


Improving management of white mold in soybeans: Comparative fungicide efficacy – Miravis Neo

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Improving white mold management in soybeans:

Comparative fungicide efficacy – fundamental concepts

This is an abbreviated summary of comparative fungicide efficacy in field trials conducted from 2019-2024.

Included are all studies conducted 2019 to 2024. Starting in 2019, fungicide spray droplet size was calibrated relative to soybean canopy closure in all soybean white mold fungicide efficacy testing in Carrington and Oakes, ND.

Full results are available in the accompanying PDF fungicide efficacy testing results posted online at https://www.ndsu.edu/agriculture/ag-hub/research-extension-centers-recs/carrington-rec/research/plant-pathology (or search for 'NDSU Carrington plant pathology').

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Calibrating fungicide droplet size relative to soybean canopy closure is critical.

Calibrating fungicide droplet size relative to canopy closure sharply improves the performance of all fungicides for white mold management in soybeans and is particularly important for fungicides with intermediate efficacy.

The magnitude of the difference between the most effective fungicides and fungicides with intermediate efficacy is reduced when spray droplet size is optimized relative to soybean canopy closure.

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Comparative fungicide efficacy – methods

Soybean row spacing = 14”.

Seeding rate = 140,000 or 165,000 viable seeds/ac.

Spray volume = 15 gal/ac.

Fungicides applied with a hand-held boom pressurized by CO_2.

Spray droplet size: Fungicides applied with TeeJet nozzles emitting fine droplets when average canopy closure < 80%, medium droplets when average canopy closure was between 80 and 90%, medium-coarse or coarse droplets when average canopy closure was between 90 and 97%, and coarse droplets when canopy closure average 97-100%.

Number of experimental replicates = 6

White mold assessment: Assessed at soybean maturity by evaluating every plant individually in 1 or 2 rows/plot (entire length of row) for the percent of the plant impacted by white mold.

Application timing: when conditions favor white mold as soybeans enter bloom, 100% R2 or canopy closure, whichever occurred first; when conditions did not favor white mold as soybeans entered bloom, early/full R3; second application (when made) 7 to 14 days later.

Supplemental irrigation: Supplemental overhead irrigation was applied as needed to establish the white mold disease pressure needed to evaluate fungicide performance.

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Improving white mold management in soybeans:
Comparative fungicide efficacy – Miravis Neo

TWO FUNGICIDE APPLICATIONS

Endura 6 oz/ac **> Miravis Neo** 13.7 fl oz/ac

COMBINED ANALYSIS, 3 STUDIES
Carrington, ND (2021, 2022, 2024)

Two sequential fungicide applications 7 or 9 or 11 days apart

Endura: boscalid (FRAC 7)

Miravis Neo: pydiflumetofen (FRAC 7), azoxystrobin (FRAC 11), propiconazole (FRAC 3)

Revytek: mefentrifluconazole (FRAC 3)

Delaro Complete: fluopyram (FRAC 7), trifloxystrobin (FRAC 11), prothioconazole (FRAC 3)

	White mold Incidence **% plants**	**White mold** Severity Index **% canopy**	**Soybean Yield** bu/ac
Non-treated control	**54** c	**38** b	**45** b
Revytek 8 fl oz/ac	**50** bc	**33** ab	**48** ab
Miravis Neo 13.7 fl oz/ac	**47** abc	**30** ab	**51** ab
Endura 6 oz/ac	**30** ab	**19** a	**54** ab
Delaro Complete 8 fl oz/ac	**28** a	**17** a	**56** a
CV:	19	23.9	6.6

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TWO FUNGICIDE APPLICATIONS

Applied twice, Miravis Neo 13.7 fl oz/ac **reduced white mold by an average of approx. 20-25%.**

COMBINED ANALYSIS ACROSS 4 STUDIES
Carrington, ND (2019, 2020, 2021, 2024)

Two sequential fungicide applications 7 or 9 or 11 days apart

Miravis Neo: pydiflumetofen (FRAC 7), azoxystrobin (FRAC 11), propiconazole (FRAC 3)

	White mold Incidence **% plants**	**White mold** Severity Index **% canopy**	**Soybean Yield** bu/ac
Non-treated control	**60** a	**43** a	**40** b
Miravis Neo 13.7 fl oz/ac	**51** a	**33** a	**47** a
CV:	11.2	14.1	5.6

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TWO FUNGICIDE APPLICATIONS

Applied twice, Miravis Neo 20.8 fl oz/ac **reduced disease by an aveage approx. 20-25%.**

COMBINED ANALYSIS ACROSS 5 STUDIES
Carrington, ND (2019, 2020, 2021, 2024)

Two sequential fungicide applications 7 or 9 or 11 days apart

Miravis Neo: pydiflumetofen (FRAC 7), azoxystrobin (FRAC 11), propiconazole (FRAC 3)

	White mold Incidence **% plants**	**White mold** Severity Index **% canopy**	**Soybean Yield** bu/ac
Non-treated control	**41** b	**23** b	**44** a
Miravis Neo 20.8 fl oz/ac	**33** a	**18** a	**46** a
CV:	8.6	13.4	5.5

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SINGLE FUNGICIDE APPLICATION

Miravis Neo 13.7 fl oz/ac **> Revytek** 13.7 fl oz/ac

COMBINED ANALYSIS ACROSS 3 STUDIES

Carrington, ND (2020, 2021, 2024)

Revytek: mefentrifluconazole (FRAC 3), pyraclostrobin (FRAC 11), fluxapyroxad (FRAC 7)

Delaro Complete: fluopyram (FRAC 7), prothioconazole (FRAC 3), trifloxystrobin (FRAC 11)

	White mold Incidence **% plants**	**White mold** Severity Index **% canopy**	**Soybean Yield** bu/ac
Non-treated control	**24** b	**12** b	**54** b
Revytek 8 fl oz/ac	**25** b	**13** b	**55** b
Miravis Neo 13.7 fl oz/ac	**16** a	**8** a	**57** a
CV:	9.3	4.9	4.7

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SINGLE FUNGICIDE APPLICATION

Applied once, Miravis Neo 13.7 fl oz/ac **reduced white mold by an average of approx. 20%.**

COMBINED ANALYSIS ACROSS 4 STUDIES
Carrington, ND (2019, 2020, 2021, 2024)
Topsin/T-methyl: thiophanate-methyl (FRAC 1)
Endura: boscalid (FRAC 7)

	White mold Incidence **% plants**	**White mold** Severity Index **% canopy**	**Soybean Yield** bu/ac
Non-treated control	**38** b	**24** a	**47** a
Miravis Neo 13.7 fl oz/ac	**30** a	**19** a	**51** a
CV:	5.9	13	5.5

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Comparative fungicide efficacy – Miravis Neo

Approximate comparative efficacy ranking among those fungicides assessed relative to Miravis Neo:

1. Delaro Complete, 8 fl oz/ac
2. Endura, 6 oz/ac
3. Miravis Neo, 13.7 fl oz/ac
4. Revytek, 8 fl oz/ac

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