

SMALL FRUIT DISEASES (Commercial)

Sherrie Smith and Aaron Cato

Growth Stage	Disease	Product	Active Ingredient	FRAC Code	Rate/Acre	Re-entry Interval	Days to Harvest	Comments
GRAPES								
Dormant	Anthracnose Black rot Eutypa Phomopsis	Nu-Cop 50 DF	cupric hydroxide	M1	2 lb	24 hours	Dormant	Begin applications late dormancy before bud break.
		Liquid lime-sulfur (hard to find)	calcium polysulfides	M2	Rate depends on product name. See label.	48 hours	Dormant only	Apply in late winter before buds swell.
	Powdery mildew	Sulfurix	calcium polysulfides	M2	1 gallon per acre in sufficient water	48 hours	Dormant	Early sprays are critical for control of black rot if the disease has been a historical problem.
	Phytophthora root rot	Ridomil Gold SL	mefenoxam	4	3.6 pt or 0.25 pt/1,000 row ft	48 hours	60	Apply in spring before plants begin to grow. Two more applications may be made when conditions are favorable for disease.
Bud Break to Bloom	Angular leaf scorch Black rot Downy mildew Phomopsis	Abound FL	azoxystrobin	11	11 - 15.4 fl oz	4 hours	14	Early sprays are critical for control of black rot if the disease has been a historical problem.
		Quadris Top	azoxystrobin + difenoconazole	11 + 3	12 - 14 oz	12 hours	14	
		Pristine	boscalid + pyraclostrobin	7 + 11	8 - 12.5 oz	12 hours (5 days for cane tying, turning or girdling)	14	
		Captan 50 WP	captan	M4	2 - 4 lb	72 hours	0	
		Sovran 50 WG	kresoxim-methyl	11	3.2 - 5.6 oz	12 hours	14	
		Dithane DF Rainshield	mancozeb	M3	1.5 - 2.5 lb	24 hours	66	
		Revus	mandipropamid	40	8 oz	4 hours	14	

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GRAPES (cont.)								
Bud Break to Bloom (cont.)		Revus Top	mandipropamid + difenoconazole	40 + 3	7 oz	12 hours	14	
		Adament 50 WG	tebuconazole + trifloxystrobin	3 + 11	3 - 7.2 oz	12 hours	14	Do not apply more than 48 oz per acre of Adament per season or more than 6 applications per season.
		Topguard EQ	azoxystrobin + flutriafol	11 + 3	5 - 6 fl oz	12 hours (5 days for cane tying, turning or girdling)	14	For powdery mildew, begin applications at 6- to 10-inch shoots.
		Inspire Super	difenoconazole + cyprodinil	3 + 9	16-20 fl oz	12 hours	14	PRECAUTION: On <i>V. labrusca</i> , <i>V. labrusca</i> hybrids and other non-vinifera hybrids such as Concord and Thomcord where sensitivity is not known, the use of Inspire Super by itself or in tank mixtures with materials that may increase uptake (adjuvants, foliar fertilizers) may result in leaf burning or other phytotoxic effects.
		Fosphite	mono- and di-potassium salts of phosphorous acid	33	1-3 qt/100 gallon	4 hours	0	Foliar, or aerial, or root dip, or irrigation or trunk injection. See label for rates and complete instructions.
		Flint 50 WG	trifloxystrobin	11	1.5 - 4 oz	12 hours	14	DO NOT APPLY FLINT OR ADAMENT TO CONCORD OR RELATED VARIETIES AS INJURY MAY RESULT.
		Ziram Granuflo	ziram	M3	3 - 4 lb	48 hours	21	
		Aliette WDG	aluminum tris	33	3 - 5 lb	48 hours	15	
		Reason 500 SC	fenamidone	11	2.7 fl oz	12 hours	30	
		Gavel 75 DF	mancozeb + zoxamide	M3 22	2-2.5 lb	48 hours	66	Apply Gavel in sufficient water to provide thorough coverage starting when new shoots are 1/2 to 1 1/2 inches long. Repeat when shoots are 3 to 5 inches long, when shoots are 8 to 10 inches long, and then at 7 - 10 day intervals.

