

## Barley-Oat-Rye-Wheat SEED TREATMENT

Chemical	Appl.	Dosage <sup>1</sup>	Disease Control <sup>2</sup>				Remarks
			Covered Smut	Loose Smut	Seedling <sup>3</sup> Blight	Common Root Rot	
<b>Azoxystrobin</b> Dynasty, 9.6%	Slurry	0.153-0.382 fl oz/cwt			X		For wheat and barley. Also controls dwarf bunt and common bunt. Always use Dynasty with Dividend Extreme or Dividend XL RTA.
<b>Carboxin + PCNB</b> Vitavax-PCNB, 17%:17%	Slurry or mist	3-4 fl oz/cwt wheat; oats;barley	X	X	X		Not registered for rye
<b>Carboxin + Thiram</b> Vitavax 200 Flowable 17%:17%	Slurry or mist	3-4 fl oz/cwt	X	X	X		Neither registered for rye. RTU-Vitavax-Thiram registered for triticale.
RTU-Vitavax-Thiram, 10%:10%	Liquid or slurry	5-6.8 fl oz/cwt	X	X	X		

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<sup>3</sup>Seedling blights due to fungal infections of the seed such as black point and scab.

## Barley-Oat-Rye-Wheat (continued)

### SEED TREATMENT

Chemical	Appl.	Dosage <sup>1</sup>	Disease Control <sup>2</sup>				Remarks
			Covered Smut	Loose Smut	Seedling <sup>3</sup> Blight	Common Root Rot	
<b>Difenoconazole + Mefenoxam</b>		2.5 fl oz/cwt common bunt, loose smut, Fusarium seed scab	X(bunt)	X	X	X	<b>For spring and winter wheat.</b> Do not graze until 55 days after planting. Do not plant any crop other than wheat within 30 days to fields in which treated seeds were planted. For commercial or on-farm use.
Dividend XL RTA 3.21% : 0.27%	Ready to apply	5 fl oz/cwt common bunt, loose smut, seed-borne Septoria, general seed rots, seed-borne Fusarium, Pythium damping off, plus partial control of common root rot	X(bunt)	X	X		
Incentive RTA 3.21%:0.27%		10 fl oz/cwt - above diseases plus partial control of take-all, common root rot and Rhizoctonia root rot	X(bunt)	X	X	X	
Dividend Extreme 7.73%: 1.87%	Slurry	1 fl oz/cwt common bunt, loose smut, Fusarium seed scab	X(bunt)	X	X		<b>For Spring Wheat and Barley.</b> See label for winter wheat recommendations.  <b>Registered on barley</b> to suppress root rots, covered smut, and control seedling blight at a rate of 2-4 fl oz/cwt
		2 fl oz/cwt as above, plus seed-borne Septoria, Penicillium and Aspergillus seed rots, Pythium damping off, early season common root rot (Cochliobolus) and Rhizoctonia root rot	X(bunt)	X	X	X	
		4 fl oz/cwt as above, plus flag smut, early season Take-all root rot	X (bunt)	X	X	X	
<b>Fludioxonil</b> Maxim 4FS, 40.3%	Slurry	0.08-0.16 fl oz/cwt			X		For control of seed-borne and soil-borne fungi which cause seed decay, damping off and seedling blight. Cereal forage may be grazed 30 days after planting.
<b>Fludioxonil + Mefenoxam</b> Maxim XL, 21%:8.4%	Slurry	0.167-0.334 fl oz/cwt	X (bunt)		X		

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## Barley-Oat-Rye-Wheat (continued)

