

# 2020 Pecan Pathology Update

Jason Brock & Tim Brenneman  
UGA Dept. of Plant Pathology



**UGA**  
extension

[extension.uga.edu](http://extension.uga.edu)

1-800-ASK-UGA1

# Spraying non-bearing trees

- Probably no "right" answer
- From a cost, efficacy and safety standpoint, use a phosphite
  - excellent on leaf scab
  - most systemic material to move into the new growth
  - equivalent of 1-2 quarts per 100 gal
  - higher rates might have leaf burn
  - repeated every few weeks as dictated by weather
- Back pack sprayers applied to runoff, use 1 quart rate.
- Use higher rate with air blast sprayers
- Group 3 and Group 11 fungicides are suitable options .

# Logan Moore/Tim Brenneman Trial

Circuit	Southern circuit			Western Circuit			Northern Circuit			Ponder Farm	
Orchard	G1	G2	G3	G4	G5	G6	G7	G8	G9	Ponder	Ponder
Cultivar	Pawnee	Pawnee	Cunard	Desirable	Cunard	Desirable	Cunard	Pawnee	Desirable	Desirable	Wichita
App 1	5/21/2019	5/21/2019	5/21/2019	5/22/2019	5/22/2019	5/22/2019	No app	No app	No app	5/23/2019	5/23/2019
App 2	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/4/2019	6/3/2019	6/3/2019	6/3/2019	6/4/2019	6/4/2019
App 3	6/21/2019	6/21/2019	6/21/2019	6/18/2019	6/18/2019	6/18/2019	6/18/2019	6/18/2019	6/18/2019	6/17/2019	6/17/2019
App 4	7/5/2019	7/5/2019	7/5/2019	7/2/2019	7/2/2019	7/2/2019	7/2/2019	7/2/2019	7/2/2019	7/3/2019	7/3/2019
App 5	7/19/2019	7/19/2019	7/19/2019	7/17/2019	7/17/2019	7/17/2019	7/18/2019	7/18/2019	7/18/2019	7/15/2019	7/15/2019
App 6	8/1/2019	8/1/2019	8/1/2019	7/29/2019	7/29/2019	7/29/2019	7/29/2019	7/29/2019	7/29/2019	7/30/2019	7/30/2019
App 7	8/13/2019	8/13/2019	8/13/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/16/2019	8/16/2019



