

VEGETABLE DISEASES (Commercial Production)

Travis Faske and Aaron Cato

Disease	Product	Active Ingredient	FRAC Code	Rate	Days to Harvest	Comments
ASPARAGUS						
Rust	Rally 40 WSP	myclobutanil	3	5 oz		See label. Apply at first evidence of disease.
	Bravo WeatherStik	chlorothalonil	M5	2 - 4 pt		See label. Follow label instructions.
	Sonata	<i>Bacillus pumilus</i> (bacteria)	---	2 - 4 qt	0	Can be used for organic production. See label.
Stemphylium Purple Spot	Flint 50 WG	trifloxystrobin	11	3 - 4 oz	0	
	Quadris	azoxystrobin	11	6 - 15.5 fl oz	100	
BEANS (Snap and Pole)						
Pythium Damping-Off	Ridomil Gold SL	mefenoxam	4	8 - 16 fl oz	2	Preplant incorporate in the top 2 inches. Also for this disease on lima and dry beans.
Pythium and Rhizoctonia Damping-Off	Trilex 2000	trifloxystrobin + metalaxyl	11 4	1 oz/cwt seed		
	Basicop WP Champ 4.6 F Tenn-Cop 5 E	fixed copper	M1	2 - 4 lb 1 1/3 - 2 1/3 pt 3 pt	1	Spray at first sign of disease; repeat on a 10 day schedule as needed.
White Mold (Sclerotinia)	Blocker 4 F	PCNB	14	4 pt		See label. Do not apply after pod formation.
	Endura	boscalid	7	8 - 11 oz		
Gray Mold (Botrytis) and Rust	Bravo Ultrex	chlorothalonil	M5	2.7 lb	7	Apply at first sign of disease on a weekly schedule as needed.
	Equus	chlorothalonil	M5	1.37 - 2 pt		Follow label directions.
	Endura	boscalid	7	8 - 11 oz		See label. Apply at first sign of disease.
Powdery Mildew and Rust	Microthiol Special	wettable sulfur	M2	7 lb	0	Apply at first sign of disease and repeat at 14 day intervals as needed.
	Endura 70 WG	boscalid	7	8 - 11 oz	7	7 - 10 day interval
	Headline 2.09 F	pyraclostrobin	11	6 - 9 fl oz	7	7 - 10 day interval
Gray Mold (Botrytis), Powdery Mildew and Rust	Priaxor	fluxapyroxad + pyraclostrobin	7 11	4 - 8 fl oz	7	
Root and Stem Rot (<i>Rhizoctonia solani</i>)	Blocker 4 F	PCNB	14	2 - 3 pt	45	Apply in-furrow at planting.

VEGETABLE DISEASES (Commercial Production) – continued

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BEANS (Dry)						
Anthracnose, Downy Mildew, Rust	Bravo Ultrex	chlorothalonil	M5	1.25 - 1.8 lb	7	Apply at early bloom and repeat as needed at 7 - 10 day intervals.
	Maneb 80 WP	maneb	M3	1.5 - 2 lb	30	
Rust	tebuconazole (various trade names 3.6 F)	tebuconazole	3	4 - 6 fl oz	14	
Anthracnose, Ascochyta Blight	Quadris Opti	azoxystrobin + chlorothalonil	11 M5	1.6 - 2.4 pt		See label for important restrictions and application information.
Anthracnose, Ascochyta Blight, Powdery Mildew, Rust	Vertisan	penthiopyrad	7	14 - 20 fl oz	21	
	Priaxor	fluxapyroxad + pyraclostrobin	7 11	4 - 8 fl oz	21	
BEANS (Dry) and FIELD PEAS (<i>Phaseolus</i> and <i>Vigna</i> spp.)						
Anthracnose, Ascochyta Blight, Mycosphaerella Blight, Powdery Mildew, Rust	Headline	pyraclostrobin	11	6 - 9 fl oz	30	See label for important restrictions and application information.
	Endura	boscalid	7	8 - 11 oz	See label.	Follow label instructions. Not labeled on peas.
	Topsin M 4.5 F	thiophanate-methyl	1	20 - 30 fl oz	1	See label information.
	Quilt Xcel	azoxystrobin + propiconazole	11 3	10.5 - 14 fl oz	14	
	Aprovia Top 1.62 EC	difenconazole + benzovindiflupyr	3 + 7	10.5 - 11 fl oz	14	
	Miravis Top	pydiflumetofen + difenaconazole	3 + 7	13.7 fl. oz/A	14	See label for more information about use and diseases controlled by this product.
Rust, White Mold	Proline 480 SC	prothioconazole	3	5.7 fl oz	7	
BRASSICA (Leafy Greens)						
White Rust (<i>Albugo</i>) Black Spot (<i>Alternaria</i>)	Quadris 2.08	azoxystrobin	11	6 - 15.5 fl oz	0	Apply prior to disease and continue on a 7 - 14 day schedule. Do not make more than 2 consecutive applications of Quadris nor more than 3 total applications per acre per crop year. Do not apply more than 1.44 qts per acre per season.
Alternaria	Fontelis	penthiopyrad	7	14 - 30 fl oz	3	
	Quadris Top	azoxystrobin + difenoconazole	11 3	12 - 14 fl oz	1	
	Inspire Super	difenoconazole + cyprodinil	3 9	16 - 20 fl oz	7	
Downy Mildew	Revus	mandipropamid	40	8 fl oz		See label information.

