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# Updates to the 2016 Midwest Fruit Pest Management Guide

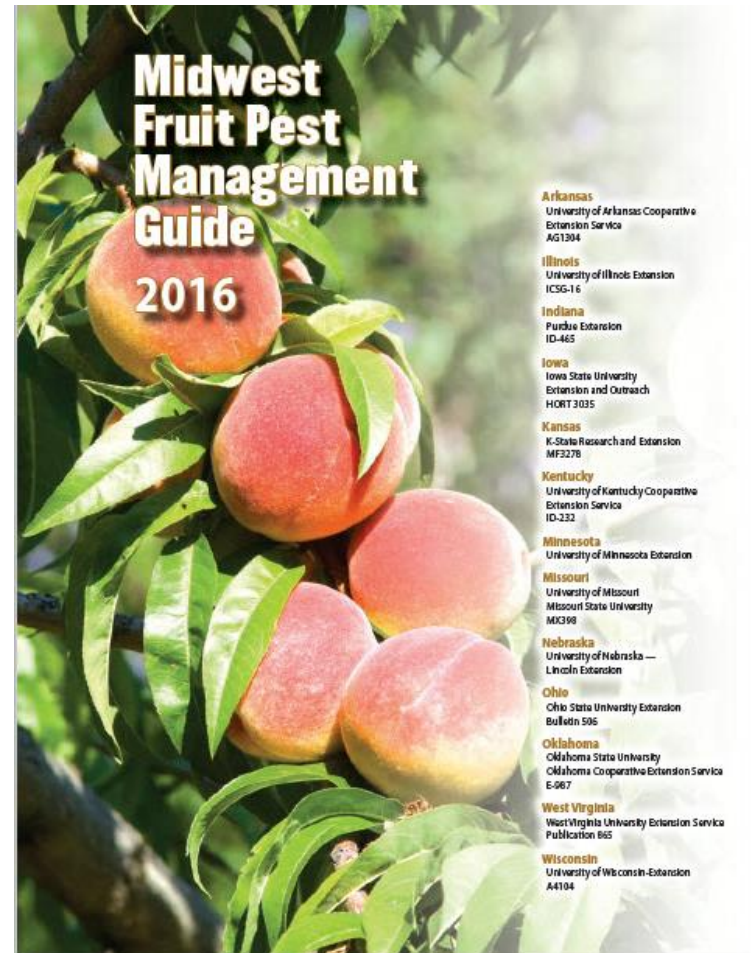
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# Outline

- Introduction to the 2016 Spray Guide
- General comments
- Grapes
- Blueberries
- Brambles
- Strawberries
- Weeds



# Introduction

- Who compiles the Guide? Fruit extension and research specialists from 13 universities
- The Guide is updated annually
- Locate the Guide at:
  - <https://ag.purdue.edu/hla/Hort/Documents/ID-169.pdf>
  - hard copy from local Extension office
- Check the online guide regularly – labels change and the online guide is updated accordingly



# Introduction

- Guide has sections...
  - Tips on using the guide
  - Handling pesticides and spraying
  - Tree fruit spray schedules (apple, pear, cherry, peach, plum)
  - **Grape spray schedule**
  - **Blueberry spray schedule**
  - **Raspberry and blackberry spray schedule**
  - **Strawberry spray schedule**
  - REI and PHI for fungicides
  - REI and PHI for insecticides
  - **Weed control in fruit crops**
  - Record keeping requirements
  - State specific information

## Midwest Fruit Pest Management Guide 2016

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### Foreword

Commercial fruit production has become a highly skilled, technical profession. Concerns about pesticide residues, operator risks, and the environment dictate that all fruit growers exercise extreme caution in the use of all pesticides, and indeed, all chemicals. The Environmental Protection Agency (EPA) has designated a number of fruit pesticides as "restricted use." Growers who plan to use these restricted materials must be certified as private applicators.

Certification requires that applicators understand the following: labels and labeling, safety factors, potential environmental concerns, identification of common pests encountered, pesticides and their use, proper equipment use, application techniques, and applicable state and federal regulations. Training programs are offered to help you in certification. Contact your county extension office for information.