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GRAPES (cont.)								
Bud Break to Bloom <i>(cont.)</i>	Bunch rot Dead arm Downy mildew <i>(cont.)</i>	Topsin M WSB	thiophanate-methyl	1	0.75 - 1.5 lb	48 hours	14	
		Presidio	fluopicolide	43	3 - 4 fl oz	12 hours	21	
	Powdery mildew	Abound FL	azoxystrobin	11	11 - 15.4 fl oz	4 hours	14	
		Quadris Top	azoxystrobin + difenoconazole	11 + 3	12 - 14 oz	12 hours	14	Apply at bud break and at 10 - 21 day intervals for powdery mildew. Do not make more than 2 sequential applications before changing to a fungicide with a different mode of action.
		Pristine	boscalid + pyraclostrobin	7 + 11	8 - 12.5 oz	12 hours (5 days for cane tying, turning or girdling)	14	DO NOT APPLY PRISTINE TO CONCORD, WORDEN, FREDONIA AND RELATED VARIETIES AS LEAF INJURY MAY RESULT – SEE LABEL.
		Inspire Super	difenoconazole + cyprodinil	3 + 9	16 - 20 fl oz	12 hours	14	For powdery mildew, begin Inspire Super at bud break and apply on a 10 - 21 day interval.
		Sovran 50 WG	kresoxim-methyl	11	3.2 - 4.8 oz	12 hours	14	Apply prior to disease on a 14 day interval. Rotate with other chemistry.
		Quintec	quinoxifen	13	4 oz	12 hours	14	Apply when conditions are favorable for disease but before disease develops. Apply on a 14 day interval. (Do not apply to Concord grapes as injury may result.)
		AmTide	tebuconazole	3	3 - 4 fl oz	12 hours	14	
	Adament 50 WG	tebuconazole + trifloxystrobin	3 + 11	3 oz	12 hours	14	DO NOT APPLY ADAMENT OR FLINT TO CONCORD OR RELATED VARIETIES AS INJURY MAY RESULT.	

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SMALL FRUIT DISEASES (Commercial) – continued

Growth Stage	Disease	Product	Active Ingredient	FRAC Code	Rate/Acre	Re-entry Interval	Days to Harvest	Comments
GRAPES (cont.)								
Bud Break to Bloom (cont.)	Powdery mildew (cont.)	Flint	trifloxystrobin	11	1.5 - 4 oz	12 hours	14	DO NOT APPLY FLINT OR ADAMENT TO CONCORD OR RELATED VARIETIES AS INJURY MAY RESULT.
		Procure 480 SC	triflumizole	3	4 - 8 fl oz	12 hours	14	
Bloom	Same as Bud Break							
	Botrytis bunch rot*	Quadris Top	azoxystrobin + difenoconazole	11 + 3	12 - 14 oz	12 hours	14	Suppression only.
		Topguard EQ	azoxystrobin + flutriafol	11 + 3	5 - 6 fl oz	12 hours (5 days for cane tying, turning or girdling)	14	Do not apply more than 6 times a season.
		Pristine	boscalid + pyraclostrobin	7 + 11	8 - 12.5 oz	12 hours (5 days for cane tying, turning or girdling)	14	DO NOT APPLY PRISTINE TO CONCORD, WORDEN, FREDONIA AND RELATED VARIETIES AS LEAF INJURY MAY RESULT – SEE LABEL.
		Vanguard 75 WG	cyprodinil	9	10 oz	12 hours	7	Begin Vanguard at early bloom. Continue through berry touch, veraison and pre-harvest on a 7 day interval.
		Botran 75 W	dicloran	14	2 lb	14 days	14	Cane turning and girdling are prohibited for 30 days after using Botran 75 W.
		Inspire Super	difenoconazole + cyprodinil	3 + 9	16 - 20 fl oz	12 hours	14	PRECAUTION: On <i>V. labrusca</i> , <i>V. labrusca</i> hybrids and other non-vinifera hybrids such as Concord and Thomcord where sensitivity is not known, the use of Inspire Super by itself or in tank mixtures with materials that may increase uptake (adjuvants, foliar fertilizers) may result in leaf burning or other phytotoxic effects.
		Elevate 50 WG	fenhexamid	17	1 lb	12 hours	0	Do not make more than 2 consecutive applications.

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SMALL FRUIT DISEASES (Commercial) – continued