VEGETABLE DISEASES (Commercial Production) – continued

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CABBAGE, BROCCOLI, COLE CROPS						
Alternaria Leaf Spot	Endura 70 WP	boscalid	7	6 - 9 oz	0	7 - 14 day schedule.
	Maneb 80 WP	maneb	M3	1.5 - 2 lb	7	7 - 14 day schedule.
	Ridomil Gold	mefenoxam + chloro-	4	1.5 pt	7	7 - 14 day schedule.
	Bravo SC	thalonil	M5			
	Cabrio 20 EC	pyraclostrobin	11	12 - 16 oz	0	7 - 14 day schedule.
	Bravo Weatherstik	chlorothalonil	M5	1.5 - 3 pt	7	7 - 14 day schedule.
	Quadris 2.08	azoxystrobin	11	6 - 15 fl oz	0	7 - 14 day schedule.
	Switch 62.5 WG	cyprodinil + fludioxonil	9 12	11 - 14 oz	7	7 - 14 day schedule.
Downy Mildew	Ridomil Gold	mefenoxam + chloro-	4	1.5 pt	7	7 - 10 day interval until disease is under control.
	Bravo SC	thalonil	M5			Alternate fungicides with different modes of action.
	Cabrio 20 EC	pyraclostrobin	11	12 - 16 oz	0	See label.
	Quadris 2.08	azoxystrobin	11	6 - 15 oz	0	See label.
	Aliette 80 WG	fosetyl-AI	33	2 - 5 lb	3	See label.
	Presidio 4 SC	fluopicolide	43	3 - 4 fl oz	2	See label.
	Reason 500 SC	fenamidone	11	5.5 - 8.2 fl oz	2	See label.
	Revus 2.08 SC	mandipropamid	40	8 fl oz	1	See label.
Pythium Damping-Off	Ridomil Gold SL	mefenoxam	4	0.25 - 0.5 pt	NA	Apply to soil at planting or transplanting.
Rhizoctonia Stem and Root Rot	Endura 70 WG	boscalid	7	6 - 9 oz	0	Apply at first sign of disease; may be repeated 7 - 14 days later.
CANTALOUPE – See CUCURBITS						

VEGETABLE DISEASES (Commercial Production) – continued

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CORN (Sweet)						
Anthrachnose (<i>Colletotrichum</i>)	Tilt, Propimax 3.6 EC (multiple generics)	propiconazole	3	4 fl oz	14	
Northern corn leaf blight (<i>Exserohilum turcicum</i>)	Quadris 2.08 SC	azoxystrobin	11	6.2 - 9 fl oz	7	See Fungicide resistance management guidelines.
Southern rust (<i>Puccinia polysora</i>)	Evito 480 SC	fluoxastrobin	11	2 - 3.8 fl oz	7	See Fungicide resistance management guidelines.
	Headline 2.09 SC	pyraclostrobin	11	6 - 12 fl oz	7	See Fungicide resistance management guidelines.
	Bravo Weatherstick (multiple generics)	chlorothalonil	M5	16 - 24 oz	14	See label on other chlorothalonil fungicides.
	Dithane DF (multiple generics)	mancozeb	M3	32 - 48 oz	7	See label on other mancozeb fungicides.
	Quilt Xcel 2.2 SE	azoxystrobin + propiconazole	11 + 3	10.5 - 14 fl oz	14	
	Stratego YLD 4.18 SC	trifloxystrobin + prothioconazole	11 + 3	4 - 5 fl oz	0	
	Priaxor 4.17 SC	pyraclostrobin + fluxapyroxad	11 + 7	4 - 8 fl oz	7	
	Elatius 45 WG	azoxystrobin + benzovindiflupyr	11 + 7	7.3 oz	7	
	Trivapro 2.21 SE	benzovindiflupyr + azoxystrobin + propiconazole	7 + 11 + 3	13.7 fl oz	14	
CUCUMBERS – See CUCURBITS						

