

## FRUIT TREE DISEASES (Commercial)

Sherrie Smith

Growth Stage	Disease	Product	Active Ingredient	Rate/100 gal	Rate/Acre	Comments	
<b>APPLE</b>							
Dormant to Silver Tip	Fire blight	Bordeaux Mixture	basic copper sulfate			Dissolve 8 lbs copper sulfate in 50 gals water; add 8 lbs spray lime with agitation and more water; add 1 gal miscible superior oil last but prior to complete fill; add water with agitation to 100 gals; spray with constant agitation. Do not mix with other pesticides or spray when drying conditions are slow or after 1/4 inch green as severe injury may result.	
		Kocide 101	copper hydroxide	2 - 4 lb	8 - 16 lb		
		Kocide 2000	copper hydroxide	2 - 4 lb	6 - 12 lb		
			Kocide 3000	copper hydroxide	0.5 pt	3.5 - 7 lb	Make application between silver tip and green tip. Apply as a full cover spray for early season disease suppression. NOTE: Moderate to severe crop injury may occur from late application; discontinue use when green tip reaches 1/2 inch.
		Phytophthora crown, root and collar rots	Ridomil Gold EC	mefenoxam		2 qt or 1.5 fl oz/1,000 sq ft	
	Aliette WDG		aluminum tris	3 lb	Root dip – new plants	Applications should be made in early spring before growth starts and in the fall after harvest, but before the ground freezes.  Dip the entire root system for 30 - 60 minutes prior to planting in the field.	
				2.5 - 5 lb/ 100 gals	Foliar	Apply at a 30 - 60 day interval when conditions favor disease development. See label.	
Green Tip	Scab	Syllit FL	dodine		1.5 - 3 pt	Refer to label for resistance management and application guidelines. See label.	
		Scala SC	pyrimethanil		7 - 10 oz		
		Scab, cedar apple rust, quince rust, sooty blotch, flyspeck, bitter rot, necrotic leaf blotch	Ziram 76DF	ziram	1.5 - 2 lb	6 - 8 lb	Apply from pre-bloom through cover sprays as needed. Under severe disease pressure use the higher rate. Do not apply within 14 days of harvest.
			Polyram 80DF	EBDC	1.5 lb	6 lb	Begin application at 0.25 - 0.5 inch green tip and continue at 7 - 10 day intervals. Do not apply Polyram 80DF after bloom.
<i>(continued)</i>							

## FRUIT TREE DISEASES (Commercial) – continued

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<b>APPLE (cont.)</b>						
Green Tip (cont.)	Scab, cedar apple rust, quince rust, powdery mildew	Eagle 20EW	myclobutanil	4 - 6 oz	See label.	Begin at green tip. Do not apply within 14 days harvest. For rust, begin applications at pink stage and continue through the second cover spray. For powdery mildew, begin application at tight cluster and continue through the second cover spray.
	Scab, cedar apple rust, quince rust, powdery mildew	Rubigan EC	fenarimol	3 fl oz	8 - 12 fl oz	<b>Do not apply within 30 days of harvest.</b>
	Scab, powdery mildew, cedar apple rust	Procure 50WS	triflumizole	3 - 4 oz	12 - 16 oz	Begin applications at 1/4 to 1/2 green tip. Spray on a 7 - 10 day schedule as needed. See label.
	Scab	Vangard 75WG	cyprodinil		5 oz	
	Scab, cedar apple rust, quince rust, powdery mildew, sooty blotch, fly-speck, bitter rot, white rot	Flint 50WG	trifloxystrobin	1 - 1.6 oz	2.5 oz	Begin applications preventively. Continue applications as needed on a 10 -14 day interval. See label for white rot and bitter rot.
		Adament 50WG	tebuconazole + trifloxystrobin		4 - 6 oz	
	Scab, powdery mildew, frog-eye leaf spot, alternaria blotch, Brooks fruit spot, flyspeck, sooty mold, white rot, black rot, cedar apple rust (suppression)	Sovran 50WG	kresoxim-methyl		3.2 - 6.4 oz	Begin at 1/2 inch green and repeat at 7 - 10 day intervals depending on the rate of shoot growth and level of disease pressure. See label for complete directions.
	Fabrea leaf spot, rusts, scab	Dithane F-45 Rainshield	EBDC		4.8 qt	Begin applications at 1/4 - 1/2 inch green tip and continue on a 7 - 10 day schedule through bloom.
	Alternaria blotch, scab, bitter rot, black rot, Brooks spot, flyspeck, pear scab, powdery mildew, sooty blotch, white rot, cedar apple rust (suppression), quince rust	Pristine	pyraclostrobin		14.5 - 18.5 oz/A	See label.