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GRAPES (cont.)								
Bloom <i>(cont.)</i>	Botrytis bunch rot* <i>(cont.)</i>	Rovral 4 FL	iprodione	2	1 - 2 pt	48 hours	7	Begin at early bloom. Continue through berry touch, veraison and pre-harvest.
		Scala	pyrimethanil	9	18 fl oz	12 hours	7	
		Adament 50 WG	tebuconazole + trifloxystrobin	3 + 11	6 oz	12 hours	14	DO NOT APPLY ADAMENT TO CONCORD OR RELATED VARIETIES AS INJURY MAY RESULT.
Shatter	Black rot Downy mildew Powdery mildew	Abound FL	azoxystrobin	11	11 - 15.4 fl oz	4 hours	14	Apply Abound prior to disease on a 7 - 14 day interval. No more than 2 sequential applications before alternating with a fungicide with a different FRAC code.
	Angular leaf spot Anthracnose Black rot Leaf blight Phomopsis Powdery mildew Rotbrenner Septoria	Aprovia	azoxystrobin + difenoconazole	11 3	8.6 - 10.5 fl oz	12 hours	21	For Phomopsis diseases, apply at bud break, before shoots are 0.5 inches in length, and then again when shoots are 5-6 inches in length.
		Quadris Top	azoxystrobin + difenoconazole	11 + 3	12 - 14 oz	12 hours	14	Avoid drift of Quadris Top to apples.
		Pristine	boscalid + pyraclostrobin	7 + 11	8 - 12.5 oz	12 hours (5 days for cane tying, turning or girdling)	14	DO NOT APPLY PRISTINE TO CONCORD, WORDEN, FREDONIA AND RELATED VARIETIES AS LEAF INJURY MAY RESULT – SEE LABEL.
		Captan 50 WP	captan	M4	2 - 4 lb	72 hours	0	
		Sovran 50 WG	kresoxim-methyl	11	3.2 - 5.6 oz	12 hours	14	
		Dithane DF Rainshield	mancozeb	M3	1.5 - 2.5 lb	24 hours	66	
		Revus	mandipropamid	40	8 oz	4 hours	14	
		Revus Top	mandipropamid + difenoconazole	40		12 hours	14	
		Scala Adament 50 WG	pyrimethanil tebuconazole + trifloxystrobin	9 3 + 11	18 fl oz 3 - 7.2 oz	12 hours 12 hours	7 14	DO NOT APPLY ADAMENT OR FLINT TO CONCORD OR RELATED VARIETIES AS INJURY MAY RESULT!

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SMALL FRUIT DISEASES (Commercial) – continued

Growth Stage	Disease	Product	Active Ingredient	FRAC Code	Rate/Acre	Re-entry Interval	Days to Harvest	Comments
GRAPES (cont.)								
Shatter (cont.)	Angular leaf spot Anthracnose	Flint 50 WG	trifloxystrobin	11	1.5 - 4 oz	12 hours	14	
	Black rot Leaf blight	Procure 480 SC	triflumizole	3	4 - 8 fl oz	12 hours	14	
	Phomopsis Powdery mildew Rotbrenner Septoria (cont.)	Ziram Granuflo	ziram	M3	3 - 4 lb	48 hours	21	
	Black rot Downy mildew Bunch rot Powdery mildew Phomopsis	Topguard EQ	azoxystrobin + flutriafol	11	5 - 6 fl oz	12 hours (5 days for cane tying, turning or girdling)	14	
	Alternaria rot Angular leaf spot Anthracnose Black rot Bunch rot Powdery mildew Septoria leaf spot	Inspire Super	difenoconazole + cyprodinil	3 + 9	16 - 20 fl oz	12 hours	14	PRECAUTION: On <i>V. labrusca</i> , <i>V. labrusca</i> hybrids and other non-vinifera hybrids such as Concord and Thomcord where sensitivity is not known, the use of Inspire Super by itself or in tank mixtures with materials that may increase uptake (adjuvants, foliar fertilizers) may result in leaf burning or other phytotoxic effects.
	Phytophthora root rot Pythium Fusarium Rhizoctonia Powdery mildew Downy mildew	Fosphite	mono- and di-potassium salts of phosphorous acid	33	1 - 3 qt/ 100 gallon	4 hours	0	Foliar, or aerial, or root dip, or irrigation or trunk injection. See label for rates and complete instructions.
First Cover to Veraison	Black rot Downy mildew Powdery mildew	Same as Shatter						
Veraison to Harvest	Botrytis bunch rot*	See Bloom section						
	Powdery mildew	Abound FL	azoxystrobin	11	11 - 15.4 fl oz	4 hours	14	
		Topguard EQ	azoxystrobin + flutriafol	11 + 3	5 - 6 fl oz	12 hours (5 days for cane tying, turning or girdling)	14	Do not apply more than 6 times per season.

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SMALL FRUIT DISEASES (Commercial) – continued