VEGETABLE DISEASES (Commercial Production) – continued

Disease	Product	Active Ingredient	FRAC Code	Rate	Days to Harvest	Comments
CUCURBITS: CANTALOUPE, CUCUMBER, MUSKMELON, PUMPKIN, SUMMER SQUASH, AND WATERMELON						
Angular leaf spot (<i>Pseudomonas syringae</i> pv. <i>lachrymans</i>)	Kocide 2000	copper hydroxide	M1	1 - 2.25 lb		Crop injury may occur at high rates.
Alternaria leaf spot	Topsin or T-Methyl 70 W	thiophanate-methyl	1	16 oz	0	Not for <i>Alternaria</i> or <i>Cercospora</i> . See Fungicide resistance management guidelines.
Anthracnose (<i>Colletotrichum</i> spp.)	Topsin or T-Methyl 4.5 F	thiophanate-methyl	1	10 oz	1	Not for <i>Alternaria</i> or <i>Cercospora</i> . See Fungicide resistance management guidelines.
Cercospora leaf spot (<i>Cercospora citrulina</i>)	Quadris 2.08 SC	azoxystrobin	11	11 - 15.5 fl oz	1	See Fungicide resistance management guidelines.
	Cabrio 20 EC	pyraclostrobin	11	12 - 16 oz	0	See Fungicide resistance management guidelines.
Gummy stem blight (<i>Didymella bryoniae</i>)	Bravo Weatherstick (multiple generics)	chlorothalonil	M5	16 - 24 oz	3	See label on other chlorothalonil fungicides.
Target spot (<i>Corynespora cassiicola</i>)	Dithane DF (multiple generics)	mancozeb	M3	32 - 48 oz	5	
	Aprovia Top 1.62 EC	difenoconazole + benzovindiflupyr	3 + 7	10.5 - 13.5 fl oz	0	
	Inspire Super 2.82 SC	difenoconazole + cyprodinil	3 + 9	16 - 20 fl oz	7	
	Luna Experience 3.3 F	fluopyram + tebuconazole	7 + 3	6 - 17 fl oz	0	
	Luna Sensation 1.67 F	fluopyram + trifloxystrobin	7 + 11	7.6 fl oz	0	
	Switch 62.5 WG	cyprodinil + fludioxonil	9 + 12	11 - 14 oz	0	
	Quadris Top 1.67 SC	azoxystrobin + difenoconazole	11 + 3	12 - 14 fl oz	0	
	Pristine 38 WG	pyraclostrobin + boscalid	11 + 7	12.5 - 18.5 oz	0	
	Tanos 50 WP	famoxadone + cymoxanil	11 + 27	8 oz	3	Only <i>Alternaria</i> and Anthracnose.
	Quadris Opti	azoxystrobin + chlorothalonil	11 + M5	3.2 pt	1	
	Gavel 75 DF	zoxamide + mancozeb	22 + M3	1.5 - 2 lb	5	<i>Cercospora</i> and <i>Alternaria</i> only.
	Orondis Opti 3.37 SC	oxathiapiprolin + chlorothalonil	49 + M5	1.75 - 2.5 fl oz	0	
	Orondis Ultra 2.33 SC	oxathiapiprolin + mandipropamid	49 + 40	5.5 - 8 fl oz	0	

VEGETABLE DISEASES (Commercial Production) – continued

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CUCURBITS: CANTALOUPE, CUCUMBER, MUSKMELON, PUMPKIN, SUMMER SQUASH, AND WATERMELON (cont.)						
Downy Mildew (<i>Pseudoperonospora cubensis</i>)	Reason 500 SC	fenamidone	11	5.5 oz	14	See Fungicide resistance management guidelines.
	Cabrio 20 EC	pyraclostrobin	11	8 - 12 oz	0	See Fungicide resistance management guidelines.
	Flint 50 WG	trifloxystrobin	11	4 oz	0	See Fungicide resistance management guidelines.
	Pristine 38 WG	pyraclostrobin + boscalid	11 + 7	12.5 - 18.5 oz	0	
	Ranman 400 SC	cyazofamid	21	2 - 2.75 fl oz	0	
	Curzate 60 DF	cymoxanil	27	3.2 - 5 oz	3	
	Previcur Flex 6 F	propamocarb	28	1.2 pt	2	
	Omega 500 F	fluazinam	29	0.75 - 1.5 pt	30	
	Aliette 80 WDG	fosetyl-AL	33	2 - 5 lb	1	
	Forum 4.18 F	dimethomorph	40	6 fl oz	0	
	Revus 2.08 SC	mandipropamid	40	8 fl oz	1	
	Presido 4 F	fluopicolide	43	4 fl oz	2	
	Dithane DF (multiple generics)	mancozeb	M3	32 - 48 oz	5	
	Tanos 50 WP	famoxadone + cymoxanil	11 + 27	8 oz	3	
	Ridomil Gold Bravo SC 3.67	mefenoxam + chlorothalonil	4 + M5	2 lb	7	
	Gavel 75 DF	zoxamide + mancozeb	22 + M3	1.5 - 2 lb	5	
	Orondis Opti 3.37 SC	oxathiapiprolin + chlorothalonil	49 + M5	1.75 - 2.5 fl oz	0	Good on downy mildew.
Orondis Ultra 2.33 SC	oxathiapiprolin + mandipropamid	49 + 40	5.5 - 8 fl oz	0		