### SEED TREATMENT

Chemical	Appl.	Dosage <sup>1</sup>	Disease Control <sup>2</sup>				Remarks
			Covered Smut	Loose Smut	Seedling <sup>3</sup> Blight	Common Root Rot	
<b>Imazalil</b> Nu-Zone 10 ME, 10%	Slurry	0.8-1.5 fl oz/cwt			X	X	Not registered for oats or rye. Registered for suppression of common root rot of wheat and barley and for barley stripe. Registered for control of seed borne net blotch and <i>Septoria nodorum</i> . May be used with other fungicides. Do not graze or feed foliage from treated acres to livestock for 6 weeks after planting.
<b>Mancozeb</b> Dithane WSP, 80%	For planter box trmt. only	Consult labels for appropriate rate for each crop.	X		X		
Manzate ProStick, 75%	Slurry		X		X		
Penncozeb 75DF 75%	Planter box trmt. only	Consult label	X		X		
Penncozeb 80WP 80%	Planter box trmt. Only	Consult label	X		X		
<b>Maneb</b> Manex, 37%	slurry	2-3.2 fl oz/bu	X		X		
<b>Mefenoxam</b> Apron XL-LS, 32.3%	Mist or slurry	0.32-0.64 fl oz/cwt			X		For Pythium damping off control. See label for Dividend-Apron XL-LS combination
<b>Mefenoxam + difenoconazole</b> Cruiser Maxx Cereals 0.56%:3.36%	Slurry	5.0 fl oz/cwt	X	X	X	X	Not registered for rye or oat. Also contains 2.80% thiamethoxam for insect control.
<b>Metalaxyl</b> Allegiance FL, 8.35%	Mist or slurry	0.375-0.75 fl oz/cwt			X		For control of Pythium damping off only.
Dyna-Shield, 28.35%	Slurry	0.75 fl oz/cwt			X		
Aquire, 28.35%	Mist or slurry	0.75 fl oz/cwt			X		

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## Barley-Oat-Rye-Wheat (continued)

### SEED TREATMENT

Chemical	Appl.	Dosage <sup>1</sup>	Disease Control <sup>2</sup>				Remarks
			Covered Smut	Loose Smut	Seedling <sup>3</sup> Blight	Common Root Rot	
<b>PCNB (Terraclor)</b> PCNB Seed Coat, 24%	Slurry	2-4 oz/bu barley, oats 2 oz/bu wheat	X		X		Not registered for rye.
<b>Pyraclostrobin</b> Stamina, 18.4%	Slurry or mist	0.38-0.76 fl oz/cwt			x		Registered for wheat, barley and rye
<b>Thiram</b> 42-S Thiram, 42%	Liquid or slurry	2 fl oz/bu			X		Not registered for oats
<b>Tebuconazole + Metalaxyl</b> Raxil MD, 0.48%:0.64% Raxil XT, 15.0%:20%	Slurry or mist Slurry (wp pouch)	5 fl oz/cwt 0.16 oz/cwt or 1 pouch/50 cwt 5 fl oz/cwt	X X	X X	X X	X X	Not registered for rye. Do not graze barley, wheat, or oat green forage for 31, 31 and 51 days, respectively.  Raxil MD-W also contains 1.538% imidacloprid for wireworm suppression  Not registered for rye.
Raxil MD-W 0.461%:0.615%	Slurry or mist		X	X	X	X	
Dyna Shield 0.48%:0.64%	Slurry or mist	5-6.5 fl oz/cwt	X	X	X	X	
<b>Tebuconazole + Metalaxyl + Imazalil</b> Raxil MD Extra, 0.34%:0.58%:1.0%	Slurry or mist	5 fl oz/cwt	X	X	X	X	Not registered for rye or oats.
Raxil MD Extra-W 0.415%:0.560%:0.965%	Slurry or mist	5.14 fl oz/cwt	X	X	X	X	Contains 1.384% Imi dactoprid for wireworm control
<b>Tebuconazole + Thiram</b> Raxil-Thiram, 0.6%:20.0%	Liquid or Slurry	3.5-4.6 fl oz/cwt	X	X	X	X*	Not registered for rye. Effective against seed-borne Fusarium and <i>Septoria nodorum</i> . Do not graze wheat or barley for 31 days and oats for 30 days after planting.
<b>Triticonazole</b> Charter, 2.4%	Concentrated product	3.1 fl oz/cwt	X	X	X	X	Apply with water in a 2:1 ratio of water:Charter  Registered for wheat and barley  Suppression of root rot

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## Barley-Oat-Rye-Wheat (continued)

### SEED TREATMENT

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			Covered Smut	Loose Smut	Seedling <sup>3</sup> Blight	Common Root Rot	
<b>Triticonazole + Thiram</b> Charter PB 1:25%:12.5%	Ready to Apply	5.5 fl oz/cwt	X	X	X	X	Charter PB can be used as a ready-to-apply product or in a slurry with water. Registered for wheat and barley only.

