

Improving white mold management in dry beans:

Comparative fungicide efficacy – general methods

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Market class = pinto in most studies; kidney in some studies

Row spacing = 14 inches in most studies; 28 inches in some studies

Seeding rate = 90,000 viable seeds/ac in most studies; sometimes 80,000 viable seeds/ac

Fungicide spray volume = 15 gal/ac.

Fungicides applied with a hand-held boom pressurized by CO₂.

Fungicide spray droplet size: fine or medium in studies conducted from 2010-2021; fine, medium or coarse, calibrated relative to canopy density and lodging, from 2022-2024.

Number of fungicide applications: two

Application timing, first fungicide application: early bloom and initial pin pod-pod

Interval between fungicide applications: 7 to 14 days later, depending on study

Number of experimental replicates = 5 or 6 replicates (most studies)

White mold assessment: Assessed at or near dry bean maturity by evaluating every plant individually in for the percent of the plant impacted by white mold.

Harvest: To ensure that variability in dry bean standability did not bias yields, plants were clipped at base concurrent with disease assessments, wind-rowed to dry, and manually lifted into the combine.

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

1. Fungicides and fungicide application rates that can be applied twice in-season

Testing was conducted with two sequential applications of the same fungicide with the goal of rigorously assessing comparative efficacy.

These comparative efficacy results are provided to help facilitate informed decisions for selecting products for application once or twice in-season, either alone or in rotation with another fungicide.

Comparative fungicide efficacy: Management of white mold in dry edible beans

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Endura: active ingredient, boscalid (FRAC 7) Badge SC: copper oxychloride + copper hydroxide

Endura 8 oz versus Endura 8 oz + Badge 2 pt

Two sequential applications of the same fungicide (early bloom/pin-pod + 11, 12 or 13 days apart)

	location Carrington	Carrington	Carrington	COMBINED ANALYSIS 3 studies
	year 2020	2019	2022	
days between applications	13	14	12	
nozzles, pressure, 1 st application	AIXR110015, 60 psi	AIXR110015, 50 psi	DG110015, 40 psi	
nozzles, pressure, 2 nd application	AIXR110015, 50 psi	XR11002, 30 psi	AIXR110015, 60 psi	
droplet size	medium, medium	medium, fine	fine, medium	
variety	'Palomino' pinto	'Palomino' pinto	'Lariat' pinto	
row spacing	14 inches	14 inches	14 inches	
WHITE MOLD SEVERITY (% of canopy)				White mold (%)
Non-treated control	74 b	37 b	90 b	67 b
Endura 8.0 oz/ac	55 ab	5 a	76 a	45 a
Endura 8 oz/ac + Badge 2 pt/ac	51 a	3 a	79 ab	44 a
CV:	16.4	36.5	8.1	12.1
YIELD (lbs/ac)				Yield (lbs/ac)
Non-treated control	1842 b	3190 a	1498 b	2177 b
Endura 8.0 oz/ac	2692 ab	3472 a	2478 a	2881 a
Endura 8 oz/ac + Badge 2 pt/ac	2886 a	3755 a	2387 a	3010 a
CV:	18.4	10.0	17.2	7.4

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Topsin: thiophanate-methyl (FRAC 1) Badge SC: copper oxychloride + copper hydroxide ProPulse: fluopyram (FRAC 7) + prothioconazole (FRAC 3)

Topsin, Propulse applied with and without Badge				
Two sequential applications of the same fungicide (early bloom/pin-pod + 12 or 13 days apart)	location, year	Carrington, 2020	Carrington, 2022	COMBINED ANALYSIS 2 studies
	days between applications	13	12	
	nozzles, pressure, 1st app.	AIXR110015, 60 psi	DG110015, 40 psi	
	nozzles, pressure, 2 nd app.	AIXR110015, 50 psi	AIXR110015, 60 psi	
	droplet size, app. #1, #2	medium, medium	fine, medium	
variety		'Palomino' pinto	'Lariat' pinto	
row spacing		14 inches	14 inches	
Topsin (30 fl oz/ac) applied with and without Badge				
Topsin (30 fl oz/ac) applied with and without Badge	WHITE MOLD SEVERITY (% of canopy)			
	Non-treated control	74 a	90 b	82 b
	Topsin 30 fl oz/ac	71 a	81 ab	76 ab
	Topsin 30 fl oz + Badge 2 pt/ac	60 a	74 a	67 a
	CV:	16.4	8.1	2.7
	YIELD (lbs/ac)			
	Non-treated control	1842 a	1498 b	1670 b
	Topsin 30 fl oz/ac	2170 a	2104 a	2137 ab
	Topsin 30 fl oz + Badge 2 pt/ac	2455 a	2451 a	2453 a
	CV:	18.4	17.2	6.1
ProPulse (10.3 fl oz/ac) applied with and without Badge				
ProPulse (10.3 fl oz) applied with and without Badge	WHITE MOLD SEVERITY (% of canopy)			
	Non-treated control	74 a	90 a	82 a
	ProPulse 10.3 fl oz/ac	68 a	81 a	74 a
	ProPulse 10.3 fl oz + Badge 2 pt/ac	69 a	85 a	77 a
	CV:	16.4	8.1	2.0
	YIELD (lbs/ac)			
	Non-treated control	1842 a	1498 b	1670 b
	ProPulse 10.3 fl oz/ac	2369 a	2162 a	2265 a
	ProPulse 10.3 fl oz + Badge 2 pt/ac	2381 a	1841 ab	2111 a
	CV:	18.4	17.2	5.9



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