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CUCURBITS: CANTALOUPE, CUCUMBER, MUSKMELON, PUMPKIN, SUMMER SQUASH, AND WATERMELON (cont.)						
Powdery Mildew						
Powdery Mildew of cucurbits is caused by two fungal genera, <i>Sphaerotheca</i> and <i>Erysiphe</i> , that can quickly (high risk) develop resistance to fungicides. Use a tank mix or premix with two modes of action (different FRAC Code numbers) and avoid sequential use of a single chemistry (same FRAC Code number) within the same season.						
Powdery Mildew (<i>Sphaerotheca</i> spp. or <i>Erysiphe cichoracearum</i>)	Ralley 40 WSP	myclobutanil	3	2.5 - 5 oz	1	
	Velum Prime	fluopyram	7	6.5 - 6.8 fl oz	0	
	Fontelis 1.67 SC	penthiopyrad	7	12 - 16 fl oz	0	
	Quintec 2.08 SC	quinoxifen	13	4 - 6 oz	3	
	Bravo Weatherstick (multiple generics)	chlorothalonil	M5	16 - 24 oz	3	See label on other chlorothalonil fungicides.
	Torino 0.85 SC	cyflufenamid	U06	3.4 oz	0	Resistance is known in some populations.
	Gatten	flutianil	U13	6 - 8 fl oz	0	Cantaloupe, cucumber, and squash only.
	Inspire Super 2.82 SC	difenoconazole + cyprodinil	3 + 9	16 - 20 fl oz	7	
	Luna Experience 3.3 F	fluopyram + tebuconazole	7 + 3	6 - 17 fl oz	7	
	Switch 62.5 WG	cyprodinil + fludioxonil	9 + 12	11 - 14 oz	1	
	Quadris Top 1.67 SC	azoxystrobin + difenoconazole	11 + 3	12 - 14 fl oz	1	
	Pristine 38 WG	pyraclostrobin + boscalid	11 + 7	12.5 - 18.5 oz	0	
	Quadris Opti 1.0 SC	azoxystrobin + chlorothalonil	11 + M5	3.2 qt		
	Aprovia Top 1.62 EC	difenoconazole + benzovindiflupyr	3 + 7	10.5 - 13.5 fl oz	0	
Orondis Opti 3.37 SC	oxathiapiprolin + chlorothalonil	49 + M5	1.75 - 2.5 fl oz	0		

VEGETABLE DISEASES (Commercial Production) – continued

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EGGPLANT						
Anthracnose fruit rot,	Endura 70 WP	boscalid	7	2.5 - 3.5 oz	0	
Early blight (<i>Alternaria solani</i>)	Fontelis 1.67 SC	penthiopyrad	7	16 - 24 fl oz	0	
	Quadris 2.08 SC	azoxystrobin	11	6.2 - 15.5 fl oz	0	See Fungicide resistance management guidelines.
Gray mold (<i>Botrytis</i> sp.)	Reason 500 SC	fenamidone	11	5.5 oz	14	See Fungicide resistance management guidelines.
	Evito 480 SC	fluoxastrobin	11	2 - 5.7 fl oz	3	See Fungicide resistance management guidelines.
	Cabrio 20 EC	pyraclostrobin	11	8 - 12 oz	0	See Fungicide resistance management guidelines.
	Bravo Weatherstick (multiple generics)	chlorothalonil	M5	12 - 16 oz	3	See label on other chlorothalonil fungicides.
	Aprovia Top 1.62 EC	difenoconazole + benzovindiflupyr	3 + 7	10.5 - 13.5 fl oz	14	
	Switch 62.5 WG	cyprodinil + fludioxonil	9 + 12	11 - 14 oz	0	
	Quadris Top 1.67 SC	azoxystrobin + difenoconazole	11 + 3	8 - 14 fl oz	1	
	Priaxor 4.17 SC	pyraclostrobin + fluxapyroxad	11 + 7	4 - 8 fl oz	0	
Phytophthora blight and fruit rot	Ranman 400 SC	cyazofamid	21	2.75 fl oz	0	
	Omega 500 F	fluazinam	29	0.75 - 1.5 pt	30	
	Forum 4.18 F	dimethomorph	40	6 fl oz	3	
	Revus 2.08 SC	mandipropamid	40	8 fl oz	1	
	Tanos 50 WP	famoxadone + cymoxanil	11 + 27	8 - 10 oz	3	
OKRA						
Anthracnose Downy Mildew	Quadris 2.08 SC	azoxystrobin	11	6 - 15.5 fl oz	0	Apply prior to disease and on a 7 - 14 day schedule as needed. Do not make more than 2 consecutive applications and do not make more than 4 applications per crop year. Do not apply more than 1.92 qts per acre per season.
	Reason 500 SC	fenamidone	11	5.5 oz		
Seedling Disease	Quadris 2.08 SC	azoxystrobin	11	0.4 - 0.8 fl oz/ 1,000 row ft	N/A	In-furrow at planting or 7 inch band over the row shortly after emergence.

