# 2026 Soybean White Mold Product Impact on Yield

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Objectives were to demonstrate yield impact of white mold fungicide products in soybean, display white mold fungicide product portfolios from five industry collaborators, and provide unbiased evaluation of entries to allow growers to benchmark competitive performance of white mold fungicide products on the market. Growers should use the data set as a guide to visit with their crop consultants or local suppliers to determine a white mold fungicide, if any, that may provide the greatest white mold suppression and return on investments based on local supplier pricing and availability of products.

## MATERIALS AND METHODS

Experiments were conducted on a fine-textured webster-clay loam soil with 4.7% organic matter and a 6.9 soil pH near Renville, Minnesota, in 2026. Spring tillage was a field cultivator at 3" depth. Xitavo 1822E soybean was seeded 1.25 inches deep on 30-inch row spacing at 150,000 seeds per acre on May 7, emerging May 17. Studies were kept weed-free with a preemergent application of Sharpen (1 fl oz/A) and Authority Edge (13 fl oz/A) on May 7, followed by a postemergence application of Interline (32 fl oz/A), Warrant (48 fl oz/A), and AMS (3 lbs/A) on June 2. A subsequent postemergence application of Enlist One (32 fl oz/A), Roundup PowerMAX 3 (30 fl oz/A), and Section Three (10 fl oz/A) was applied on June 15. White mold treatments were applied at soybean growth stages R1 and R3. All treatments were applied with a backpack sprayer in a 20 GPA spray solution through AIXR11002 air-induction flat fan nozzles pressurized with $CO_2$ at 42 psi to the center two rows of four row plots 30-feet in length (Table 1). The middle two rows of the plots were inoculated with a blend of sclerotia based strains grown in a lab on oat straw and secured through Illinois State University and applied at 2 grams per row foot. The study was irrigated with a model 2000S "Big Sprinkler" sprinkler with large water droplets at 2,000 gallons per acre (equal to 0.075 inches of rainfall) on July 24, July 25, July 27, July 28, July 29, and July 30.

In season white mold evaluations were recorded as a numerical severity rating 0-3 and percent incidence on 20 plants per plot. The numerical severity rating scale was 0=no sign of disease, 1=infection of lateral branches, 2=disease present on main stem but pod fill normal, and 3=infection on main stem and plant is wilted or dead. Percent incidence and numerical 0-3 severity rating were combined into an industry standard formula represented as a "Severity Index" score. Severity index is a scale of 0-100 and is calculated as Dx=%incidence(as a whole number)*numerical severity average (of 20 plants)/3 with the higher values being more severe. A stay green evaluation was conducted on September 8, at 40% soybean senescence, with a TRIMBLE GREEN SEEKER. Yield data were collected on October 3 utilizing a Hege 160 two-row small plot research combine equipped with a HarvestMaster HM800 weigh hopper. The middle two rows of the four-row plot were harvested, and samples were taken with moisture and test weights recorded using a Perten 5200-A moisture tester. Experimental design was a randomized complete block with 4 replications. Data were analyzed with GLM procedure of SAS (Statistical Analysis Software, SAS Academic Studio October 20, 2026, SAS Institute, Inc.) at alpha=0.10 and differences are determined with 90% confidence; meaning, if the study was repeated 100 times, that 90 times out of 100 we would expect treatments that are statistically similar or different (within one LSD value of each other) to remain statistically similar or different.

| Table 1. Application Information for Renville White Mold Fungicide Trial in 2026. | | |
|---|---|---|
| Description | R1 Growth Stage | R3 Growth Stage |
| Application Code | A | B |
| Date | June 30 | July 9 |
| Time of Day | 9:00 AM | 12:30 PM |
| Air Temperature (F) | 76 | 79 |
| Relative Humidity (%) | 72 | 53 |
| Wind Velocity (mph) | 7 | 2 |
| Wind Direction | SW | NW |
| Soil Temp. (F at 6") | 70 | 71 |
| Soil Moisture | Good | Good |
| Cloud Cover (%) | 10 | 30 |
| Crop Growth Stage (avg) | R1 | R3 |

**RESULTS AND DISCUSSION**

Soybean white mold severity index scores, moisture, and yield were evaluated across four replications with each treatment appearing once within each replication to mitigate impact of field location and environment on the data set. Overall, the study was uniform and high yielding, with an average yield of 75.7 bu/A across the study. The average moisture across treatments was 15.5%. There was a 5.2 bu/A range in the yield data set. Data table has been displayed in descending order of yield data (Table 2).

White mold infection across the study did not occur until later in the season, first appearing at the R5 growth stage at a very low severity (Table 2). The highest treatment's average white mold severity index score was 5.41, which may have been too low to see yield impact. The infection also occurred later in the growing season, at the R5, beginning seed, growth stage. The later appearance of the infection may have limited the amount of yield loss that could have occurred and leads to question how much residual R1 fungicide activity still existed at the R7 evaluation September 2, exactly 64 days after the June 30 application. The late disease development may have occurred beyond the period of effective residual protection.