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<b>APPLE (cont.)</b>						
1/2" Green Tip	Scab	Same as Green Tip				Rotate fungicides for resistance management according to label.
Tight Cluster	Scab, powdery mildew	Same as Green Tip				Some materials listed in Green Tip are not labeled for powdery mildew. See label for the most effective material(s).
Pink	Scab, powdery mildew, rust	Same as Tight Cluster				Critical time for control of these diseases. Some of the materials listed are not labeled for powdery mildew. Follow label information.
Bloom	Scab, powdery mildew, rust	Same as Pink				
	Fire blight	Agrimycin 17	streptomycin sulfate		12 - 48 oz	Apply at first sign of blossoms and repeat on a 5 day schedule through petal fall on susceptible varieties. Warm, wet weather during bloom favors the disease.
		Firewall	streptomycin sulfate		24 - 48 oz	Spray trees every 3 - 4 days during blossom time. Apply sprays after petal fall every 10 - 14 days to control twig blight. (This could mean an additional 6 - 8 applications after blossom sprays.) Do not apply within 50 days of harvest.
Petal Fall	Scab, powdery mildew, rust, fire blight	Same as Bloom	See label.			
First and Second Cover Sprays	Scab	Nova 40WP or	myclobutanil	1.25 - 2 oz	5 - 8 oz	
	Powdery mildew	Bayleton 50DF or	triadimefon	0.5 - 2 oz	2 - 8 oz	
	Rust	Rubigan EC or	fenarimol	3 fl oz	8 - 12 fl oz	
	Fruit rots	Procure 50WS	triflumizole	3 - 4 oz	12 - 16 oz	
		+				
		Captan 50WP or	captan	1.5 lb	6 lb	
		Ziram 76DF	ziram	1.5 - 2 lb	6 - 8 lb	
	Blister spot on 'Mutsu' or 'Crispin'	Agrimycin 17	streptomycin sulfate	See label.		
Third Cover	Scab	Captan 50WP or	captan	1.5 lb	6 lb	Topsin is needed for sooty blotch and flyspeck control but may lead to increased mite injury. Check the Topsin label for precautions.
	Fruit rots	Ziram 76DF	ziram	1.5 - 2 lb	6 - 8 lb	
	Sooty blotch	+				
	Flyspeck	Topsin-M 70WSB	thiophanate-methyl	4 - 6 oz	1 - 1.5 lb	
Summer Cover Sprays (10 - 14 day schedule)	Scab, fruit rot, sooty blotch, flyspeck	Same as Third Cover				

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<b>PEAR</b>						
Pre-Bloom	Pear scab	Ferbam 76WP	ferbam	1.5 lb	6 lb	PHI = 0 days. Maximum of 5 applications/season. See label for alternating fungicides with this product.
		Rubigan EC	fenarimol	3 - 4 fl oz	8 - 12 fl oz	
		Mancozeb 80WP	mancozeb	0.75 - 1.5 lb	3 - 6 lb	
		Ziram 76DF	ziram	2 lb	6 - 8 lb	
		Procure 50WS	triflumizole	2 - 4 oz	8 - 16 oz	
		Sovran 50WG	kresoxim-methyl	1 - 1.6 oz	4 - 6.4 oz	
		Flint 50WG	trifloxystrobin		2 - 2.5 oz	
		Pristine	boscalid + pyraclostrobin		10.5 - 14.5 oz	
	Adament 50WG	tebuconazole + trifloxystrobin		4 - 5 oz		
	Scala	pyrimethanil		5 - 10 fl oz		
Bloom	Pear scab	Same as Pre-Bloom				
	Fire blight	Mycoshield	oxytetracycline sulfate			Mycoshield should be applied at 16 oz per 100 gal.
		Flameout	oxytetracycline hydrochloride	16 oz		Begin spray application at 10% bloom at a rate of 50 - 100 gals of solution per acre. <b>Repeat applications at 4 - 6 day intervals. See label.</b>
		Kocide 3000	copper hydroxide		0.5 lb	Apply at 5 day intervals or as needed throughout the bloom period.
	Firewall	streptomycin sulfate		24 - 48 oz	Spray trees at 20% - 30% bloom. Spray trees every 3 - 4 days during blossom time. Apply sprays after petal fall every 10 - 14 days to control twig blight. Do not apply within 30 days of harvest.	
Petal Fall	Pear scab Fire blight	Same as Bloom				Continue fire blight sprays until the last petal falls.
First and Second Cover	Pear scab	Same as Pre-Bloom				
Summer Cover	Pear scab Sooty blotch Flayspeck	Same as Pre-Bloom but do not use Rubigan or Procure				