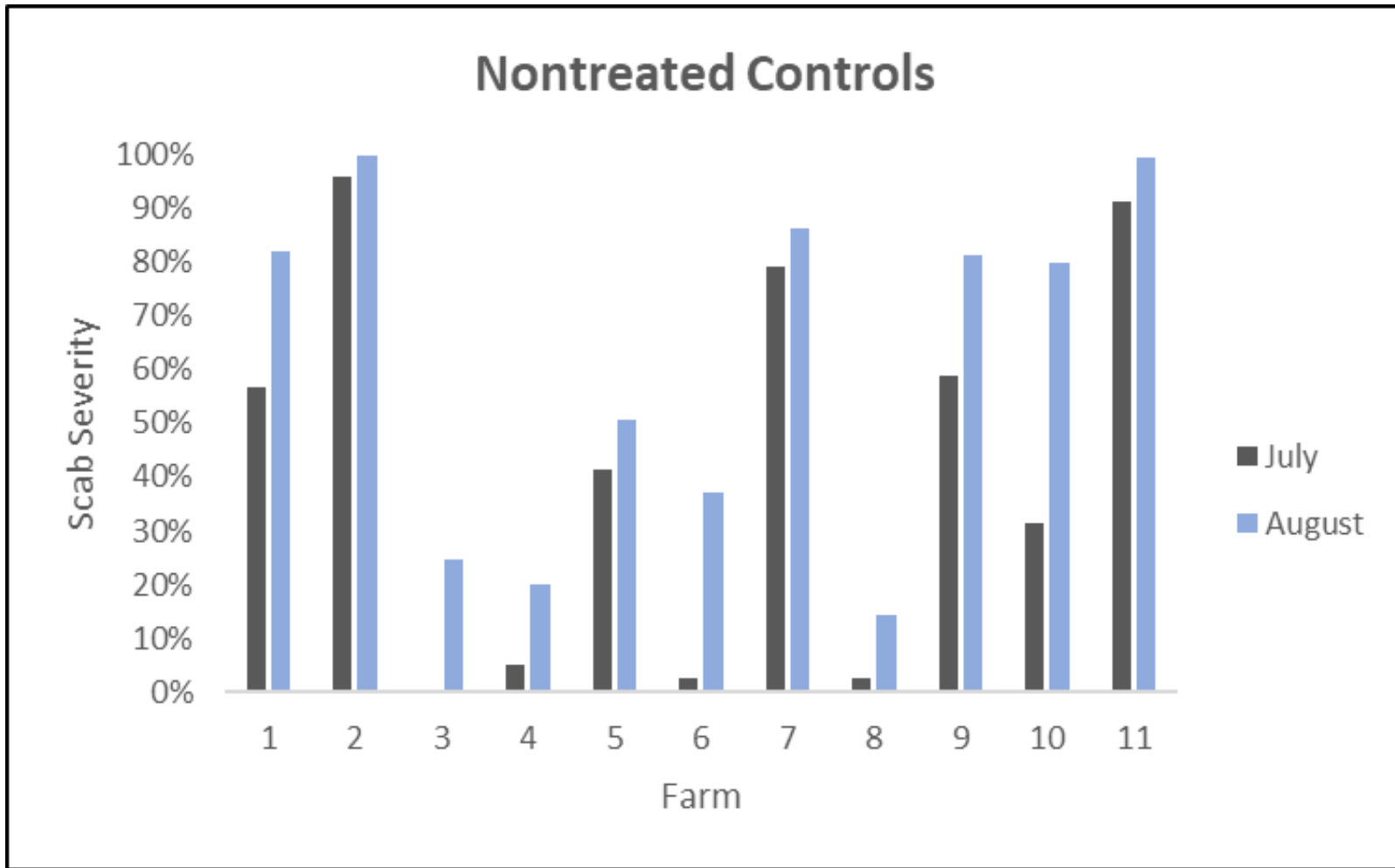
# Treatment List

#	Treatment	FRAC Code	Active Ingredient (AI)	Rate AI/A	Rate Product/A
1	Orius	3	Tebuconazole	0.23 lb	8 fl oz
2	Revysol	3	Mefentrifluconazole	0.13 lb	5 fl oz
3					
4	Quadris Top	3 & 11	Azoxystrobin + Difenoconazole	0.18 lb 0.11 lb	13.7 fl oz
5	Abound	11	Azoxystrobin	0.18 lb	10.9 fl oz
6	Miravis Top	3 & 7	Pydiflumetofen + Difenoconazole	0.07 lb 0.11 lb	13.7 fl oz
7					
8	Revysol + Sulfur	3 & M2	Mefentrifluconazole + Sulfur	0.13 lb 4.8 lb	5 fl oz 6 lb
9	Sulfur	M2	Sulfur	4.8 lb	6 lb
10	Nontreated	n/a	n/a	n/a	n.a