The pest management recommendations in this guide have been formulated to provide you up-to-date information about pesticides and their applicability to your problem. We suggest that you use this information to set up your own spray program. You should keep accurate records of materials used, application dates, areas treated, growth stages, and weather conditions. Sample

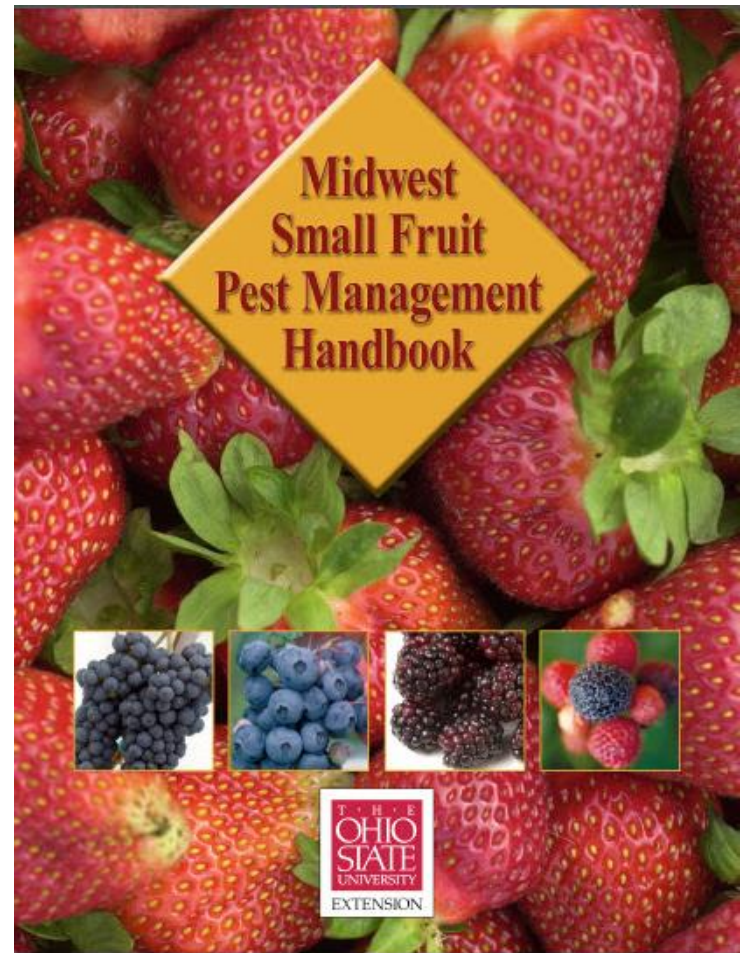
record sheets are on pages 166-167. In case of questions, nothing beats a good set of records. The EPA requires records for Restricted Use Pesticide applications. Some states may require records for general use pesticides (e.g., Kentucky has this requirement).

### Handling Pesticides

1. Know the pesticide toxicity and act accordingly.
2. When mixing pesticides do not breathe the dust, powder, or vapor. Always mix outdoors.
3. Do not use tobacco, eat, or drink when handling or applying pesticides.
4. Stay out of drift from spray or dust.
5. Rinse liquid containers with water at least three times and pour rinsate into spray tank as it is being filled. Punch holes in metal and plastic containers and crush. Dispose of these and all other pesticide containers where there will be no contamination of crops or water supply. Do not re-use pesticide containers.
6. Use an adequate respirator and protective clothing, especially when mixing pesticides. Necessary protective equipment is listed on pesticide labels.

# Midwest Small Fruit Pest Management Handbook

- Companion to the Midwest Small Fruit and Grape Spray Guide
- Available as a free download at:  
<https://ag.purdue.edu/hla/Hort/Documents/Midwest%20Small%20Fruit%20861%201-24-11.pdf>





# Changes in 2016 – General Comments

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- The big news – the small fruit and tree fruit spray guides have been combined into one guide
- Lots of reorganization of material
- Increased emphasis on the importance of FRAC/IRAC code designations and resistance management

# Changes in 2016 – New Fungicide Labels

Trade Name	FRAC	Grape	Blueberry	Bramble	Strawberry
Adamant	11, 3	X			
Fracture	?	X			X
Tanos	11, 27	X		X	
Quash	3		X		
Switch 62.5	9, 12		X		
Tilt	3			X	
Merivon Xemium	11, 7				X
Aftershock	11				X
Evito	11				X

FRAC 11: Strobilurin fungicides (Abound, Cabrio, Pristine, Flint, Sovran, Reason, Quilt Xcel)

FRAC 3: Sterol Inhibiting fungicides (Elite, Rally, Procure, Vintage, Quilt Xcel, etc)

FRAC 1: Benzimidazol fungicides (Topsin M)

FRAC 7: Boscalid fungicides (Fontellis, Endura, Pristine)



# Changes in 2016 – New Insecticide/Miticide Labels

Trade Name	IRAC	Grape	Blueberry	Bramble	Strawberry
Nealta 1.67SC	25	X			X
Sivanto 200SL	4D	X	X		X
Beleaf 50SG	9C				X





