

Dry Edible Bean Seed Treatment

Chemical	Application	Dosage ¹	Control ² of Seedling Blights ³	Remarks
Azoxystrobin (11) Dynasty, 9.6%	Slurry	0.153-0.765 fl oz/cwt	X	For seed-borne and soil-borne fungi.
Carboxin (7) Vitavax-34, 34%	Slurry or mist	3-4 fl oz/cwt	X	For <i>Rhizoctonia</i> seed rots, damping off and seedling blight.
Carboxin (7) + Thiram (M3) Vitaflo-280 15.59%; 13.25%	Slurry or mist	4 fl oz/cwt	X	For seed-borne and soil-borne diseases including <i>Rhizoctonia</i> , <i>Fusarium</i> and <i>Pythium</i> .
Captan (M4) Captan 400, 38.4%	See label for rates of application, formulations and registered use	See label for amounts of formulated product to apply	X	
Chloroneb (14) Chloroneb 65W, 65%	Slurry	4 oz/cwt	X	May be used as a supplemental seed treatment for improved suppression of <i>Rhizoctonia</i> and <i>Pythium</i> .
Fludioxonil (12) Maxim 4FS, 40.3% Spirato 480 FS, 40.3% Dyna-Shield Fludioxonil, 40.3%	Slurry Slurry Slurry	0.08-0.16 fl oz/cwt	X X X	For seed-borne and soil-borne fungi. Registered for control of <i>Rhizoctonia</i> and <i>Fusarium</i> .
Fludioxonil (12) + Mefenoxam (4) Apron Maxx RFC 2.31%:3.46%	Slurry	1.5 fl oz/cwt	X	For <i>Fusarium</i> and <i>Rhizoctonia</i> control.
Ipconazole (3) Rancona 3.8 FS, 40.7%	Slurry or mist	0.085 fl oz/cwt	X	Does not provide control of <i>Pythium</i>
Ipconazole (3) + Metalaxyl (4) Rancona Summit, 0.902%: 1.443%	Slurry or mist	4.0 fl oz/cwt	X	
Mefenoxam (4) Apron XL, 33.3%	Slurry or mist	0.32-0.64 fl oz/cwt	X	For <i>Pythium</i> control. For both commercial and on-farm use.

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³Seedling blights due to various fungal infections of seed.

Note: Some seed treatments may affect Rhizobia inoculants; read inoculant label for specific information.

Dry Edible Bean Seed Treatment (continued)

Chemical	Application	Dosage ¹	Control ² of Seedling Blights ³	Remarks
Metalaxyl (4) Allegiance FL, 28.35% Sebring 318 FS, 28.35%Allegiance Dry Seed Protectant, 12.5% Dyna-Shield, 28.35% Belmont 2.7 FS, 28.98%	Mist or slurry	0.75 fl oz/cwt	X	Metalaxyl is only for <i>Pythium</i> damping control. For use only with commercial seed treatment equipment. Apron Dry Seed Protectant is for drill box application to seed not previously treated with Apron; thorough mixing of fungicide and seed is essential for good control.
	Drill box	4 oz/cwt	X	
	Slurry	0.75 fl oz/cwt	X	
	Slurry or mist	0.75 fl oz/cwt	X	
Mefenoxam (4) + Fludioxonil (12) + Thiamethoxam CruiserMaxx 1.7%:1.12%:22.6%	Slurry or mix	3 fl oz/cwt	X	For seed-borne and soil-borne fungi and insects. Contains thiamethoxam for insect control.
Mefenoxam (4) + Fludioxonil (12) + Sedaxane (7) + Thiamethoxam CruiserMaxx Vibrance, 3.13%; 1.04%; 1.04%; 20.8%	Slurry or mix	3.22 fl oz/cwt	X	For seed-borne and soil-borne fungi and insects. Contains thiamethoxam for insect control.
Metalaxyl (4) + PCNB (14) + Carboxin (7) Prevail, 3.12%:15%:15%	Drill box	6-8 oz/cwt	X	Controls early season <i>Pythium</i> and <i>Rhizoctonia</i> .
Prothioconazole (3) + Penflufen (7) + Metalaxyl (4) EverGol Energy 7.18% : 3.59% : 5.74%	Slurry or mist	1 fl oz/cwt	X	For seed-borne and soil-borne fungi and seed rot and damping off caused by <i>Rhizoctonia</i> .
Pyraclostrobin (11) Stamina, 18.4%	Slurry or mist	0.4-1.5 fl oz/cwt	X	For seed-borne and soil-borne fungi.
Sedaxane (7) Vibrance, 43.7%	Slurry	0.08-0.16 fl oz/cwt or 2.5-5 gai/100 kg of seed	X	For seed decay, seedling blights, and damping off caused by <i>Rhizoctonia</i>
Sedaxane (7) + Mefenoxam (4) + Fludioxonil (12) Vibrance Maxx, 4.69%; 3.52%; 2.35%	Slurry	1.54 fl oz/cwt	X	For seed-borne and soil-borne diseases caused by <i>Rhizoctonia</i> , <i>Pythium</i> and <i>Fusarium</i> .
Thiabendazole (1) Mertect 340-F, 42.3%	Slurry	0.30-0.67 fl oz/cwt	X	For seedling diseases caused by <i>Fusarium</i> spp.