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GRAPES (cont.)									
Veraison to Harvest (cont.)	Powdery mildew (cont.)	Quadris Top	azoxystrobin + difenoconazole	11 + 3	12 - 14 oz	12 hours	14		
		Pristine	boscalid + pyraclostrobin	7 + 11	8 - 12.5 oz	12 hours (5 days for cane tying, turning or girdling)	14	DO NOT APPLY PRISTINE TO CONCORD, WORDEN, FREDONIA AND RELATED VARIETIES AS LEAF INJURY MAY RESULT – SEE LABEL.	
		Sovran 50 WG	kresoxim-methyl	11	3.2 - 5.6 oz	12 hours	14		
		Quintec	quinoxifen	13	4 oz	12 hours	14	Apply when conditions are favorable for disease but before disease develops. Apply on a 14 day interval. (Do not apply to Concord grapes as injury may result.)	
		AmTide	tebuconazole	3	3 - 4 fl oz	12 hours	14		
		Adament 50 WG	tebuconazole + trifloxystrobin	3 + 11	3 - 7.2 oz	12 hours	14	DO NOT APPLY ADAMENT OR FLINT TO CONCORD OR RELATED VARIETIES AS INJURY MAY RESULT.	
		Flint 50 WG	trifloxystrobin	11	1.5 - 4 oz	12 hours	14		
		Procure 480 SC	triflumizole	3	4 - 8 fl oz	12 hours	14		
		Downy mildew	Abound	azoxystrobin	11	11 - 15.4 fl oz	4 hours	14	
			Pristine	boscalid + pyraclostrobin	7 + 11	8 - 12.5 oz	12 hours (5 days for cane tying, turning or girdling)	14	DO NOT APPLY PRISTINE TO CONCORD, WORDEN, FREDONIA AND RELATED VARIETIES AS LEAF INJURY MAY RESULT – SEE LABEL.
	Captan 50 WP		captan	M4	2 - 4 lb	72 hours	0		
	Topguard EQ		azoxystrobin + flutriafol	11 + 3	5 - 6 fl oz	12 hours (5 days for cane tying, turning or girdling)	14		

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SMALL FRUIT DISEASES (Commercial) – continued

Growth Stage	Disease	Product	Active Ingredient	FRAC Code	Rate/Acre	Re-entry Interval	Days to Harvest	Comments
GRAPES (cont.)								
Veraison to Harvest (cont.)	Downy mildew (cont.)	Alude	mono- and di-potassium salts of phosphorous acid	33	2.5 - 5 pt/A	4 hours	0	Due to varietal sensitivity, test for sensitivity prior to use.
		Adamant 50 WG	tebuconazole + trifloxystrobin	3 + 11	3 - 7.2 oz	12 hours	14	DO NOT APPLY ADAMENT TO CONCORD OR RELATED VARIETIES AS INJURY MAY RESULT.
	Alternaria rot Angular leaf spot Anthracnose Black rot Bunch rot Powdery mildew Septoria leaf spot	Inspire Super	difenoconazole + cyprodinil	3 + 9	16 - 20 fl oz	12 hours	14	PRECAUTION: On <i>V. labrusca</i> , <i>V. labrusca</i> hybrids and other non-vinifera hybrids such as Concord and Thomcord where sensitivity is not known, the use of Inspire Super by itself or in tank mixtures with materials that may increase uptake (adjuvants, foliar fertilizers) may result in leaf burning or other phytotoxic effects.
	Phytophthora root rot Pythium Fusarium Rhizoctonia Powdery mildew Downy mildew	Fosphite	mono- and di-potassium salts of phosphorous acid	33	1 - 3 qt/ 100 gallon	4 hours	0	Foliar, or aerial, or root dip, or irrigation or trunk injection. See label for rates and complete instructions.

SMALL FRUIT DISEASES (Commercial) – continued

Growth Stage	Disease	Product	Active Ingredient	FRAC Code	Rate/Acre	Re-entry Interval	Days to Harvest	Comments
BLUEBERRY								
Dormant	Bacterial blight Phomopsis blight Mummy berry	Lime-sulfur spray (hard to find)	calcium polysulfides	M2	Rate depends on product name. See label.	48 hours	Dormant only	Apply at delayed dormant when leaf buds start to break.
		Kocide 3000	copper hydroxide	M1	1 - 2.5 lb	48 hours		Dormant application. Begin at bud swell.
	Phomopsis blight Mummy berry	Sulforix	calcium polysulfides	M2	See label.	48 hours		
	Phytophthora root rot	Ridomil Gold SL	mefenoxam	4	3.6 pt or 0.25 pt/1,000 row ft	48 hours	0	Ridomil Gold SL will not revitalize plants with moderate to severe root rot symptoms.
Green Tip	Alternaria fruit rot Anthracnose Botryosphaeria canker Mummy berry Mummy berry (shoot blight) Powdery mildew Septoria	Abound FL	azoxystrobin	11	6 - 15.5 fl oz	4 hours	0	Abound applications should begin prior to disease development.
	Botrytis gray mold* Mummy berry	Captan 50 WP	captan	M4	5 lb	72 hours	0	Begin Captan applications at bud swell and continue on a 7 - 10 day interval for botrytis and mummy berry.
	Alternaria leaf spot and fruit rot Anthracnose Botrytis gray mold* Mummy berry Phomopsis Powdery mildew	Pristine	boscalid + pyraclostrobin	7 + 11	18 - 23 oz	12 hours	0	No more than 4 applications of Pristine per season.
	Alternaria leaf spot Anthracnose leaf spot Leaf rust Monilinia blight Mummy berry blight Powdery mildew Septoria leaf spot	Inspire Super	difenoconazole + cyprodinil	3 + 9	16 - 20 fl oz	12 hours	14	Begin applications prior to disease onset when conditions are conducive for disease. For Monilinia and mummy berry, apply at or near flower bud swell and again at leaf bud swelling. For other diseases, apply during early bloom.