# Changes in 2015 – New Herbicide Labels

Trade Name	Grape	Blueberry	Bramble	Strawberry
Callisto		X	X*	
Spur**				X

\*Note: labeled for use on **brambles** and blueberry; preemergence or early post emergence control of annual grasses and broadleaf weeds

\*\*check with state pesticide office for labeling



# Grape

- General
  - New fungicide uses
    - Adamant fungicide added for several diseases
    - Fracture fungicide added for powdery mildew and botrytis
    - Tanos fungicide added for downy mildew
  - New insecticide uses
    - Nealta miticide added for European red mite
    - Sivanto 200SL added for foliar and soil applications to control leafhoppers and grape mealybug
  - Removal of fungicide uses
    - Luna Privilege fungicide removed for several diseases
  - New or revised tables:
    - Preharvest restrictions for fungicides registered for use on grape
    - Effectiveness of insecticides and miticides for grape
    - Generic fungicides



# Grape

- Delayed dormant to bud swell – no changes
- Bud break to pre bloom
  - Adamant 50WG added for a variety of diseases
  - Luna Privilege removed for a variety of diseases
- 4-10 inch shoots
  - Nealta 1.67SC added for European red mite
- Prebloom-bloom
  - Downy mildew control is discussed



# Grape

- Shatter
  - Sivanto 200SL added for foliar and soil applications to control leafhoppers and grape mealybug
  - Capture, Lannate, and Diazinon removed for grape rootworm
  - Nealta 1.67SC added for European red mite
- Shatter to veraison – no changes
- Veraison to harvest – no changes
- Postharvest – no changes



# Blueberry

- General
  - Expanded discussion of spotted wing drosophila and brown marmorated stink bug; check with your own state pesticide regulators and extension specialists for up-to-date information on pesticide labels
  - New fungicide uses
    - Fracture added for several diseases
    - Quash added for several diseases
    - Switch 62.5 added for several diseases
  - Removal of fungicide uses
    - Fontelis removed for several diseases
    - CaptEate 68WDG removed for several diseases
  - New insecticide uses
    - Sivanto 200SL added for blueberry maggot
  - New tables
    - Effectiveness of pesticides for blueberry diseases
    - Efficacy of selected pesticides for the control of blueberry insects (divided by IRAC)
  - Expanded discussion of spotted wing drosophila and brown marmorated stink bug



# Blueberry

- Delayed dormant – no change
- Green tip
  - Quash added for several diseases
  - Switch added for several diseases
  - Abound and Pristine added for several diseases
  - Fontelis removed for several diseases
- Pink bud/25% bloom
  - Quash added for several diseases
  - Fontelis removed for several diseases
  - CaptEvate removed for several diseases
- Full bloom/Petal fall – no change



# Blueberry

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- Petal fall – no change
- First/second cover – no change
- Third and additional covers
  - Sivanto 200SL added for blueberry maggot
- Postharvest – no change



# Raspberry and Blackberry

- General
  - SWD has led to changes in several insecticide labels; check with your own state pesticide regulators and extension specialists for up-to-date information
  - New fungicide uses
    - Tilt added for several diseases
  - New tables
    - Effectiveness of insecticides and miticides for brambles
    - Effectiveness of pesticides for control of bramble diseases





# Raspberry and Blackberry

- Delayed dormant – no change
- Prebloom
  - Tanos added for several diseases
  - Tilt added for several diseases
  - Pristine 38WG removed for several diseases
- First bloom through petal fall – no change
- Post bloom through harvest
  - Kanemite added for mites
- Postharvest – no change



# Strawberry

- General
  - SWD has led to changes in several insecticide labels; check with your own state pesticide regulators and extension specialists for up-to-date information
  - New fungicide uses
    - Merivon Xemium added for botrytis and other diseases
    - Fracture added for botrytis
    - Aftershock added for several diseases
    - Evito added for several diseases
  - Removal of fungicide uses
    - Luna Privilege fungicide removed for several diseases
  - New insecticide/miticide uses
    - Sivanto 200SL added for eastern flower thrips
    - Beleaf added for tarnished plant bug, spittle bug
    - Nealta 1.67SC added for mites



# Strawberry

- Pre bloom
  - Merivon Xemium added for botrytis and other diseases
  - Sivanto 200SL added for eastern flower thrips
  - Beleaf added for tarnished plant bug, spittlebug
  - Nealta added for spider mites
  - Portal 0.4SC added for cyclamen mite
- Early bloom through bloom
  - Fracture added for botrytis
  - Merivon Xemium added for botrytis and other diseases
  - Aftershock added for several diseases
  - Evito added for several diseases
  - Luna Privilege removed for several diseases



