

# Northern Ohio Field Notes

July 8, 2022 John Schoenhals, Pioneer Field Agronomist

## Tips to Maximize Fungicide Application to Corn

**Bottom Line:** Several weeks of hot, dry, low humidity weather from mid-June through early July has led to slow development of foliar disease; however, the return of moisture, humidity, and more moderate temperatures will likely lead to disease progression. Fungicide decisions should prioritize fields with average or above average yield potential. Well-timed fungicide applications are likely to provide a benefit again this season (2 pass applications in high management, corn-on-corn, or irrigated acres).

### What are the benefits of foliar fungicide in corn?

- **MORE BUSHEL + IMPROVED STANDABILITY/STALK QUALITY**
  - For corn growers managing for maximum yield, a foliar fungicide application is a recommended practice. Tar Spot and other foliar diseases can be aggressive, with large yield impacts and deterioration of stalk quality.
  - Fungicides protect against corn yield loss from infection by foliar fungal diseases that destroy leaf area. As leaf area is destroyed, the plant is unable to produce adequate amounts of sugars for the developing ear. This can lead to aborted kernels, smaller kernels, and cannibalization of the stalk, resulting in reduced yield and standability.

### What are current corn disease observations (early July)?

Several weeks of hot, dry, low humidity weather from mid-June through early July has led to slow development of foliar disease. Currently, **very low levels of tar spot, gray leaf spot, and common rust have been noted in the area.** Disease development is currently slower than in 2021, but with the return of moisture, humidity, and more moderate temperatures, more development is likely to occur.

### What factors/conditions will maximize the value of fungicide?

1. **Field Yield Potential:** Fields with good yield potential (timely planting, good stands, limited water/ compaction damage, etc) have the best potential payoff from a fungicide application
2. **Ideal environmental conditions:** Moderate temperatures (70-85 F) with frequent rainfall, humidity and/or heavy dews and foggy mornings.
3. **Hybrid Tolerance:** There are no fully resistant hybrids to foliar disease; however, ratings can be used as a guide for prioritization of application. While products with lower genetic tolerance will likely have a higher responsiveness to fungicide application, **fungicides have been shown to improve performance of even highly-rated products.** See ratings here: <https://corteva.showpad.com/share/PovkgNYhmPqDIU7nbC3x5>
4. **Management/Residue/Field History:** These factors increase the risk of foliar disease:
  - Corn back to Corn rotation
  - Irrigated fields
  - No-till/reduced tillage fields with corn residue on the surface
  - Fields with a history of foliar diseases

### What fungicide should I choose?

Fungicides with multiple modes of action are best. There is no “perfect” fungicide product- many products are effective against primary diseases. See ratings here: <https://corteva.showpad.com/share/8Vt6q2PfZCRqllalaXDqd>

### How long will a fungicide protect my crop from foliar diseases?

Fungicides provide good protection for 14-21 days, and then will begin to tail off.

The image shows a detailed table titled "Fungicide Efficacy for Control of Corn Diseases Table". The table lists various fungicide products and their effectiveness against different corn diseases. The diseases listed include Northern Leaf Blight (NLB), Gray Leaf Spot (GLS), Common Rust (CR), Tar Spot (TS), and Southern Rust (SR). The products are categorized by their mode of action (MOA) and are listed with their respective efficacy ratings for each disease. The table is organized into columns for each disease and rows for each product, with efficacy ratings ranging from 0 to 100%.

## When is the ideal timing for fungicide application?

- VT/R1 (50% of plants in tassel) has often been found to provide the most consistent yield benefit when disease pressure is found or conditions are conducive to disease development during late vegetative stages through silking/early reproductive stages.
- Brown Silk applications (aprx. 10-14 days after silking) can be beneficial when disease pressure/risk is lower (ie, dry weather earlier in the season)
- In some cases, (ie, high risk tar spot areas), a 2-pass fungicide program may be warranted. Best programs target either [V12/V14 followed by R2/R3] or [VT/R1 followed by R3].
- In the case of Tar Spot or Southern Rust, which can rapidly cause the crop to deteriorate, fungicide applications as late as R4 can be beneficial; however, once denting (R5) begins, the likelihood of an economic response is minimized.
- **More details here:** <https://corteva.showpad.com/share/WuBJrCasG9XKzVrknxxf1>

## If I see tar spot (or other diseases)- is it too late to spray a fungicide?

**No.** Fungicides are primarily protective (little curative activity on existing disease), but common diseases like tar spot continue to spread rapidly. Preventing further spread of disease by protecting the plant with a fungicide is important. By the time corn begins denting (R5), additional ROI is unlikely.