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## Barley-Oat-Rye-Wheat FOLIAR SPRAYS

Chemical (Fungicide Group)	Application	Dosage <sup>2</sup>	Disease Control <sup>3</sup>				Fusarium Head Blight	Remarks
			Leaf <sup>4</sup> Spot	Leaf Rust	Stem Rust	Powdery Mildew		
<b>Copper (M)</b> Champ DP, 57.6%	Spray or fungigation	1-1.33 lb/A	X					None registered for rye.
Champ WG 77%	Spray or fungigation	1 ½-2 lb/A	X					Make first application at early heading and follow with second spray 10 days later.
Champ Formula 2, Flowable, 37.5%	Spray or fungigation	1-1.33 pt/A	X					
Cuprofix Ultra 40 Disperss 71.1%	Spray or fungigation	1-1.25 lb/A	X					Kocide 3000 can be applied as a foliar application for early season disease control and again at early heading and followed with another application 10 days later.
Kocide 2000, DF 53.8%	Spray or fungigation	1.25-1.5 lb/A	X					
Kocide 3000, DF 46.1%	Spray or fungigation	0.5-0.75 lb	X					
Kocide 4.5 LF, 37.5%	Spray or fungigation	1-1.33 pt/A	X					
<b>Mancozeb (M3)</b> Dithane DF Rainshield NT, 75%	Spray or fungigation	2.1 lb/A	X	X				Do not make more than 3 applications of mancozeb. Do not apply mancozeb within 26 days of harvest. Do not graze livestock in treated areas prior to harvest. Addition of spreader/sticker will improve performance.
Dithane F-45, 37%	Spray or fungigation	1.6 qt/A	X	X				
Dithane M-45, 80%	Spray or fungigation	2 lb/A	X	X				
Dithane WSP, 80%	Spray or fungigation	2 lb/A	X	X				
Manzate Flowable, 37%	Spray or fungigation	1.6 qt/A	X	X				0.75 to 1 quart rate of Dithane F-45 or 1 lb rate Dithane DF Rainshield NT is for application at the tillering stage to barley and wheat in North Dakota, South Dakota and Minnesota; this is covered by a Section 2 (ee) label.
Manzate ProStick, 75%	Spray or fungigation	2 lb/A	X	X				
Penncozeb, 80 WP, 80%	Spray or fungigation	1-2 lb/A	X	X				Penncozeb labels state control of Fusarium head blight, as well.
Penncozeb 75 DF, 75%	Spray or fungigation	1-2 lb/A	X	X				

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<sup>4</sup>Leaf spots includes fungal leaf diseases such as tan spot, Septoria blotch, and spot blotch on wheat, and spot blotch and net blot on barley.

## Barley-Oat-Rye-Wheat (continued)

### FOLIAR SPRAYS

Chemical (Fungicide Group)	Application <sup>1</sup>	Dosage <sup>2</sup>	Disease Control <sup>3</sup>					Remarks
			Leaf Spot <sup>4</sup>	Leaf Rust	Stem Rust	Powdery Mildew	Fusarium Head Blight	
<b>Mancozeb (M3) + Copper (M)</b> ManKocide, 15% + 46.1%	Spray or fungigation	2-2.5 lbs/A	X					Not registered for rye. Apply at early heading and follow with second spray 10 days later. Do not apply within 26 days of harvest. Use higher rates when conditions favor disease. Do not graze livestock in treated areas prior to harvest.
Cuprofix MZ Disperss, 30.4% + 22.1%	Spray or fungigation	2.5-4.75 lb/A	X					
<b>Triazoles</b> <b>Metconazole (3)</b> Caramba, 8.6%	Spray or fungigation	10-17 fl oz/A	X	X	X	X	X	Minimum of 2 applications/season. Maximum rate per season 34 fl oz; 30 day pre harvest interval  Supplemental labels allow a 2-4 fl oz/A application for early season leaf disease control, and 4 fl oz for a full head emergence (up to Feekees 10.5) application. Do not apply more than 8 fl oz per season. The pre-harvest interval is 40 days for grain. See labels for grazing and haying restrictions.
<b>Propiconazole (3)</b> Tilt 3.6EC, 41.8%	Spray or fungigation	2-4 fl oz/A	X	X	X	X	X	
PropiMax EC, 41.8%	Spray or fungigation	2-4 fl oz/A	X	X	X	X	X	
Bumper 41.8%	Spray or fungigation	2-4 fl oz	X	X	X	X	X	
Propiconazole E- AG, 41.8%	Spray	2-4 fl oz/A	X	X	X	X	X	
<b>Prothioconazole (3)</b> Proline 480 SC, 41%	Spray	4.3-5.7 fl oz/A	X	X	X	X	X	Registered for use in wheat (including durum) and barley. Apply for Fusarium Head Blight (Scab) when the main stem of barley plants are fully headed or when 15% of the main stem plants of wheat have started flowering. Do not make more than two applications of Proline per year. For maximum disease control, tank mix with the lowest rate of a non-ionic surfactant and then apply in 15-20 gpa by ground or 5 gpa by air. Do not apply within 32 days of barley harvest or 30 days of wheat harvest.