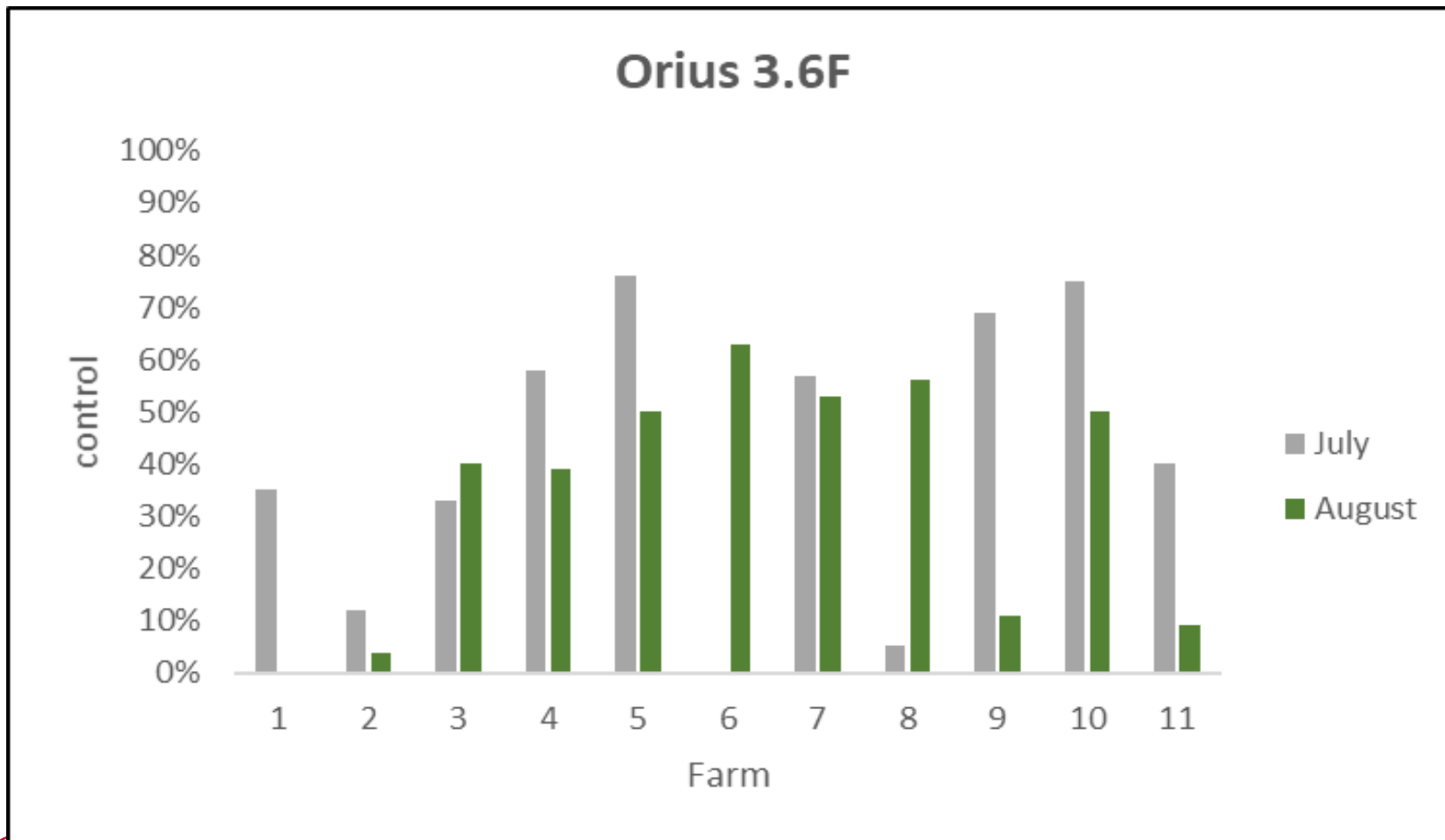
**Pawnee**  
5, 7, 8

**Cunard**  
2, 4, 9

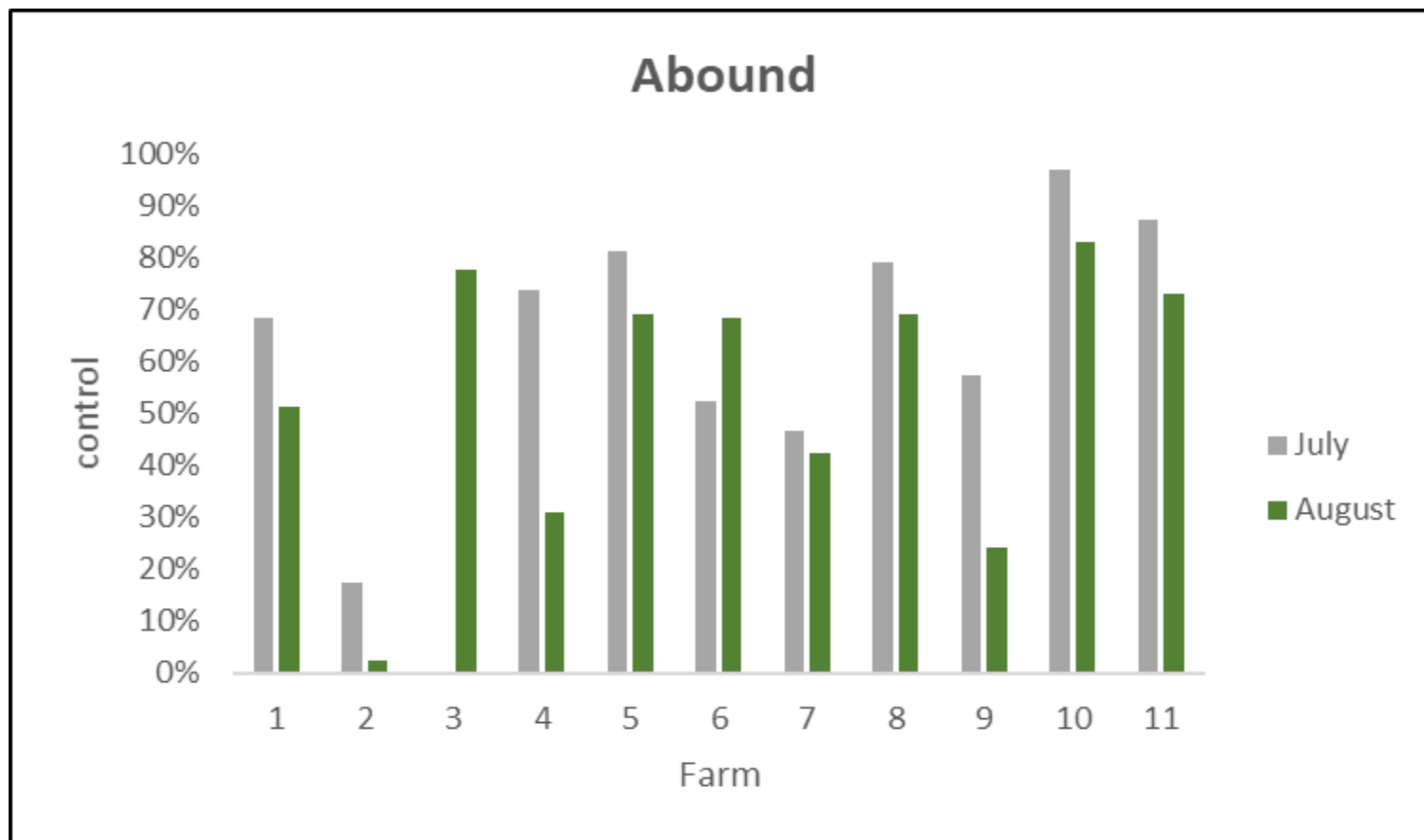
**Desirable**  
1, 3, 6, 10, 11



# Percent control for Orius 3.6F (Tebuconazole) across locations



# Percent control for Abound (Azoxystrobin) across locations



**UGA**  
extension

[extension.uga.edu](http://extension.uga.edu)

1-800-ASK-UGA1

# Sulfur

- Sulfur has improved efficacy of Group 3 (DMI) fungicides in other pathosystems.
- 2019 UGA Fungicide Trials
  - Sulfur (6lbs/A)
  - Revysol (5 fl oz)
  - Revysol (5 fl oz) + sulfur (6 lbs/A)
- Addition of sulfur actually reduced scab control.



# Phosphite (Phosphonate) fungicides



[extension.uga.edu](http://extension.uga.edu)

1-800-ASK-UGA1

# Phosphite FRAC Code

- The FRAC Code for the phosphites has changed from 33 to P7.



# European Union Phosphate Residues Limits

- There may be a few cases of very high rates and frequent apps that would exceed the **500 PPM**, but normal use rates and apps of 5 or less per season should not be an issue.

