

Fungicide Protecting Yield – Corn



JOHN DEERE

AGRONOMIC INSIGHTS



While herbicides are generally part of a corn producer's crop protection plan during the growing season, fungicides provide opportunities for protecting yield, too.

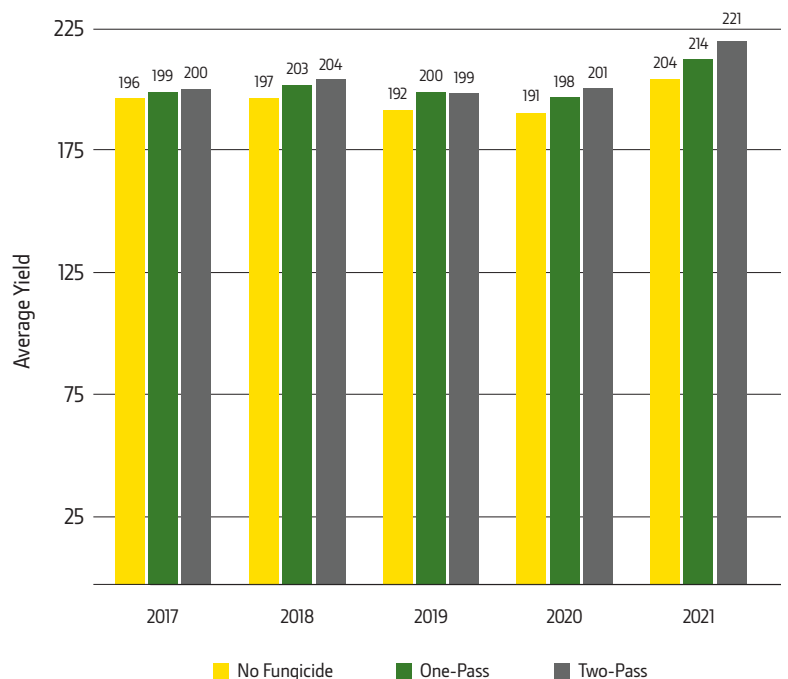
Less than 19% of corn acres are treated with a fungicide, according to the USDA Agricultural Chemical Use Study.¹

YIELD RESPONSE TO FUNGICIDE

From 2017-2021, there was an observed 3 to 9 bu/ac yield advantage with a one-pass fungicide program, with an additional 1 to 7.5 bu/ac gain with a two-pass fungicide program (with an exception for 2019).²



Yield difference between no fungicide, one-pass, and two-pass application programs



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TO APPLY OR NOT TO APPLY...

There are a lot of considerations to think through:

- The presence or conditions for new threats such as common and southern rust, leaf blight, grey leaf spot, and tar spot have appeared as problematic diseases.³
- Management decisions:
 - Are you going to be proactive or reactive?
 - If reactive, what will make you want to apply?
 - What is the availability of the product and/or applicator?
 - Weather?
 - Cost compared to projected ROI impact?
 - Apply on your highest potential yielding acres? Apply on acres that have susceptible variety or hybrid characteristics?

FACTORS THAT IMPACT TIMING OF FUNGICIDE APPLICATION:

- Determining the best time for fungicide applications is a combination of:
 - Disease presence
 - Crop growth stage
 - Environment
- The ability to use new systemic fungicide products on the market may allow you apply earlier – expanding the window for application and crop protection.
- Timing may be altered if a second fungicide pass is considered. The same management decisions to the left would apply.

JOHN DEERE SOLUTIONS

John Deere's Hagie™ STS sprayers leverage technology for precise and consistent application quality from start to finish – including hitting that critical application window.

Combined with the ability to access tall crops with high underframe clearance, the STS includes a number of additional features to improve fungicide applications.

- **AutoTrac™ RowSense™**: continues the use of AutoTrac while operating in later season canopied crop when rows are difficult to see, and previous guidance lines are not available or were not established.
- **Tall Crop Package**: reduce crop damage with a smooth transition for crop material as it passes under the sprayer chassis with shields, crop dividers, and wheel guards.
- **ExactApply™**: provides precise droplet sizing for a consistent rate by maintaining target rate and pressure with varying speeds, increasing the quality of application.
- **Rear Boom Package**: reduce crop disturbance after application with the center boom location at rear of machine.
- **AutoPath™**: generates guidance lines based off of planting pass and sprayer track spacing to get in the field and spraying quickly, while minimizing crop damage.
- **Field Analyzer in John Deere Operations Center™**: documents and measures application effectiveness by comparing yield of the applied area to the unapplied area, or compare yield results of an applied area to the whole field's average yield for more insight.
- **All-Wheel Steer**: reduce crop damage during turns with all wheel steer (AWS). The rear tires follow in the same path as the front tires during tight turns. AWS also reduces the turning radius, increasing maneuverability.

¹United States Department of Agriculture – National Agricultural Statistics Service. 2020 Agricultural Chemical Use Survey. https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Chemical_Use/2021_Field_Crops/chemhighlights-corn.pdf

²Based on anonymized operational data shared by John Deere customers.

³Crop Protection Network (2021). Fungicide efficacy for control of corn diseases.

<https://crop-protection-network.s3.amazonaws.com/publications/fungicide-efficacy-for-control-of-corn-diseases-filename-2021-07-14-205804.pdf>