VEGETABLE DISEASES (Commercial Production) – continued

Disease	Product	Active Ingredient	FRAC Code	Rate	Days to Harvest	Comments
ONION, GARLIC, LEEK, SHALLOT						
Alternaria Blotch Powdery Mildew Downy Mildew	Cabrio 20 EG	pyraclostrobin	11	8 - 12 oz	7	Follow label directions closely.
	Pristine	boscalid + pyraclostrobin	7 11	12.5 - 18.5 oz	See label.	Follow label information for crops and diseases.
	Scala SC	pyrimethanil	9	9 - 18 oz		
Downy Mildew	Revus	mandipropamid	40	8 fl oz		See label information.
Purple Blotch, Stemphylium, Botrytis	Inspire Super	difenoconazole + cyprodinil	3 9	16 - 20 fl oz	7	
	Quadris Top	azoxystrobin + difenoconazole	11 3	12 - 14 fl oz	3	
	Fontelis	penthiopyrad	7	16 - 24 fl oz	3	
PEAS (Southern and English)						
Pythium Damping-Off	Ridomil Gold SL	mefenoxam	4	8 - 16 fl oz	2	Preplant incorporate in the top 2 inches.
Downy Mildew Cercospora Leaf Spot Anthracnose, Rust	Bravo WeatherStik	chlorothalonil	M5	1 3/8 - 2 pt	14	Apply at first sign of disease on a 7 - 10 day schedule as needed.
	Priaxor	fluxapyroxad + pyraclostrobin	7 11	4 - 8 fl oz	7	
Cercospora Leaf Spot, Anthracnose, Rust	Fontelis	penthiopyrad	7	14 - 30 fl oz	0	
Cercospora Leaf Spot, Anthracnose, Rust, Powdery Mildew	Vertisan	penthiopyrad	7	14 - 20 fl oz	21	

VEGETABLE DISEASES (Commercial Production) – continued

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PEPPER						
Anthracnose fruit rot (<i>Colletotrichum</i> spp.)	Quadris 2.08 SC	azoxystrobin	11	6 - 15.5 fl oz	0	See Fungicide resistance management guidelines.
	Reason 500 SC	fenamidone	11	5.5 - 8.2 oz	14	See Fungicide resistance management guidelines.
	Cabrio 20 EC	pyraclostrobin	11	8 - 12 oz	0	See Fungicide resistance management guidelines.
	Flint 50 WG	trifloxystrobin	11	3 - 4 oz	3	See Fungicide resistance management guidelines.
	Bravo Weatherstick (multiple generics)	chlorothalonil	M5	16 - 24 oz	3	See label on other chlorothalonil fungicides.
	Dithane DF (multiple generics)	mancozeb	M3	32 - 48 oz	7	See label on other mancozeb fungicides.
	Aprovia Top 1.62 EC	difenoconazole + benzovindiflupyr	3 + 7	10.5 - 13.5 fl oz	0	
	Quadris Top 1.67 SC	azoxystrobin + difenoconazole	11 + 3	8 - 14 fl oz	0	
	Tanos 50 WP	famoxadone + cymoxanil	11 + 27	8 - 10 oz	3	
	Orondis Opti 3.37 SC	oxathiapiprolin + chlorothalonil	49 + M5	1.75 - 2.5 fl oz	0	
Priaxor 4.17 SC	pyraclostrobin + fluxapyroxad	11 + 7	4 - 8 fl oz	0		
Bacterial spot (<i>Xanthomonas</i> sp.)	Tanos 50 WP	famoxadone + cymoxanil	11 + 27	8 - 10 oz	3	Suppression only. Tank mix with copper or mancozeb.
	Kocide 2000	copper hydroxide	M1	1.5 - 2.25 lb	0	Several other copper compounds available.
	Manzate Pro-Stick (multiple generics)	mancozeb	M3	1.6 - 2.1 lb	7	See label on other mancozeb fungicides.