There were no statistical differences for the soybean stay green rating, the R7 severity rating, or yield; thus, only trends can be discussed with no level of certainty. The treatment with two application timings did not appear to have an advantage in this study. There were some statistical differences in moisture, perhaps indicating differences in plant health. The top yielding treatments had the highest moisture and the highest stay green ratings. However, these same two treatments also had the highest white mold severity at the R7 evaluation. A possible explanation is the higher plant health theoretically increased crop canopy density creating a more conducive environment for the white mold infection which likely arrived after the fungicide application had deteriorated in activity 64 days after application.

| Table 2. White Mold Fungicide Impact on White Mold Severity, Soybean Yield, and Moisture in 2026. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | App. | | | Harvest | | |
| Treatment | | Rate | Code[a] | R7 Severity | Stay Green | Yield | Moisture | Company |
| # | | oz/A* or fl oz/A | | | | Bu/A[b] | % | |
| 1 | VCP-044 | 8.5 | A | 5.40 | 80 | 78.3 | 16.1 ab | Vive |
| 2 | Phobos | 6.7 | A | 5.41 | 83.75 | 77.9 | 16.7 a | Vive |
| 3 | Telaron+Vacciplant+Topsin | 7+7+20 | A | 1.08 | 72.5 | 77.9 | 15.7 a-c | UPL |
| 4 | Untreated Check | - | - | 3.75 | 58.75 | 75.9 | 14.9 bc | - |
| 5 | Delaro Complete+NIS / Delaro Complete+NIS | 8+0.13%v/v / 8+0.13%v/v | A / B | 2.09 | 66.25 | 75.7 | 15.6 a-c | Bayer |
| 6 | Zorina+NIS | 20+0.13%v/v | A | 5.00 | 67.5 | 75.4 | 15.4 bc | BASF |
| 7 | Revytek | 7 | A | 2.08 | 68.75 | 74.8 | 15.7 a-c | NGA |
| 8 | Delaro Complete+NIS | 8+0.13%v/v | A | 3.33 | 67.5 | 74 | 14.9 bc | Bayer |
| 9 | Zolera FX+Vacciplant+Topsin | 5+7+20 | A | 1.67 | 61.25 | 73.6 | 15.3 bc | UPL |
| 10 | Viatude | 16 | A | 1.25 | 58.75 | 73.1 | 14.7 c | Corteva |
| | **LSD (0.1)** | | | **NS** | **NS** | **NS** | **1.3** | |

[a]Application codes refer to the information in Table 1.
[b]Bu/A=Soybean yield is corrected to a moisture of 13.5%. Same letters next to values are statistically similar values at alpha=0.1.

## CONCLUSION

White mold disease pressure and severity were lower than desired for demonstrating treatment differences. Disease infection severity relies on three factors, a susceptible host, a pathogen present, and a favorable environment. All three factors need to be present for an infestation to occur. The host (soybean) and pathogen (inoculated) were present; the environment was not favorable for a more severe disease development despite efforts to irrigate. This year's growing season environment 20 days after R1 applications was hot and dry with average temperatures in the 90's consecutively with only a single 0.5-inch rainfall event during that critical infection period for white mold during soybean flowering. White mold prefers cool and moist conditions, in a year with more ideal conditions, a more severe white mold infection would be expected. White mold is a difficult disease to consistently simulate in research, often 1 out of every 3 years is considered successful. Next Gen Ag takes significant measure in trial placement on the landscape, susceptible variety selection, increased planting population, timely inoculation of disease, and irrigation to try and effectively induce the disease in less-than-ideal environments, however, despite all those efforts, severe disease pressure is never guaranteed.

In this study, there were no statistical differences for the soybean stay green rating, R7 disease severity rating, or yield; thus, only trends can be discussed with no level of statistical certainty. Some trends were seen in moisture, suggesting potential plant health effects, which may have resulted in a denser soybean canopy positively impacting yield, but negatively increasing susceptibility to a non-yield impacting late infection of white mold.

If a grower has a known field consistently susceptible to white mold infection, there is likely enhanced inoculum presence from previous soybean crops, and an R1-R2 fungicide application is strongly recommended. If a grower has a field that only occasionally experiences white mold infection, they may consider the 14-day forecast once soybean flower has begun to determine if a cool, moist environment conducive to white mold infection may occur (take notice of evening lows and dew points, not just daily highs and humidity) and determine if there is a benefit to applying a white mold emphasized R1-R2 fungicide. If a grower has a field that has never experienced white mold, then likely, a general R2-R3 fungicide application without a white mold control emphasis is sufficient to provide protection from later arriving foliar diseases like cercospora, frog eye, or soybean rust rather than an early arriving white mold infection.

Growers should use this data set as a guide to visit with their crop consultants or local suppliers to determine an appropriate fungicide program, if any, that may provide the least amount of yield loss from white mold and the best return on investment based on their white mold disease pressure and on local supplier pricing and availability of products. Future research evaluating these fungicide programs should be considered, as greater white mold disease pressure would provide more opportunity to identify differences among treatments.

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