# Strawberry

- Post bloom to harvest
  - Beleaf 50SG added for tarnished plant bug, spittlebug
- Harvest
  - Merivon Xemium added for botrytis
  - Fracture added for botrytis
- Postharvest – no changes



# SWD Control - Elderberry

- Pest management – Spotted Wing Drosophila

Class	Trade Name	Active Ingredient	PHI (days)	Days Residual
Pyrethroid (3)	Mustang Max (RU)	zeta-cypermethrin	1	7
	Danitol (RU)	fenpropathrin	3	7
	Brigade (RU)	bifenthrin	3	7
Spinosyn (5)	Delegate (2ee)	spinetoram	1	7
	Entrust (organic)	spinosad	1	3-5
Pyrethrum (3)	Pyganic (organic)	pyrethrum	0	2
Anthranilic diamide (28)	Exirel	cyantraniliprole	3	?



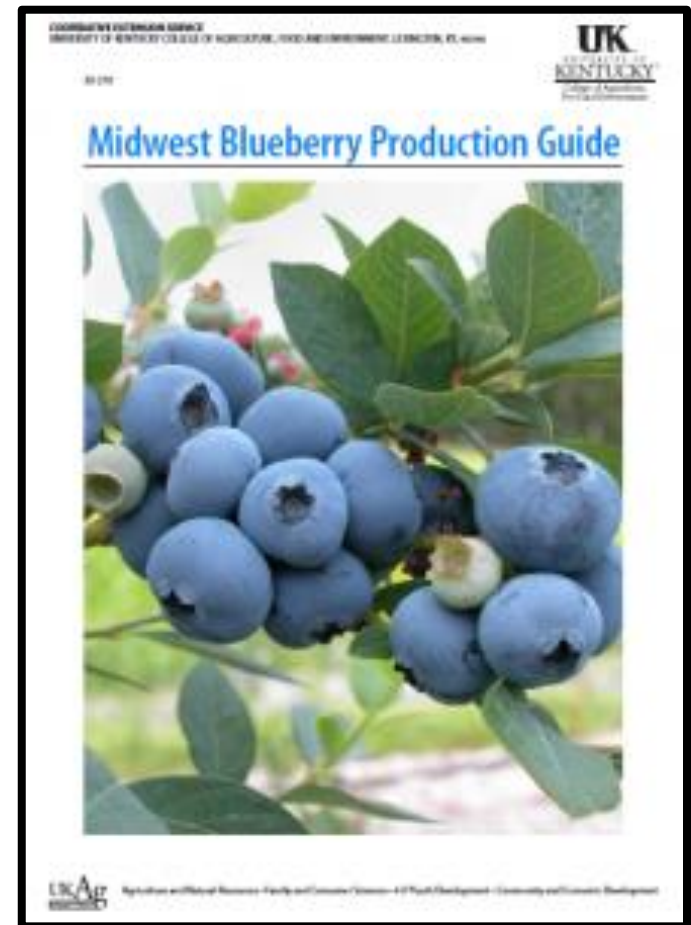
# Small Fruit Weed Control

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- Changes for 2016
  - Preemergent weed control
    - Callisto label expanded to include brambles
  - Postemergent weed control
    - Spur (AKA Stinger) label includes perennial strawberries

