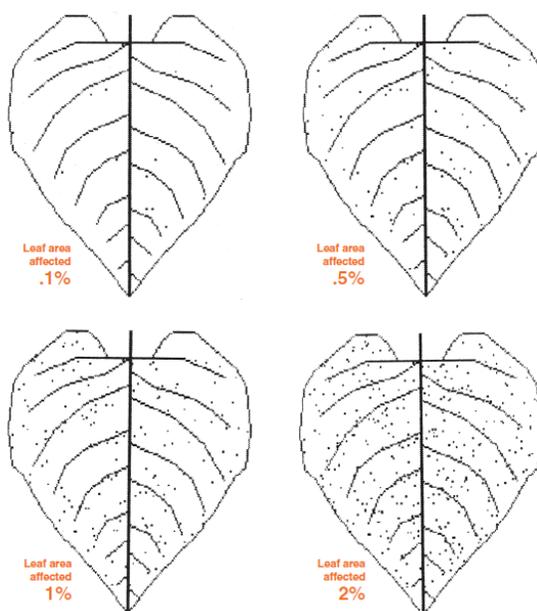


Fig. 3. Guide to determining rust severity on a leaf. (From NDSU Sunflower Rust PP-1557.)

Hybrids can differ in the level of rust resistance, so not all hybrids will benefit from a fungicide application.

**Fungicides for Control:** Labeled fungicides for sunflower rust include: azoxystrobin (Quadris, Satori, Equation), pyraclostrobin (Headline), fluxapyroxad + pyraclostrobin (Priaxor), and tebuconazole (Orius, Tebuzol and Monsoon). If the disease threshold is reached, a fungicide could be applied with an insecticide for head moth control, if there is no conflict in timing for either. Check the labels to verify mixing compatibility.

**Other controls:** Although spores of the fungus are moved by wind, the fungus has the potential to overwinter in crop debris, so if a crop has had rust, the field should be rotated out of sunflowers for the next year. Control wild sunflowers around the field.

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