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<sup>5</sup>See fungicide resistance management statements on pages 9 and 10.

## Barley-Oat-Rye-Wheat (continued)

### FOLIAR SPRAYS

Chemical (Fungicide Group)	Application <sup>1</sup>	Dosage <sup>2</sup>	Disease Control <sup>3</sup>				Fusarium Head Blight	Remarks
			Leaf Spot <sup>4</sup>	Leaf Rust	Stem Rust	Powdery Mildew		
<b>Tebuconazole (3), 38.7%</b> Folicur, Embrace, Monsoon, Muscle, Onset, Orius, Tebucon, Tebustar, Tebuzol, and Toledo	Spray	4 fl oz/A		X	X		X	For wheat and barley for suppression of Fusarium Head Blight (Scab) and rust control. Do not apply more than 4 fl oz per year. Do not apply within 30 days of harvest.
<b>Prothioconazole + Tebuconazole</b> Prosaro 421 SC, 19.0%:19.0%	Spray	6.5-8.2 fl oz/A	X	X	X	X	X	Registered for wheat (including Durum) and barley. Do not apply 8.2 fl oz of Prosaro per season. Prosaro has a 30 day PHI
<b>QoIs</b> <b>Azoxystrobin (11)</b> Quadris, 22.9%	Spray or fungigation	6.2-12.3 fl oz/A (7.7-12.3 fl oz/A, powdery mildew)	X	X	X	X		Resistance statement 5 <sup>5</sup> Wheat and barley. Do not apply within 45 days of harvest. Application may be made from immediately after jointing (Feekes 6) up to late head emergence (Feekes 10.5). Do not harvest treated grain for forage. Do not harvest within 14 days for hay.  Not registered for oats. Apply no later than 50% head emergence for barley and rye. A sec. 2 (ee) allows early application at 3 fl oz/A on wheat. Registered for up to full head emergence (Feekes 10.5) for wheat. No more than two applications per season. Apply prior to disease onset.
<b>Pyraclostrobin (11)</b> Headline, 23.6%	Spray or fungigation	6-9 fl oz/A	X	X	X	X		
<b>QoIs + Triazoles</b> <b>Trifloxystrobin (11) + Propiconazole (3)</b> Stratego 11.4%:11.4%	Spray (Barley)  Spray or fungigation (Wheat)	10 fl oz/A	X	X	X	X		Resistance statement 5 <sup>5</sup> & 3 <sup>5</sup> Stratego registered for wheat, barley and oats. A 2 (ee) label allows application of Stratego at 4-7 fl oz/A in barley and 4-10 fl oz/A in wheat for early season diseases. Do not apply Stratego after Feekes stage 8 (emergence of flag leaf ligule) in barley or 10.5 (full head emergence) in wheat. Do not apply Stratego within 32 days of harvest in wheat or 40 days of harvest in barley. Do not exceed 2 applications of Stratego or 20 fl oz/season.

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<sup>4</sup>Leaf spots includes fungal leaf diseases such as tan spot, Septoria blotch, and spot blotch on wheat, and spot blotch and net blot on barley.

<sup>5</sup>See fungicide resistance management statements on pages 9 and 10.



## Barley-Oat-Rye-Wheat (continued)

### FOLIAR SPRAYS

Chemical (Fungicide Group)	Application <sup>1</sup>	Dosage <sup>2</sup>	Disease Control <sup>3</sup>				Fusarium Head Blight	Remarks
			Leaf Spot <sup>4</sup>	Leaf Rust	Stem Rust	Powdery Mildew		
<b>Azoxystrobin (11) + Propiconazole (3)</b> Quilt 7.0%: 11.7%	Spray or fungigation	7-14 fl oz/A	X	X		X		Resistance statement 5 <sup>5</sup> & 3 <sup>5</sup> For wheat, barley and tritcale. Quilt may be applied up to Feekes growth stage 10.5. Applications may be made no closer than a 14-day interval. Quilt may be tank mixed with Axial and Discover herbicides. If disease pressure is low, 10.5 fl oz/A may be applied.
<b>Sulfur (M)</b> Sulfur DF, 80%	Spray	6-15lb/A				X		Do not apply when temperatures are high (above 90°F). For powdery mildew only.

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