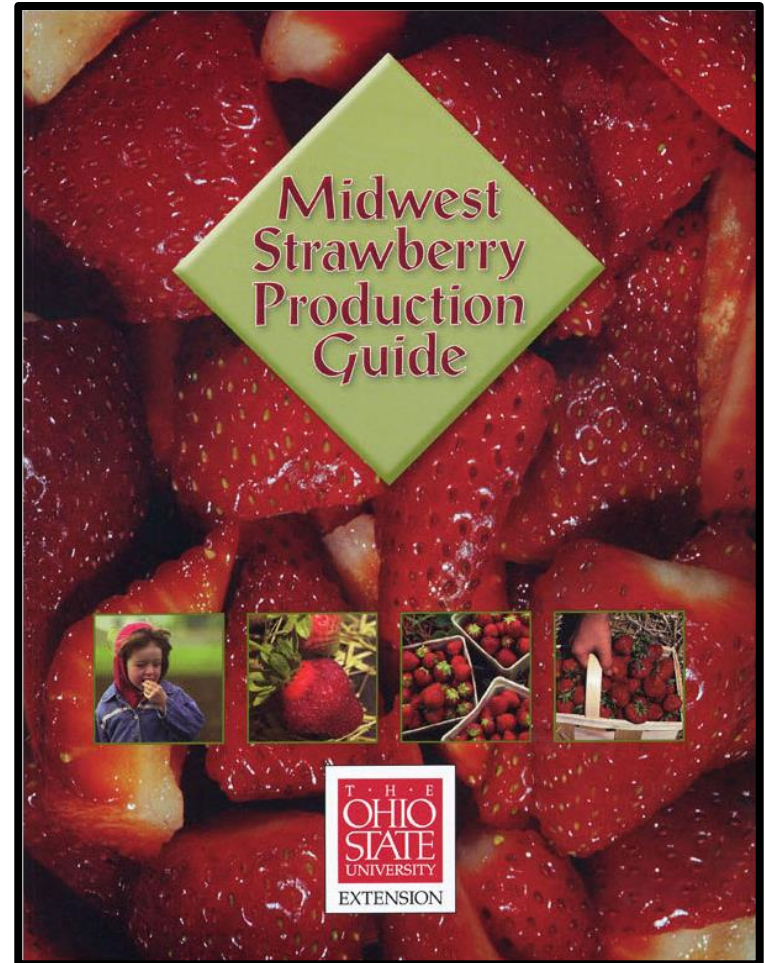
# Midwest Blueberry Production Guide

- Available as a free download at:  
<http://www2.ca.uky.edu/agc/pubs/ID/ID210/ID210.pdf>
- Purchase a hard copy: <http://southcenters.osu.edu/about-us/news/midwest-blueberry-production-guide> This bulletin sells for \$20 a copy.



# Midwest Strawberry Production Guide

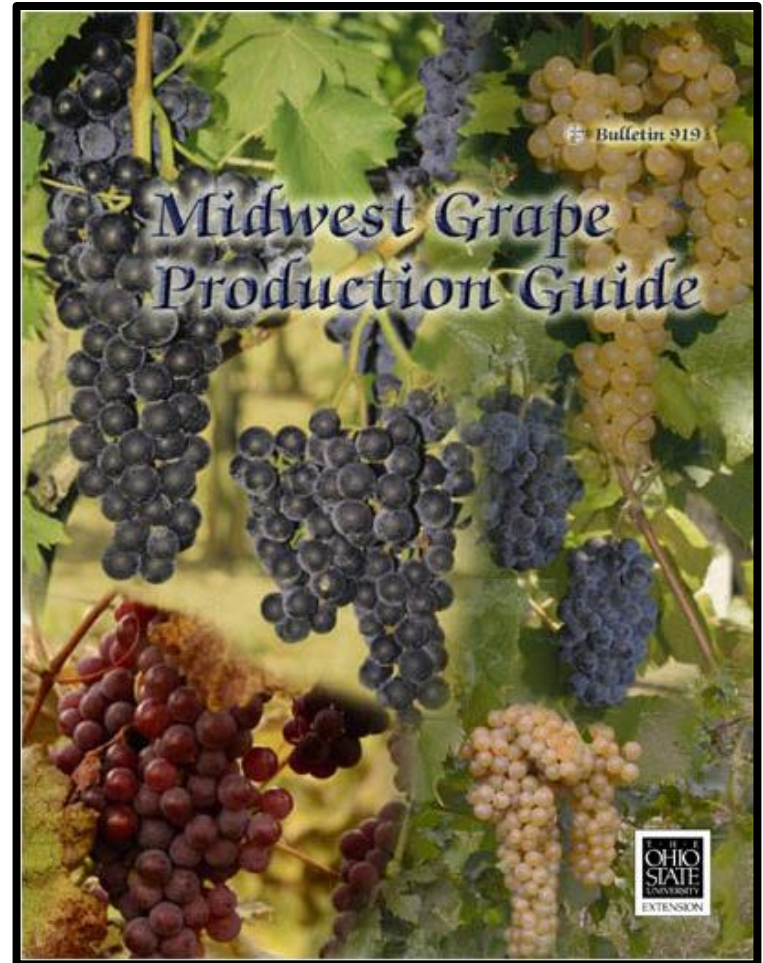
- Available as a free download at:  
<http://www.oardc.ohio-state.edu/fruitpathology/Bulletins/Strawberry%20book%20v2%20S.pdf>





# Midwest Grape Production Guide

- Available as a free download at:  
[http://www.oardc.ohio-state.edu/fruitpathology/Bulletins/mw\\_grape\\_12aug05%20S.pdf](http://www.oardc.ohio-state.edu/fruitpathology/Bulletins/mw_grape_12aug05%20S.pdf)



# Questions or Comments?

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