# Phosphite Tank Mix Compatibility

- tank-mixing Kphite 7LP
  - No known issues with minor elements Boron, Zinc, and Nickel.
  - Can be mixed with foliar calcium.
- Zinc nitrate?
- Cannot be mixed with foliar magnesium.
- avoid lignin based chelates and always use EDTA based chelates for mixing with phosphite fungicides

Keys to successful tank-mixing:

- Start with spray tank half-full of water
- Mix powders by pouring slowly, and allowing ample time to agitate and mix
- Slowly add additional products
- Add surfactant last. 80/20 surfactant. Do not recommend penetrators or stickers.



# Phosphite Use Recommendations

- Consecutive applications
- Stand-alone use
- Rates: as recommended by UGA
  - Pre-pollination: min. of 4 pints (2 quarts)
  - Post-pollination: min of 6 pints (3 quarts)



# Miravis Top

- pydiflumetofen (7) + difenoconazole (3)
- Group 7 fungicides
  - Succinate dehydrogenase inhibitors (SDHIs)
  - Effects mitochondrial electron transport chain
  - Medium to high resistance risk
- Rate: 13.6 fl. oz./A
- Greatest strength is management of nut scab

# Miravis Top

- Use as a protectant.
- Rotate modes of action (away from 3 and 7)
- Apply no more than 2 sequential applications
- No more than 4 applications per year
- Minimum application interval of 14 days
- Pre-harvest interval: after shuck split or within 45 days of harvest

	common name	Trade Names
1	thiophanate-methyl	Topsin; T-methyl
3	fenbuconazole	Enable
3	metconazole	Quash
3	propiconazole	Orbit, Bumper, Propimax, Tilt
3	tebuconazole	Folicur, Monsoon, Orius, Tebuzol, Toledo
3	tetraconazole	Andiamo
3	mefentrifluconazole	Revysol
11	azoxystrobin	Abound, Azaka
11	kresoxim-methyl	Sovran, Narvos
11	pyraclostrobin	Headline
11	picoxystrobin	Approach
30	triphenyltin hydroxide (TPTH)	Super Tin; Agri Tin
33	phosphite	Fosphite, FungiPhite, K-Phite, Phiticide, Phostrol, ProPhyt, Rampart, Reliant, Topaz
U12	dodine	Elast
M	ziram	Ziram
3 + 1	tebuconazole + thiophanate-methyl	Topsin XTR
3 + 7	pydiflumetofen + difenoconazole	Miravis Top
3 + 11	difenoconazole + azoxystrobin	Quadris Top, Amistar Top
3 + 11	flutriafol + azoxystrobin	Topguard
3 + 11	propiconazole + azoxystrobin	Quilt
3 + 11	tebuconazole + trifloxystrobin	Absolute
3 + 11	tebuconazole + azoxystrobin	Custodia, Helmstar
3 + 11	tetraconazole + azoxystrobin	Brixen
3 + 30	tetraconazole + TPTH	Minerva Duo
3 + 33	tebuconazole + phosphite	Viathon



	common name	Trade Names
3	fenbuconazole	Enable
3	metconazole	Quash
3	propiconazole	Orbit, Bumper, Propimax, Tilt
3	tebuconazole	Folicur, Monsoon, Orius, Tebuzol, Toledo
3	tetraconazole	Andiamo
3	mefentrifluconazole	Revysol
11	azoxystrobin	Abound, Azaka
11	kresoxim-methyl	Sovran, Narvos
11	pyraclostrobin	Headline
11	picoxystrobin	Approach
30	triphenyltin hydroxide (TPTH)	Super Tin; Agri Tin
33	phosphite	Fosphite, FungiPhite, K-Phite, Phiticide, Phostrol, ProPhyt, Rampart, Reliant, Topaz
U12	dodine	Elast
3 + 7	pydiflumetofen + difenoconazole	Miravis Top
3 + 11	difenoconazole + azoxystrobin	Quadris Top, Amistar Top
3 + 11	flutriafol + azoxystrobin	Topguard
3 + 11	propiconazole + azoxystrobin	Quilt
3 + 11	tebuconazole + trifloxystrobin	Absolute
3 + 11	tebuconazole + azoxystrobin	Custodia, Helmstar
3 + 11	tetraconazole + azoxystrobin	Brixen
3 + 30	tetraconazole + TPTH	Minerva Duo
3 + 33	tebuconazole + phosphite	Viathon