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Note: Some seed treatments may affect Rhizobia inoculants; read inoculant label for specific information.

Dry Edible Bean Seed Treatment (continued)

Chemical	Application	Dosage ¹	Control ² of Seedling Blights ³	Remarks
Thiram (M3) 42-S Thiram, 42% Signet 480 FS, 42%	Liquid or slurry	2 fl oz/cwt	X	
Thiram 50WP Dyed, 50%	Drill box or slurry	2 oz/cwt	X	
Toclofos-methyl (14) Rizolex, 42%	Slurry or mist	0.3 fl oz/cwt	X	For seed-borne and soil-borne diseases. Controls <i>Rhizoctonia</i> and <i>Fusarium</i> species.
Fluxapyroxad (7) + Pyraclostrobin (11) + Metalaxyl (4) Obvius, 1.58%; 1.58%; 1.26%	RTA Slurry	4.6 fl oz/cwt	X	Control of <i>Rhizoctonia</i> sp., <i>Fusarium</i> sp., <i>Pythium</i> sp., <i>Botrytis</i> sp. and <i>Colletotricum</i> sp. (seed borne).

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Dry Edible Bean Soil Application

Chemical (Fungicide Group)	Application	Dosage ¹	Control ² of Rhizoctonia	Remarks
Azoxystrobin (11) + Metalaxyl (4) Uniform 28.2%:10.9%	In-furrow	0.34 fl oz/1,000 linear feet of row	X	Apply in a 7-inch band. One application per season.
Bacillus subtilis strain QST 713 (44) Serenade ASO, 1.34%	In-furrow	2-6 fl qt/A	X	Apply as directed spray in the seed furrow and to covering soil at planting.
Bacillus amyloliquefaciens strain D747 (44) + Bifenthrin Ethos XB, 5.0%; 15.67%	In-furrow	4-17 fl oz/A	X	Restricted use pesticide. Suppression of seedling blights.

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³See fungicide resistance management statements on Pages 7-8.

Dry Edible Bean Soil Application (continued)

Chemical (Fungicide Group)	Application	Dosage ¹	Control ² of Rhizoctonia	Remarks
PCNB (14) Terraclor FL, 40%	In-furrow spray	2.2-3.3 fl oz/1,000 linear feet of row	X	Spray planting furrow and covering soil at planting. Do not apply to seed. Use lower rates on lighter soils.
Terraclor 75 WP, 75%	In-furrow spray	1.4-2.2 oz/1,000 linear feet of row	X	Apply as a directed spray in the seed furrow and to covering soil at planting.
Terraclor EC, 23.8%	In-furrow spray	4.4-6.6 fl oz/1,000 linear feet of row	X	Spray planting furrow and covering soil at planting. Do not apply directly to seed. Use lower rates on lighter soils.
PCNB 2 Spray, 24%	In-furrow spray	8.8 fl oz/1,000 linear feet of row	X	
Terraclor 10G, 10%	In-furrow granules	0.75-1 lb/1,000 linear feet of row	X	Apply in planting furrow and covering soil at planting.
PCNB (14) + Metalaxyl (4) Ridomil Gold PC GR 10%: 0.5%	In-furrow granules	0.75 lb/1,000 linear feet of row	X	Resistance statement 4 ³ . Adjust application equipment so granules are mixed with soil surrounding seed. See label for planting restrictions within 12 months of application.

