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## **PURDUE EXTENSION**

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**EXPERT** REV/IEW/ED

# Pumpkin Fungicide Guide for Indiana 2009

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Fungicide Information						Foliar Diseases <sup>1</sup>					Comments		
Fungicides with a number in the MOA column should be tank mixed or alternated with a product with a different MOA code according to the label. Trade Name(s) MOA Code		Common Name(s)	REI (hours) <sup>2</sup>	PHI (days) <sup>3</sup>	bacterial fruit spot	black rot	downy mildew	Phytophthora blight	Plectosporium blight	powdery mildew	The comments below are intended to facilitate product selection. Always read the fungicide label first for additional information on rates, fungicide resistance, safety, etc.		
Agri-Fos®, Phostrol®, Prophyte®	33	phosphorous acid/phosphite	4	0	1		Х	Х			Tank mix with a contact fungicide labeled for downy mildew.		
Aliette®	33	fosetyl-Al	12	1⁄2			Х	Х			Tank mix with a contact fungicide labeled for downy mildew.		
Amistar®, Quadris®	11	azoxystrobin	4	1		Х	L			L	Compare with Quadris Opti®. Alternate all group 11 fungicides.		
Bravo®, Echo®, Equus®	М	chlorothalonil	12	0		Х	Х			L	Contact fungicide effective against a wide range of fungal diseases.		
Cabrio®	11	pyraclostrobin	12	0		Х	L		Х	L	Shares one active ingredient with Pristine <sup>®</sup> .		
copper (many trade names)	М	copper	24	0	Х	L	L			L	Primarily effective against bacterial diseases.		
Curzate®	27	cymoxanil	12	3			Х				Tank mix according to label.		
Flint®	11	trifloxystrobin	12	0			L		Х	L	Alternate all group 11 fungicides.		
Folicur 3.6®	3	tebuconazole	12	7		S				Х	For optimum disease control, use surfactant.		
Maneb <sup>®</sup> , Manex <sup>®</sup>	М	maneb	24	5			Х				Some labels include greenhouse uses.		
Presidio 4SC®	43	fluopicolide	12	2			Х	Х			Must be used in tank mix.		
Previcur Flex®	28	propamocarb	12	2			Х				See label for additional greenhouse uses.		
Pristine®	7 11	boscalid pyraclostrobin	12	0		L	L			Х	Alternate all group 11 fungicides.		
Procure®	3	triflumizole	12	0						Х	Tank mix with other fungicides for additional diseases.		
Quadris Opti®	11 M	azoxystrobin chlorothalonil	12	1			Х			L	Premix. Compare with Amistar®and Quadris®. Alternate all group 11 fungicides.		
Rally®	3	myclobutanil	24	0						Х	Tank mix with other fungicides for additional diseases.		
Ranman®	21	cyazofamid	12	0			Х	Х			Alternate with a fungicide that has a different MOA code.		
Revus®	40	mandipropamid	12	0			L	L			Must be used in tank mix.		
Ridomil Gold Bravo®	4 M	mefenoxam chlorothalonil	48	0		Х	L				Mefenoxam may not be effective against all strains of the downy mildew fungus.		
Tanos®	27 11	cymoxanil famoxadone	12	3			Х	S			Tanos <sup>®</sup> must be tank mixed with a contact fungicide and alternated with a fungicide with a different MOA code.		
Topsin M®	1	thiophanate-methyl	12	0		L				L	Alternate or tank mix with fungicides that have a different MOA code.		

1Symbol key: X=product labeled and effective based on research and experience. L=product labeled but may not be the most effective product available. S=disease suppression only.

<sup>2</sup>REI (re-entry interval) in hours: do not enter or allow workers to enter treated areas during the REI period.

<sup>3</sup>PHI (pre-harvest interval) in days: the minimum time that must pass between the last pesticide application and crop harvest.

Detailed information on disease management and other aspects of vegetable production available in the Midwest Vegetable Production Guide for Commercial Growers 2009 (ID-56)

# **Pumpkin Management Time Line**

Disease	Winter/Fall Off-season	Planting	Early Vine Growth	Bush Stage/Softball-sized Fruit	Fruit Maturity	Harvest
bacterial fruit spot	Rotate crops 3 years and practice fall tillage. May be seedborne. Avoid problem fields.		Scout. Treat with fixed copper sprays if bacterial spot is present.	If disease threatens, apply fixed copper at 7-14-day intervals.	Fixed copper applications may be stopped when fruit set is complete.	Do not save seed from affected fields. Identify fruit problems.
black rot	Rotate crops 3 years and practice fall tillage. May be seedborne. Avoid problem fields.		Begin contact or systemic fungicide applications if disease pressure is high.	Contact/systemic fungicide applications should start here and continue at 7-14 day intervals.	Apply fungicides through early to mid-fruit maturity depending on disease pressure.	Do not save seed from affected fields. Identify fruit problems.
downy mildew	Crop rotation and fall tillage will not affect downy mildew because the fungus will not overwinter in Indiana.			Begin scouting in July. If disease threatens, apply systemic fungicides with contact fungicides and a specialized systemic fungicides only if downy mile	contact fungicides weekly or mix pply at 7-10-day intervals. Apply lew is observed in area.	
Fusarium fruit rot	Crop rotations of at least 4 years. Practice fall tillage. May be seedborne.			Manage foliar diseases for better fruit health. Avoid other fruit diseases, such as bacterial fruit spot or Phytophthora blight.		Identify fruit problems.
Plectosporium blight	Rotate crops 3-4 years and practice fall tillage.			Contact/systemic fungicide applications should start here and continue at 7-14 day intervals.		Identify fruit problems.
Phytophthora blight	Use long crop rotations (4 years) that do not include solanaceous crops. Practice fall tillage. Avoid problem fields and waterlogged areas.	Seed treated with appropriate fungicide may help.		Apply contact or systemic fungicides when diseas appears. Specialized systemic fungicides are avail	Identify fruit problems.	
powdery mildew	Crop rotation and fall tillage are moderately important. Several cultivars have partial resistance.			Begin systemic fungicide applications at 2-3 week disease pressure. Protect vines through Septembe		
virus diseases	Crop rotation and fall tillage have no effect on these diseases.	Earlier planted or maturing cultivars will help avoid severe disease problems.		Control weeds in and around production areas.		Identify fruit problems.

#### Post-Harvest Care

Inspect fruit for signs of developing lesions. Remove field debris from fruit surface with soft brush or rag. If fruit is washed, use 150 ppm solution of sodium hypochlorite (approximately 1/3 oz. household bleach per gallon water), and dry fruit well.

Reference to products in this publication is not intended to be an endorsement to the exclusion of others that may be similar. Persons using such products assume responsibility for their use in accordance with current directions of the manufacturer. Insect, disease, and weed control recommendations in this publication are valid only for 2009. If the registration for any of these suggested chemicals changes during the 2009 growing year, we will inform all area and county Purdue Extension workers. When in doubt about the use of any chemical, check with your Purdue Extension educator or chemical company representative.

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