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SMALL FRUIT DISEASES (Commercial) – continued

Growth Stage	Disease	Product	Active Ingredient	FRAC Code	Rate/Acre	Re-entry Interval	Days to Harvest	Comments
BLUEBERRY (cont.)								
Green Tip (cont.)	Alternaria leaf spot and fruit rot Botrytis Monilinia Mummy berry Powdery mildew Septoria	Luna Tranquility	fluopyram + pyri-methanil	7 9	16 to 27 fl oz	12 hours	1 day	When disease pressure is severe, use the higher rates and/or shorter intervals.
	Phytophthora root rot Pythium Fusarium Rhizoctonia Powdery mildew Downy mildew	Fosphite	mono- and di-potassium salts of phosphorous acid	33	1 - 3 qt/ 100 gallon	4 hours	0	Foliar, or aerial, or root dip, or irrigation or trunk injection. See label for rates and complete instructions.
	Mummy berry Powdery mildew Rust Septoria leaf and stem blight	Tilt	propiconazole	3	6 fl oz	12 hours	30	Begin Tilt applications at green tip on a 7 - 10 day interval.
Early Bloom	Mummy berry Stem canker Stem blight	Same as Green Tip						
	Phytophthora root rot Anthracnose fruit rot Alternaria fruit rot (suppression only) Phomopsis canker (suppression only)	Aliette WDG	aluminum tris	33	5 lb	12 hours	12	Begin foliar sprays in the spring at approximately the pink bud stage and continue on a 14 - 21 day interval.
	Alternaria leaf spot and fruit rot Anthracnose Botrytis gray mold*	Pristine	boscalid + pyraclostrobin	7 + 11	8 - 12.5 oz	12 hours	0	Begin applications prior to disease and continue on a 7 - 10 day interval. Do not use Pristine in a tank mix.

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SMALL FRUIT DISEASES (Commercial) – continued

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BLUEBERRY (cont.)								
Early Bloom (cont.)	Alternaria leaf spot and fruit rot Anthracnose Botrytis gray mold* Mummy berry	Switch 62.5 WG	cyprodinil + fludioxonil	9 + 12	11 - 14 oz	12 hours	0	Rotate Switch with another fungicide with a different FRAC code.
	Alternaria leaf spot Anthracnose leaf spot Leaf rust Monilinia blight Mummy berry blight Powdery mildew Septoria leaf spot	Inspire Super	difenoconazole + cyprodinil	3 + 9	16 - 20 fl oz	12 hours	14	Begin applications prior to disease onset when conditions are conducive for disease. For Monilinia and mummy berry, apply at or near flower bud swell and again at leaf bud swelling. For other diseases, apply during early bloom.
	Botrytis gray mold*	Elevate 50 WG	fenhexamid	17	1.5 lb	12 hours	0	Begin applications of Elevate at 10% bloom. Continue through harvest. Make applications every 7 days.
	Phytophthora root rot	Alude	mono- and di-potassium salts of phosphorous acid	33	2.5 - 5 pt/A	4 hours	0	Begin foliar sprays in the spring at approximately the pink bud stage and continue on a 14 - 21 day interval.
	Phytophthora root rot Pythium Fusarium Rhizoctonia Powdery mildew Downy mildew	Fosphite	mono- and di-potassium salts of phosphorous acid	33	1 - 3 qt/ 100 gallon	4 hours	0	Foliar, or aerial, or root dip, or irrigation or trunk injection. See label for rates and complete instructions.

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SMALL FRUIT DISEASES (Commercial) – continued