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PEPPER (cont.)						
Cercospora leaf blight	Cabrio 20 EC	pyraclostrobin	11	8 - 12 oz	0	See Fungicide resistance management guidelines.
	Manzate Pro-Stick (multiple generics)	mancozeb	M3	1 - 2 lb	7	See label on other mancozeb fungicides.
	Quadris Top 1.67 SC	azoxystrobin + difenoconazole	11 + 3	8 - 14 fl oz	0	
	Aprovia Top 1.62 EC	difenoconazole + benzovindiflupyr	3 + 7	10.5 - 13.5 fl oz	0	
	Orondis Opti 3.37 SC	oxathiapiprolin + chlorothalonil	49 + M5	1.75 - 2.5 fl oz	0	
Phytophthora foliar blight and fruit rot (<i>Phytophthora capsici</i>)	Reason 500 SC	fenamidone	11	8.2 oz	14	See Fungicide resistance management guidelines.
	Ranman 400 SC	cyazofamid	21	2.75 fl oz	0	
	Omega 500 F	fluazinam	29	0.75 - 1.5 pt	30	
	Forum 4.18 F	dimethomorph	40	6 fl oz	0	
	Revus 2.08 SC	mandipropamid	40	8 fl oz	1	
	Manzate Pro-Stick (multiple generics)	mancozeb	M3	1.6 - 2.1 oz	7	See label on other mancozeb fungicides.
	Tanos 50 WP	famoxadone + cymoxanil	11 + 27	8 - 10 oz	3	
	Orondis Opti 3.37 SC	oxathiapiprolin + chlorothalonil	49 + M5	1.75 - 2.5 fl oz	0	

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PEPPER (cont.)						
Powdery Mildew	Quadris 2.08 SC	azoxystrobin	11	6 - 15.5 fl oz	0	See Fungicide resistance management guidelines.
	Fontelis 1.67 SC	penthiopyrad	7	16 - 24 fl oz	0	
	Flint 50 WG	trifloxystrobin	11	1.5 - 2 oz	0	See Fungicide resistance management guidelines.
	Quintec 2.08 SC	quinoxifen	13	4 - 6 oz	3	Leaf spotting can occur.
	Aprovia Top 1.62 EC	difenoconazole + benzovindiflupyr	3 + 7	10.5 - 13.5 fl oz	0	
	Switch 62.5 WG	cyprodinil + fludioxonil	9 + 12	8-14 oz	0	
	Quadris Top 1.67 SC	azoxystrobin + difenoconazole	11 + 3	8 - 14 fl oz	1	
	Priaxor 4.17 SC	pyraclostrobin + fluxapyroxad	11 + 7	4 - 8 fl oz	0	
	Orondis Ultra 2.33 SC	oxathiapiprolin + mandipropamid	49 + 40	5.5 - 8 fl oz	0	
	Orondis Opti 3.37 SC	oxathiapiprolin + chlorothalonil	49 + M5	1.75 - 2.5 fl oz	0	
Southern blight (<i>Sclerotium rolfsii</i>)	Evito 480 SC	fluoxastrobin	11	2 - 5.7 fl oz	3	
	Cabrio 20 EC	pyraclostrobin	11	12 - 16 oz	0	Suppression only.
	Blocker 4F	PCNB	14	4.5 - 7.5 pt/ 100 gal water		Use ½ pt transplant solution per plant.
	Priaxor 4.17 SC	pyraclostrobin + fluxapyroxad	11 + 7	4 - 8 fl oz	7	Suppression only.