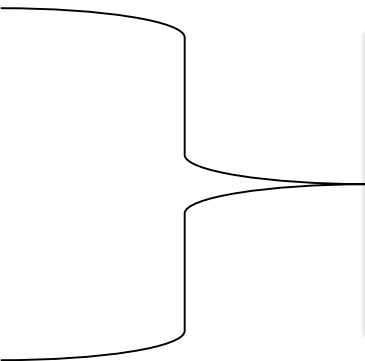
# Pre-pollination Recommendations

- Group 3 + Group 11
- Phosphite

	common name	Trade Names
3	fenbuconazole	Enable
3	metconazole	Quash
3	propiconazole	Orbit, Bumper, Propimax, Tilt
3	tebuconazole	Folicur, Monsoon, Orius, Tebuzol, Toledo
3	tetraconazole	Andiamo
3	mefentrifluconazole	Revysol
11	azoxystrobin	Abound, Azaka
11	kresoxim-methyl	Sovran, Narvos
11	pyraclostrobin	Headline
11	picoxystrobin	Approach
33	phosphite	Fosphite, FungiPhite, K-Phite, Phiticide, Phostrol, ProPhyt, Rampart, Reliant, Topaz
3 + 11	difenoconazole + azoxystrobin	Quadris Top, Amistar Top
3 + 11	flutriafol + azoxystrobin	Topguard
3 + 11	propiconazole + azoxystrobin	Quilt
3 + 11	tebuconazole + trifloxystrobin	Absolute
3 + 11	tebuconazole + azoxystrobin	Custodia, Helmstar
3 + 11	tetraconazole + azoxystrobin	Brixen
3 + 33	tebuconazole + phosphite	Viathon



# Post-pollination Recommendations

- Tin (TPTH)
  - Elast
  - Tin + Elast mix
- 
- Can mix with
- Phosphite
  - Group 3
  - Group 11
- Miravis Top (Group 3 + 7)
  - Group 3 + Group 11
  - Phosphite (conditional use)

	common name	Trade Names
1	thiophanate-methyl	Topsin; T-methyl
3	fenbuconazole	Enable
3	metconazole	Quash
3	propiconazole	Orbit, Bumper, Propimax, Tilt
3	tebuconazole	Folicur, Monsoon, Orius, Tebuzol, Toledo
3	tetraconazole	Andiamo
3	mefentrifluconazole	Revysol
11	azoxystrobin	Abound, Azaka
11	kresoxim-methyl	Sovran, Narvos
11	pyraclostrobin	Headline
11	picoxystrobin	Approach
30	triphenyltin hydroxide (TPTH)	Super Tin; Agri Tin
33	phosphite	Fosphite, FungiPhite, K-Phite, Phiticide, Phostrol, ProPhyt, Rampart, Reliant, Topaz
U12	dodine	Elast
M	ziram	Ziram
3 + 1	tebuconazole + thiophanate-methyl	Topsin XTR
3 + 7	pydiflumetofen + difenoconazole	Miravis Top
3 + 11	difenoconazole + azoxystrobin	Quadris Top, Amistar Top
3 + 11	flutriafol + azoxystrobin	Topguard
3 + 11	propiconazole + azoxystrobin	Quilt
3 + 11	tebuconazole + trifloxystrobin	Absolute
3 + 11	tebuconazole + azoxystrobin	Custodia, Helmstar
3 + 11	tetraconazole + azoxystrobin	Brixen
3 + 30	tetraconazole + TPTH	Minerva Duo
3 + 33	tebuconazole + phosphite	Viathon