Growth Stage	Disease	Product	Active Ingredient	FRAC Code	Rate/Acre	Re-entry Interval	Days to Harvest	Comments
BLUEBERRY (cont.)								
Early Bloom <i>(cont.)</i>								
Full Bloom to Early Petal Fall	Same as Early Bloom							
First and Second Cover	Same as Full Bloom to Early Petal Fall							
Third and Additional Covers	Same as First and Second Cover							
After Harvest	Same as Third and Additional Covers							
BLACKBERRY, RASPBERRY, LOGANBERRY								
Delayed Dormant	Anthracnose Cane and leaf rusts Cane blight Powdery mildew Spur blight	Liquid lime-sulfur (hard to find)	calcium polysulfides	M2	6 - 12 gal	48 hours	Dormant only	Dormant application. Begin at bud swell.
		Sulfurix	calcium polysulfides	M2	See label.	48 hours		
	Crown gall	None registered in Arkansas						
First Bloom through Petal Fall	Phytophthora root rot	Aliette WDG	aluminum tris	33	5 lb	12 hours	12	Begin applications of Aliette in the spring after bud break. Apply on a 45 - 60 day schedule.
	Anthracnose Botryosphaeria canker (Abound only for Botryosphaeria)	Abound FL	azoxystrobin	11	6 - 15.5 fl oz	4 hours	0	Abound applications should begin prior to disease development.
	Colletotrichum rot Powdery mildew Rosette (double blossom)	Pristine	boscalid + pyraclostrobin	7 + 11	8 - 12.5 oz	12 hours	0	Begin applications prior to disease and continue on a 7 - 10 day interval. Do not use Pristine in a tank mix.
	Rust Septoria leaf spot Spur blight	Cabrio EG	pyraclostrobin	11	14 oz	12 hours	0	Begin application of Cabrio at first sign of disease and continue on a 7 - 14 day interval. No more than 2 sequential applications before switching to a fungicide with a different FRAC code.

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SMALL FRUIT DISEASES (Commercial) – continued

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BLACKBERRY, RASPBERRY, LOGANBERRY (cont.)								
First Bloom through Petal Fall (<i>cont.</i>)	Alternaria leaf spot Anthracnose leaf spot Leaf rust Powdery mildew Septoria leaf spot	Inspire Super	difenoconazole + cyprodinil	3 + 9	16 - 20 fl oz	12 hours	14	Begin applications prior to disease onset when conditions are conducive for disease.
	Anthracnose Botrytis gray mold*	Switch 62.5 WG	cyprodinil + fludioxonil	9 + 12	11 - 14 oz	12 hours	0	Rotate Switch with another fungicide with a different FRAC code.
	Botrytis gray mold*	Elevate 50 WG	fenhexamid	17	1.5 lb	12 hours	1	Begin applying Elevate or Rovral at 10% bloom and continue every 7 - 14 days until harvest.
		Rovral 4 FL	iprodione	2	1 - 2 pt	24 hours	0	
	Anthracnose Botrytis* Spur blight	Captan 80 WDG	captan	M4	2 - 5 lb	72 hours	3	Apply Captan when blossoms are in bud (young canes are 8 to 10 inches long). Make a second application two weeks later. Apply a fall spray after old canes are removed.
	Phytophthora root rot Pythium, Fusarium Rhizoctonia Powdery mildew Downy mildew	Fosphite	mono- and di-potassium salts of phosphorous acid	33	1 - 3 qt/ 100 gallon	4 hours	0	Foliar, or aerial, or root dip, or irrigation or trunk injection. See label for rates and complete instructions.
Post Bloom through Harvest	Anthracnose Botrytis fruit rot*	Same as First Bloom						
	Rust	Pristine	boscalid + pyraclostrobin	7 + 11	8 - 12.5 oz	12 hours	14	Follow label directions. May not control systemically infected plants but helps prevent spread of the fungus to new plants in the spring. See label.
		Cabrio	pyraclostrobin	11	14 oz	12 hours	0	

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STRAWBERRY								
Pre-Bloom (early spring)	Leather rot Red stele	Aliette WDG	aluminum tris	33	2.5 - 5 lb	12 hours	Same day (12 hours)	Begin applications of Aliette in the spring after bud break. Apply on a 45 - 60 day schedule. See label for rate/dip instructions on new plants.
		Alude	mono- and di-potassium salts of phosphorous acid	33	2.5 - 5 pt/ 100 gal	4 hours	0	Begin applications two to three weeks after planting. See label for root dip instructions.
		Ridomil Gold SL	mefenoxam	4	1 pt	48 hours	0	For new plantings apply Ridomil Gold SL up to 3 times per crop. Make first application after planting. Make second application 30 days before harvest or at fruit set. Make third application during harvest. See label for established plantings.
	Phytophthora root rot Pythium, Fusarium Rhizoctonia Powdery mildew	Fosphite	mono- and di-potassium salts of phosphorous acid	33	1 - 3 qt/ 100 gallon	4 hours	0	Foliar, or aerial, or root dip, or irrigation or trunk injection. See label for rates and complete instructions
		Anthracnose Botrytis gray mold* (suppression only) Leather rot Powdery mildew	Abound FL	azoxystrobin	11	6 - 15.5 fl oz	4 hours	0
	Topguard EQ		azoxystrobin + flutriafol	11 + 3	5 - 6 fl oz	12 hours (5 days for cane tying, turning or girdling)	0	Do not apply more than 4 applications per year.
	Quadris Top		azoxystrobin + difenoconazole	11 + 3	12 - 14 oz	12 hours	0	
	Anthracnose Botrytis gray mold* Powdery mildew Strawberry leaf spot Leaf rust	Pristine	boscalid + pyraclostrobin	7 + 11	8 - 12.5 oz	12 hours	0	Begin Pristine applications no later than 10% bloom and continue on a 7 - 14 day schedule. See label.
		Botrytis gray mold*	Captan 50 WP	captan	M4	6 lb	24 hours	0