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PEPPER (cont.)						
Target Spot (<i>Corynespora cassiicola</i>)	Evito 480 SC	fluoxastrobin	11	2 - 5.7 fl oz	3	
	Cabrio 20 EC	pyraclostrobin	11	8 - 12 oz	0	See Fungicide resistance management guidelines.
	Priaxor 4.17 SC	pyraclostrobin + fluxapyroxad	11 + 7	4 - 8 fl oz	7	
POTATO: IRISH						
Early Blight (<i>Alternaria</i> sp.)	Velum Prime	fluopyram	7	6.5 - 6.8 fl oz	7	
	Scala 5.0 SC	pyrimethanil	9	7 oz	7	
	Quadris 2.08 SC	azoxystrobin	11	6 - 15 fl oz	14	See Fungicide resistance management guidelines.
	Reason 500 SC	fenamidone	11	5.5 - 8.2 oz	14	See Fungicide resistance management guidelines.
	Evito 480 SC	fluoxastrobin	11	2 - 3.8 fl oz	7	
	Gem 500 SC	trifloxystrobin	11	2.9 - 3.8	7	
	Headline 2.09 SC	pyraclostrobin	11	6 - 12 oz	3	See Fungicide resistance management guidelines.
	Previcur Flex 6 F	propamocarb	28	0.7 - 1.2 pt	2	
	Kocide 2000	copper hydroxide	M1	0.75 - 3 lb	0	Several other copper.
	Bravo Weatherstick (multiple generics)	chlorothalonil	M5	16 - 24 oz	3	See label on other chlorothalonil fungicides.
	Dithane F-45 (multiple generics)	mancozeb	M3	0.4 - 1.6 lb	3	Not for target spot. See label on other mancozeb fungicides.
	Quadris Top 1.67 SC	azoxystrobin + difenoconazole	11 + 3	8 - 14 fl oz	14	
	Priaxor 4.17 SC	pyraclostrobin + fluxapyroxad	11 + 7	4 - 8 fl oz	7	
	Tanos 50 WP	famoxadone + cymoxanil	11 + 27	8 - 10 oz	3	
	Gavel 75 DF	zoxamide + mancozeb	22 + M3	1.5 - 2 lb	5	

VEGETABLE DISEASES (Commercial Production) – continued

Disease	Product	Active Ingredient	FRAC Code	Rate	Days to Harvest	Comments
POTATO: IRISH (cont.)						
Late blight (<i>Phytophthora infestans</i>)	Reason 500 SC	fenamidone	11	5.5 - 8.2 oz	14	See Fungicide resistance management guidelines.
	Ranman 400 SC	cyazofamid	21	1.4 - 2.75 fl oz	7	
	Curzate 60 DF	cymoxanil	27	3.2 oz	14	
	Forum 4.18 F	dimethomorph	40	4 - 6 fl oz	4	
	Ridomil Gold Bravo SC 3.67	mefenoxam + chlorothalonil	4 + M5	2.5 pt	14	
	Quadris Opti 1.0 SC	azoxystrobin + chlorothalonil	11 + M5	3.2 qt	7	
Powdery mildew	Vertisan	penhiopyrad	7	10 - 24 fl oz	7	
	Quadris 2.08 SC	azoxystrobin	11	6 - 15 fl oz	14	See Fungicide resistance management guidelines.
	Headline 2.09 SC	pyraclostrobin	11	6 - 12 fl oz	3	See Fungicide resistance management guidelines.
	Luna Tranquility	fluopyram + pyrimethanil	7 + 9	8 - 11.2 fl oz	7	
	Quadris Top 1.67 SC	azoxystrobin + difenoconazole	11 + 3	8 - 14 fl oz	14	
	Priaxor 4.17 SC	pyraclostrobin + fluxapyroxad	11 + 7	6 - 8 fl oz	0	
	Quadris Opti 1.0 SC	azoxystrobin + chlorothalonil	11 + M5	1.6 pt	14	
PUMPKIN – See CUCURBITS						

VEGETABLE DISEASES (Commercial Production) – continued

Disease	Product	Active Ingredient	FRAC Code	Rate	Days to Harvest	Comments
RADISH						
Alternaria Leaf Spot Cercospora Leaf Spot Powdery Mildew White Rust	Cabrio 20 EG	pyraclostrobin	11	8 - 12 oz	0	Use 8 - 16 oz for white rust control. See label for other information.
Alternaria Leaf Spot Cercospora Leaf Spot Powdery Mildew Rust	Fontelis	penthiopyrad	7	16 - 30 fl oz		
Pythium Damping-Off Phytophthora Stem Rot White Rust	Ridomil Gold SL	mefenoxam	4	8 - 16 fl oz		Apply to the soil at planting or transplanting.
SPINACH						
Pythium Damping-Off White Rust	Ridomil Gold SL	mefenoxam	4	8 - 16 fl oz		Apply to the soil at planting or transplanting.
Downy Mildew	Aliette 50 WDG	fosetyl-AI	33	2 - 5 lb	3	Apply at first sign of disease and repeat on a 7 - 21 day schedule as needed. Beware of certain tank mixes – see label.
	Ridomil Gold-Copper	mefenoxam + copper hydroxide	4 M1	2.5 lb	21	Spray at first sign of disease. Apply 21 days after Ridomil EC preplant application and on a 14 day schedule afterwards as needed. See label for precautions.
Foliar Leaf Spots White Rust	Quadris 2.08 FL	azoxystrobin	11	6.2 - 15.4 fl oz	0	Apply at first sign of disease and then on a 7 - 14 day schedule. Follow resistance management guidelines on label.
Downy Mildew Powdery Mildew	Quadris 2.08 FL	azoxystrobin	11	12.3 - 15.4 fl oz	0	Apply preventively on a weekly basis. If possible, alternate applications with a fungicide with a different mode of action.
	Kocide 2000	copper hydroxide	M1	1.5 - 2 lb	0	Apply as needed. Use higher rate for heavier disease situations. Flecking may occur on leaves.
Downy Mildew White Rust	Reason 500 SC	fenamidone	11	5.5 - 8.2 oz		See label.
Alternaria Leaf Spot Cercospora Early Blight Late Blight Powdery Mildew Rust	Fontelis	penthiopyrad	7	14 - 30 fl oz	3	