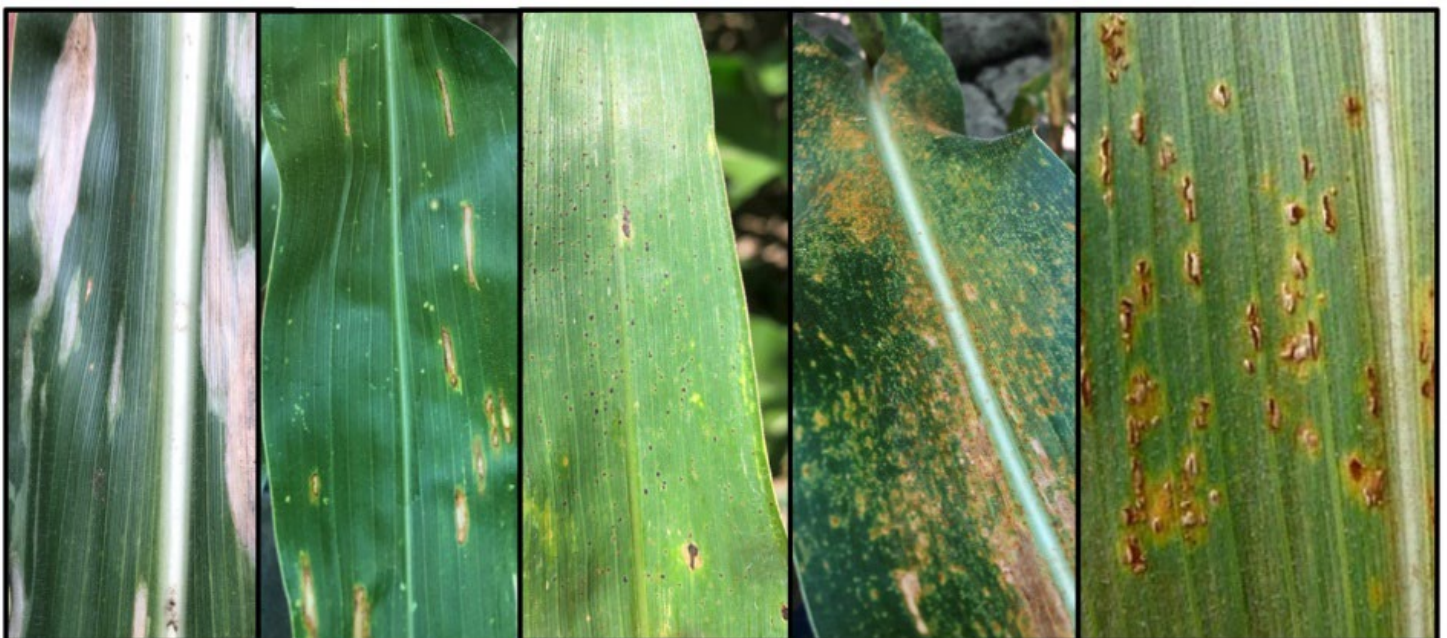
## If I apply a fungicide, will my corn be wetter at harvest?

Maybe. Typically, moisture of corn treated with and without fungicide is within 0.5-1%. If larger differences are noted, it is likely due to much improved plant health, leading to significant yield advantages. Where fungicides are not applied, plants may die early- resulting in dryer corn at the expense of significantly reduced yields, lower test weight, and major stalk quality issues.

## With many planting dates and an extended window when corn will be pollinating, is it better to be earlier or later than target timings?

The answer depends on several factors, but primarily weather conditions. If conditions are hot/dry and little disease is present, a delay in application timing can be beneficial. If disease is present and conditions are wet, earlier application would be good.

## Primary foliar diseases in corn:



Northern Corn  
Leaf Blight (NCLB)

Gray Leaf Spot (GLS)

Tar Spot

Southern Rust

Common Rust