(continued)

SMALL FRUIT DISEASES (Commercial) – continued

Growth Stage	Disease	Product	Active Ingredient	FRAC Code	Rate/Acre	Re-entry Interval	Days to Harvest	Comments
STRAWBERRY (cont.)								
Pre-Bloom (early spring) (cont.)	Anthracnose Botrytis gray mold* Cercospora Powdery mildew Leaf rust	Inspire Super	difenoconazole + cyprodinil	3 + 9	16 - 20 fl oz	12 hours	0	Begin applications prior to disease onset when conditions are conducive for disease.
	Anthracnose Botrytis gray mold*	CaptEstate 68 WDG	captan + fenhexamid	M4 + 17	3.5 - 5.25 lb	12 hours	0	For anthracnose begin CaptEstate at flower bud emergence. For Botrytis gray mold begin at early bloom on a 7 - 10 day schedule.
	Anthracnose Botrytis gray mold* Powdery mildew	Switch 62.5 WG	cyprodinil + fludioxonil	9 + 12	11 - 14 oz (see label for anthracnose crown rot)	12 hours	0	
	Anthracnose Botrytis gray mold* Powdery mildew Strawberry leaf spot Leaf rust	Inspire Super	difenoconazole + cyprodinil	3 + 9	16 - 20 fl oz	12 hours	0	Apply Inspire Super at 7 - 14 day intervals. No more than two consecutive applications before switching to a product with a different mode of action.
	Botrytis fruit rot*	Elevate 50 WG	fenhexamid	17	1.5 lb	12 hours	0	
	Botrytis Powdery mildew	Luna Tranquility	fluopyram + pyri- methanil	7 9	16 to 27 fl oz	12 hours	1 day	Continue as needed on a 7- to 14-day interval.
	Anthracnose Botrytis gray mold* Powdery mildew Phomopsis leaf blight/ fruit rot Rhizopus fruit rot Mycosphaerella leaf spot	Luna Sensation	fluopyram + trifloxystrobin	7 + 11	4 - 7.6 fl oz	12 hours	0	Apply at the critical timings for disease control. Continue as needed on a 7 - 14 day interval. When disease pressure is severe, use the higher rates and/or shorter intervals.
	Anthracnose Botrytis crown rot* Botrytis gray mold* Stem end rot Phomopsis soft rot Strawberry leaf spot	Rovral 4 FL	iprodione	2	1.5 - 2 pt	24 hours	See label.	Do not make more than one application of Rovral per season. Do not apply after first fruiting flower.
	Botrytis gray mold* Powdery mildew	Fontelis	penthiopyrad	7	10 - 24 fl oz	12 hours	0	Begin applications of Fontelis prior to disease development and continue on a 7 - 14 day interval.

(continued)

SMALL FRUIT DISEASES (Commercial) – continued

Growth Stage	Disease	Product	Active Ingredient	FRAC Code	Rate/Acre	Re-entry Interval	Days to Harvest	Comments
STRAWBERRY (cont.)								
Pre-Bloom (early spring) (cont.)	Anthracnose Powdery mildew Strawberry leaf spot Leaf rust	Tilt	propiconazole	3	4 fl oz	12 hours	0	Begin applications of Tilt when disease levels are no more than 5%.
	Anthracnose Botrytis gray mold* (suppression only) Powdery mildew Strawberry leaf spot	Cabrio EG	pyraclostrobin	11	14 oz	12 hours	0	Begin applications of Cabrio prior to bloom and continue at 7 - 14 day intervals.
	Botrytis gray mold*	Scala SC	pyrimethanil	9	18 fl oz	12 hours	0	Make applications of Scala before disease appears on a 7 - 14 day interval.
	Botrytis gray mold*	Thiram Granuflo	thiram	M3	3.4 - 4.4 lb	24 hours	3	Broadcast 3 - 5 lb of Thiram at 10 intervals. Good coverage of buds, blossoms and developing fruit required for control.
	Anthracnose Powdery mildew Phomopsis soft rot	Flint	trifloxystrobin	11	2 - 3.2 oz	12 hours	7	Begin Flint applications and continue as needed preventively on a 7 - 14 day interval.
Early Bloom through Bloom	Leather rot Red stele	Aliette WDG	aluminum tris	33	2.5 - 5 lb	12 hours	Same day (12 hours)	Begin applications of Aliette in the spring after bud break. Apply on a 45 - 60 day schedule.
		Ridomil Gold SL	mefenoxam	4	1 pt	48 hours		
	Anthracnose Botrytis gray mold* (suppression only) Leather rot Powdery mildew	Topguard EQ	azoxystrobin + flutriafol	11 + 3	5 - 6 fl oz	12 hours (5 days for cane tying, turning or girdling)	0	Do not apply more than 4 applications per year.