## FRUIT TREE DISEASES (Commercial) – continued

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<b>PEACH and NECTARINE</b>							
Dormant	Peach leaf curl	Bravo	chlorothalonil	Label	Label	Apply after leaf drop but before bud swell in the spring.	
		Ziram 76DF	ziram	1.25 - 2 lb	4 - 6 lb		
		Kocide 2000	copper hydroxide	4 lb	8 - 16 lb		
			Kocide 3000	copper hydroxide		3.5 - 7 lb	Make first application before fall rains and a second at late dormant. For peach leaf curl, late dormant application must be made before leaf buds swell.
		Bordeaux Mixture	copper sulfate + spray lime	6 lb + 6 lb			
	Phytophthora collar and root rot	Aliette	aluminum tris	5 lb		Apply Aliette® WDG when conditions favor disease development and continue on a 60 day interval. Nursery tree resets and new plantings should be treated after leaf emergence. See label.	
		Gem 500 SC	trifloxystrobin		1.9 - 3.8 oz		
		Ridomil Gold EC	mefenoxam		2 qt or 1.5 fl oz/1,000 sq ft		Applications should be made in early spring before growth starts and in the fall after harvest, but before the ground freezes.
Pink	Brown rot	Nova 40WP	myclobutanil	1.25 - 2 oz	2.5 - 6 oz	Avoid the use of Abound around apple trees. Do not use the same sprayer for apples if Abound has been used on stone fruits. Read label for resistance management suggestions.	
		Indar 75WSP	fenbuconazole		2 oz		
		Orbit 41.8L	propiconazole		4 fl oz		
		Propimax EC	propiconazole		4 fl oz		
		Rovral 50WP	iprodione	5 - 10 oz	1 - 2 lb		
		Bravo WeatherStik	chlorothalonil	1 - 1 3/8 pt	3 - 5 pt		
		Captan 50WP	captan	1.3 lb	4 lb		
		Ziram 76DF	ziram	1.5 - 2 lb	4.5 - 8 lb		
		Abound 2.08 FL	azoxystrobin		12 fl oz		
		Pristine	boscalid + pyraclostrobin		10.5 - 14.5 oz		See label. Best applied at first evidence of disease. No more than 5 applications/season. PHI = 0 days
	Adament 50WG	tebuconazole + trifloxystrobin	See label.	4 - 8 oz	7 - 10 day intervals. See restrictions.		
	Scala	pyrimethanil		9 - 18 fl oz			
Full Bloom	Brown rot	Same as Pink					
Shuck Split	Brown rot Scab Powdery mildew	Same as Pink				Nova, Elite, Indar and Orbit are superior powdery mildew fungicides. Do not use Bravo after shuck split unless special labels are approved and available.	
		Same as Pink					
		Same as Pink					
	Bacterial spot	Mycoshield	oxytetracycline calcium	See label.			
		Flameout	oxytetracycline hydrochloride	12 oz		Begin application with shuck split using a rate of 3 gallons per tree (240 gals spray solution per acre based on 80 trees per acre). Apply spray solution to point of runoff.	

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<b>PEACH and NECTARINE (cont.)</b>						
First Cover	Brown rot, scab, powdery mildew	Same as Pink				
Second Cover	Brown rot, scab, powdery mildew	Same as First Cover				
Additional Covers and Pre-Harvest		Same as First Cover				
<b>PLUM</b>						
Dormant	Bacterial canker	Kocide 3000	copper hydroxide		3.5 - 7 lb	Make first application before fall rains and a second at late dormant.
	Phytophthora collar and root rot	Ridomil Gold EC	mefenoxam		2 qt or 1.5 fl oz/1,000 sq ft	Applications should be made in early spring before growth starts and in the fall after harvest, but before the ground freezes.
		Aliette (nonbearing)	aluminum tris	5 lb		Apply Aliette® WDG when conditions favor disease development and continue on a 60 day interval. Nursery tree resets and new plantings should be treated after leaf emergence.
Pre-Bloom	Brown rot	Captan 50WP Rovral 50WP Orbit 41.8L Pristine	captan iprodione propiconazole boscalid + pyraclostrobin	2.6 lb 5 - 10.5 oz	8 lb 1 - 2 lb 4 fl oz 10.5 - 14.5 oz	See label information. Maximum of 5 applications/season. PHI = 0 days
Full Bloom	Brown rot Black knot	Same as Pre-Bloom				
Petal Fall	Same as Full Bloom	Same as Pre-Bloom				
Shuck Split	Same as Full Bloom	Same as Pre-Bloom				
First Cover	Same as Full Bloom	Same as Pre-Bloom				
Second Cover through Pre-Harvest	Brown rot	Same as Pre-Bloom				

This information was current as of October 1, 2009, and applies only to Arkansas and may not be appropriate for other states or locations. The listing of any product in this publication does not imply endorsement of that product or discrimination against any other product by the University of Arkansas Division of Agriculture. *Every effort was made to ensure accuracy, but the user of any crop protection product must read and follow the most current label on the product – The Label is the Law.* For further assistance, contact the local Cooperative Extension Service office.