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Dry Edible Bean Foliar Sprays

Chemical (Fungicide Group)	Application ¹	Dosage ²	Disease Control ³				Remarks
			Anthraco- nose	Rust	Halo Blight	White Mold	
Bacillus subtilis strain QST 713 (44) Serenade ASO, 1.34%	Spray or fungigation	2-6 qt/A		X		X	Begin applications when environmental conditions and plant stage are conducive to disease development.

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Dry Edible Bean Foliar Sprays (continued)

Chemical (Fungicide Group)	Application ¹	Dosage ²	Disease Control ³				Remarks
			Anthraco-nose	Rust	Halo Blight	White Mold	
<i>Bacillus subtilis</i> strain QST 713 (44) Serenade ASO, 1.34%	Spray or fungigation	2-6 qt/A		X		X	Begin applications when environmental conditions and plant stage are conducive to disease development.
Boscalid (7) Endura, 70%	Spray or fungigation	8-11 oz/A				X	Apply at the beginning of flowering, prior to disease onset. Use higher rate for extended protection. Make a second application at full bloom if conditions continue to be favorable for disease development. Do not apply within 21 days of harvest.
Chlorothalonil (M5) Bravo WeatherStik Echo, Echo 720, Chlorothalonil 720, Equus 720 SST, 54%	Spray or fungigation	1 3/8-2 pt/A	X	X			Do not apply chlorothalonil within 14 days of harvest. See publication PP-576, "Dry Edible Bean Diseases." Carefully monitor fields for disease. Bravo Zn, Bravo ZN, Echo Zn and Terranil Zn also contain zinc.
Bravo Ultrex DG, or Equus DF, 82.5%	Spray or fungigation	1.25-1.8 lb/A	X	X			
Echo Zn, Bravo ZN or Terranil Zn, 38.5%	Spray or fungigation	2-3 pt/A	X	X			
Echo 90 DF, 90%	Spray or fungigation	1.13-1.63 lb/A	X	X			
Praiz, 54%	Spray or fungigation	1 3/8-2 pt/A	X	X			
Vabro, 54%	Spray or fungigation	1 3/8-2 pt/A	X	X			

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Dry Edible Bean Foliar Sprays (continued)

Chemical (Fungicide Group)	Application ¹	Dosage ²	Disease Control ³				Remarks
			Anthracnose	Rust	Halo Blight	White Mold	
Copper (M1) Basicop WP, 53%	Spray	2-4 lbs/A			X		
Champ DP, 57.6%	Spray or fungigation	0.66-2 lb/A			X		
Champ Formula 2 Flowable, 37.5%	Spray or fungigation	0.66-2 pt/A			X		
Champion++ 46.1%	Spray or fungigation	0.5-1.25 lb/A			X		
Cuprofix Ultra 40 Disprss 71.1%	Spray or fungigation	0.75-2 lbs/A			X		
Kocide 2000, 53.8%	Spray or fungigation	0.75-2.25 lb/A			X		
Kocide 3000, 46.1%	Spray or fungigation	0.5-1.25 lb/A			X		
Kocide 4.5 LF, 37.5%	Spray or fungigation	0.66-2 pt/A			X		
MasterCop, 21.46%	Spray or fungigation	0.5-1.0 pt/A			X		
Badge X2, 45.31%	Spray or fungigation	0.5-1.25 lbs/A			X		
Badge SC, 32.17%	Spray or fungigation	1-2 lbs/A			X		
Difenoconazole (3) + Benzovindiflupyr (7) Aprovia Top, 11.25%; 7.50%	Spray or fungigation	10.5-11 fl oz/A	X	X			Begin applications prior to disease onset when conditions are conducive for disease. Do not make more than two sequential applications before alternating to a fungicide from a different group. Do not apply more than 22 fl oz/A per year. PHI = 14 days.
Fludioxonil (12) Cannonball WP, 50%	Spray or fungigation	7 fl oz/A				X	Begin applications at onset of disease. Make first application at 10-20% bloom. Do not apply more than 28 oz/A of Cannonball per season 7 day PHI.