(continued)

SMALL FRUIT DISEASES (Commercial) – continued

Growth Stage	Disease	Product	Active Ingredient	FRAC Code	Rate/Acre	Re-entry Interval	Days to Harvest	Comments
STRAWBERRY (cont.)								
Early Bloom through Bloom (cont.)	Anthracnose Botrytis gray mold* Powdery mildew Phomopsis leaf blight/ fruit rot Rhizopus fruit rot Mycosphaerella leaf spot	Luna Sensation	fluopyram + trifloxystrobin	7 + 11	4 - 7.6 fl oz	12 hours	0	Apply at the critical timings for disease control. Continue as needed on a 7 - 14 day interval. When disease pressure is severe, use the higher rates and/or shorter intervals.
	Phytophthora root rot Pythium Fusarium Rhizoctonia Powdery mildew	Fosphite	mono- and di-potassium salts of phosphorous acid	33	1 - 3 qt/ 100 gallon	4 hours	0	Foliar, or aerial, or root dip, or irrigation or trunk injection. See label for rates and complete instructions.
	Botrytis gray mold* Leaf scorch Powdery mildew	Topsin M 70 WDG	thiophanate-methyl	1	0.75 - 1 lb	24 hours	1	Begin applications of Topsin M at early bloom and continue on a 7 - 10 day interval. See label for crown rot.
		Topsin M 70 WP	thiophanate-methyl	1	0.75 - 1 lb	24 hours	1	
		Anthracnose Botrytis crown rot* Botrytis gray mold* Stem end rot Phomopsis soft rot Strawberry leaf spot	Same as Pre-Bloom					Check labels for PHI (post-harvest interval)
At Harvest	Botrytis fruit rot*	Quadris Top	azoxystrobin + difenoconazole	11 + 3	12 - 14 oz	12 hours	0	.
		Pristine	boscalid + pyraclostrobin	7 + 11	8 - 12.5 oz	12 hours	0	Begin Pristine applications no later than 10% bloom and continue on a 7 - 14 day schedule. See label.
		Captan 50 WP	captan	M4	6 lb	24 hours	0	Apply Captan on a 7 - 14 day schedule depending on weather and continue through harvest. See label.
		CaptEstate 68 WDG	captan + fenhexamid	M4 + 17	3.5 - 5.25 lb	12 hours	0	For Botrytis gray mold, begin CaptEstate 68 WDG at early bloom on a 7 - 10 day schedule.
		Inspire Super	difenoconazole + cyprodinil	3 + 9	16 - 20 fl oz	12 hours	0	Apply Inspire Super at 7 - 14 day intervals. No more than 2 consecutive applications before switching to a product with a different mode of action.

(continued)

SMALL FRUIT DISEASES (Commercial) – continued

Growth Stage	Disease	Product	Active Ingredient	FRAC Code	Rate/Acre	Re-entry Interval	Days to Harvest	Comments
STRAWBERRY (cont.)								
At Harvest <i>(cont.)</i>		Elevate 50 WG	fenhexamid	17	1.5 lb	12 hours	0	Begin applying Elevate at 10% bloom and continue every 7 - 14 days until harvest.
		Luna Sensation	fluopyram + trifloxystrobin	7 + 11	6 - 7.6 fl oz	12 hours	0	Apply at the critical timings for disease control. Continue as needed on a 7 - 14 day interval. When disease pressure is severe, use the higher rates and/or shorter intervals.
		Fontelis	penthiopyrad	7	10 - 24 fl oz	12 hours	0	Begin applications of Fontelis prior to disease development and continue on a 7 - 14 day interval.
		Scala SC	pyrimethanil	9	18 fl oz	12 hours	0	
		Topsin M 70 WDG	thiophanate-methyl	1	0.75 - 1 lb	24 hours	1	
		Topsin M 70 WP	thiophanate-methyl	1	0.75 - 1 lb	24 hours	1	
Post-Harvest and New Plantings	See Pre-Bloom to Harvest							

***Botrytis gray mold** has a high potential to develop resistance, and recent data suggest a high percentage of strains are resistant to several important fungicides. To help combat resistant strains from developing: (1) Limit the number of times fungicides of the same class are applied in one year. (2) Tank-mix a broad-spectrum fungicide such as captan or Thiram with Topsin-M (a benzimidazole fungicide) as Topsin-M does not have Botrytis activity due to resistance but is helpful for several early-season foliar diseases if present. (3) Resistance profiles vary from farm to farm and fungicides may have to be varied.