VEGETABLE DISEASES (Commercial Production) – continued

Disease	Product	Active Ingredient	FRAC Code	Rate	Days to Harvest	Comments
SQUASH – See CUCURBITS.)						
SWEET POTATO						
Black rot (<i>Cercosyria fimbriata</i>)	Mertec 340 F	thiabendazole	3	107 fl oz/100 gal		Drip roots 1 to 2 min before planting.
Damping Off (<i>Pythium</i> spp.)	Ridomil Gold 4 SL	mefenoxam	4	1 - 2 pt	7	Incorporate into soil.
Foliar diseases (<i>Alternaria</i>) and powdery mildew	Velum Prime	fluopyram	7	6 - 6.8 fl oz	7	
	Quadris 2.08 SC	azoxystrobin	11	9 - 15.5 fl oz	14	See Fungicide resistance management guidelines.
	Reason 500 SC	fenamidone	11	5.5 - 8.2 oz	14	See Fungicide resistance management guidelines.
	Scala 5.0 SC	pyrimethanil	9	7 fl oz	7	
	Switch 62.5 WG	cyprodinil + fludioxonil	9 + 12	11 - 14 oz	7	
	Quadris Top 1.67 SC	azoxystrobin + difenoconazole	11 + 3	8 - 14 fl oz	14	
	Aprovia Top 1.EC	difenoconazole + benzovindiflupyr	3 + 7	10.5 - 13.5 fl oz	14	
Soilborne (<i>Rhizoctonia</i> sp. <i>Sclerotinia</i> sp.)	Endura 70 WP	boscalid	7	2.5 - 10	10	
	Vertisan	penthiopyrad	7	14 - 24 fl oz	7	
	Velum Prime	fluopyram	7	6 - 6.8 fl oz	7	
	Quadris 2.08 SC	azoxystrobin	11	0.4 - 0.8 fl oz/ 1000 ft of row	0	See Fungicide resistance management guidelines.
	Evito 480 SC	fluoastrobilin	11	0.16 - 0.24 fl oz/ 1000 ft of row	7	
Late blight	Onondis Ultra	oxathiapiprolin + mandipropamid	U15 + M5	5.5 – 8.0 fl. oz/A	14	See label for more information.
Postharvest Rhizopus soft rots	Botran 75 W	dicloran	14	1 lb/100 gal		Dip seed sweet potatoes 10 to 15 seconds in a well agitated Botran suspension. See label for more information.
Scurf (<i>Monilochaetes infuscans</i>) and Sclerotial blight (<i>Sclerotium rolfsii</i>)	Botran 75 W	dicloran	14	1 lb/7.5 gal		Dip seedling roots for 30 seconds before planting. See label for more information.
TOMATO – See tomato disease section						
WATERMELON – See CUCURBITS						

VEGETABLE NEMATODES (Commercial Production)

Travis Faske

Nematode	Nematicide	Formulation	Active Ingredient	Rate/Acre	Comments
Root-Knot, Lesion, Stubby Root and Reniform	Telone II	Liquid	1,3-dichloropropene	See label.	Inject 12 inches below planting depth and seal immediately with appropriate bedding equipment. Wait 7 - 14 days before planting.
	Vydate L	Liquid	oxamyl	See label.	
	Velum Prime	Liquid	fluopyram	6.5 - 6.8 fl oz	Apply as in-seed-furrow spray at planting directed on or below seed. Can be applied with drip irrigation in some vegetable systems, see label for details.

RESTRICTED USE PESTICIDES – For sale and use only by licensed/certified applicators or persons under their direct supervision. **These are dangerous pesticides – use caution in handling and read and follow current label directions.** If nematodes are suspected to be causing problems, a diagnostic soil sample should be taken to the county agent for submission to the Cooperative Extension Service Nematode Diagnostic Laboratory. **A small fee is required.**