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Dry Edible Bean Foliar Sprays (continued)

Chemical (Fungicide Group)	Application ¹	Dosage ²	Disease Control ³				Remarks
			Anthracnose	Rust	Halo Blight	White Mold	
Fluopyram (7) + Prothioconazole (3) ProPulse 17.4%:17.4%	Spray or fungigation	8.0-13.6 fl oz/A				X	Apply at early flower or at the first sign of disease, whichever occurs first. Do not make more than two sequential applications before rotating with a fungicide from a different group. Continue applications as needed on a 10-14-day interval. Do not apply within 7 days of cutting or swathing the crop for harvest or within 14 days of harvest.
Cyprodinil (9)+ Fludioxonil (12) Switch 62.5 WG 37.5%:25.0%	Spray	11-14 oz/A				X	Make first application at 10-20% bloom. A 2 (ee) label allows Switch to be applied in tank mix with Thiophonate-methyl for improved white mold control.
Fluazinam (29) Omega 500F, 40%	Spray or fungigation	0.5-0.85 pt/A				X	Make first application at 10-30% bloom. Second application may be made 7-10 days later if needed. Do not exceed 1.75 pts/acre/season. PHI 30 days.
Fluxapyroxad (7) + Pyraclostrobin (11) Priaxor 14.336%:28.58%	Spray or fungigation	4-8 oz/A	X	X		X	Resistance statement 5 and 6 ⁴ . Do not apply more than 2 applications per season. PWI=21 days White mold suppression only.
Iprodione (2) Rovral 4F, 41.6% Nevado 4F, 41.6% Meteor, 41.6%	Ground spray or fungigation	1.5-2.0 pt/A				X	Resistance statement 2 ⁴ . Apply at first bloom (10% of plants with 1 open blossom) and again at peak bloom, if needed. Do not apply after full bloom. Use 50-100 psi and 3 nozzles, 1 over the row and 1 on each side. If pH of spray water exceeds 7.0, buffer it to pH 5.0-7.0.

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Dry Edible Bean Foliar Sprays (continued)

Chemical (Fungicide Group)	Application ¹	Dosage ²	Disease Control ³				Remarks
			Anthraco-nose	Rust	Halo Blight	White Mold	
Picoxystrobin (11) Approach, 22.5%	Spray or fungigation	6-12 fl oz/A	X	X		X	For white mold, make preventative application at beginning bloom and at 8-12 fl oz/A. Do not apply more than 24 fl oz/A per season and no more than 2 sequential applications. 14-day PHI.
Pyraclostrobin (11) Headline EC, 23.6% Headline SC, 23.3%	Spray or fungigation	6-9 fl oz/A	X	X			Apply prior to onset of disease. Maximum of 2 applications per season. 21- day PHI.
Sulfur (M) Microthiol Disperss, 80%	Spray	7 lb/A		X			
Thiophanate-methyl (1) Topsin M WSB, or T-methyl 70W WSB or T-Methyl WSB E-AG Cercobin	Spray or fungigation	1.5-2 lb/A-1 application or 1-1.5 lb/A - 2 applications	X			X	Resistance statement 1 ⁴ . Apply 1.5-2 lb once when 70-100% of the plants have at least 1 open blossom. Or apply 1-1.5 lb twice, with the first application when 10-30% of the plants have at least 1 open blossom and the second application 4-7 days later. Complete coverage of all parts of plant is essential for control of white mold. Do not apply more than 4 lbs product/acre/season. Do not apply thiophanate-methyl within 14 days of harvest.
Topsin or T-Methyl E-AG or Incognito, 46.2% or Topsin 4.5 FL, 45%	Spray or fungigation	30-40 fl oz/A 1 application or 20-30 fl oz/A if 2 applications	X			X	
Thiophanate Methyl 85 WDG, 85%Incognito 85 WDG, 85%	Spray or fungigation	0.8-1.6 lb/A	X			X	

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