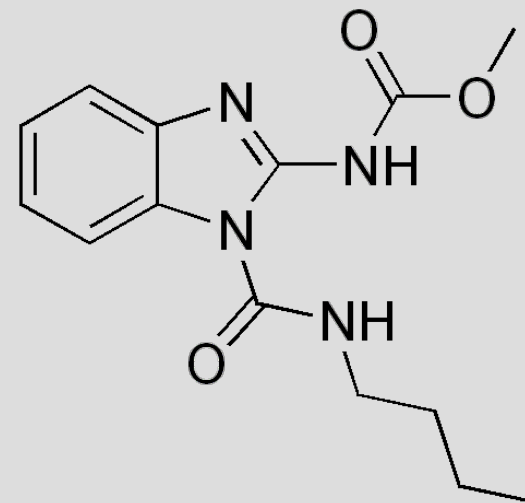


2017 Peach Disease Management Update

David Ritchie, Plant Pathologist
Department of Entomology & Plant Pathology
NC State University, Raleigh

2017 North Carolina Peach and Nectarine Disease and Pest Management Guide



benomyl

FUNGICIDES

Captan, Sulfur, Topsin M

Dicarboximides – osmotic signal transduction (**FRAC Group 2**):

iprodione (**ROVRAL**)

procymidone

vinclozolin (**RONILAN**)

Sterole-biosynthesis inhibitors (**FRAC Group 3**):

demethylation inhibitors (DMI fungicides):

piperazines – triforine (**FUNGINEX**)

triazoles: propiconazole (**ORBIT**)

fenbuconazole (**INDAR**)

tebuconazole (**ELITE**)

metconazole (**QUASH**)

Strobilurines: **QoI**-fungicides (**Quinone outside Inhibitors, FRAC Group 11**):

azoxystrobin (**ABOUND**)

trifloxystrobin (**FLINT, GEM**)

Groups of Fungicides for Disease Control on Peaches

January 2017

Below are the fungicide **GROUP**, common name (CN), and for some an example of a brand name for many fungicides registered for use on peaches:

GROUP 1- thiophanates

CN= thiophanate, thiophanate-methyl
(Topsin M®, T-Methyl®)

GROUP 2- dicarboximides

CN= iprodione
(Rovral 4 Flowable Fungicide®)

GROUP 3- DMI triazoles

CN= difenoconazole
= fenbuconazole (Indar®)
= flutriafol
= metconazole (Quash®)
= myclobutanil (Rally®)
= propiconazole (Orbit®)

GROUP 7- succinate dehydrogenase inhibitors (SDHI)

CN= fluopyram
= fluxapyroxad
= penthioprad (Fontelis®)
= boscalid

GROUP 9- aniline-pyrimides

CN= cyprodinil (Vangard®)
= pyrimethanil (Scala®)

GROUP 11- quinone outside inhibitors (QoI)

CN= azoxystrobin (Abound®)
= pyraclostrobin
= trifloxystrobin (Gem®)

GROUP 12- phenylpyrroles

CN= fludioxonil (Scholar®)

GROUP M- Multi-site contact activity

M1 = copper formulations
M2 = sulphur formulations
M3 = dithio-carbamates (ziram)
M4 = phthalimides (captan)
M5 = chloronitriles (chlorothalonil formulations; Bravo®)

Pre-Mixtures

CN= pyraclostrobin [11] + boscalid [7] **PRISTINE®**
= pyraclostrobin [11] + fluxapyroxad [7] **MERIVON®**
= trifloxystrobin [11] + fluopyram [7] **LUNA® SENSATION**
= azoxystrobin [11] + flutriafol [3] **TOPGUARD®EQ**
= azoxystrobin [11] + difenoconazole [3] **QUADRIS TOP®**
= cyprodinil [9] + difenoconazole [3] **INSPIRE SUPER®**

The mention of fungicides here is for educational purposes and as a convenience to the reader. The mention or omission of a brand name does not imply endorsement nor discrimination against similar products not mentioned

Example of Fungicide Group Numbers

BASF
We create chemistry

Group 7 11 Fungicide

SPECIMEN

Pristine[®]
Fungicide

For use in disease control and plant health in the following crops: alfalfa; Belgium endive; berries; bulb vegetables; carrot; celery; citrus fruit; cucurbit vegetables; globe artichoke; grape; hops; pome fruit; radicchio; stone fruit; strawberry; and tree nut

Active Ingredients:
pyraclostrobin*: (carbamic acid, [2-[[[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxy]methyl]phenyl]methoxy-, methyl ester) 12.8%
boscalid**: 3-pyridinecarboxamide, 2-chloro-N-(4'-chloro(1,1'-biphenyl)-2-yl)- ... 25.2%
Other Ingredients: 62.0%
Total: 100.0%

* 0.128 oz (0.008 lb) of pyraclostrobin in 1 oz of product
** 0.252 oz (0.0158 lb) of boscalid in 1 oz of product

EPA Reg No. 7969-199 EPA Est. No.

KEEP OUT OF REACH OF CHILDREN
CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See inside for complete **First Aid, Precautionary Statements, Directions For Use, Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night, 1-800-832-HELP (4357).

Net Contents:

BASF Corporation
26 Davis Drive, Research Triangle Park, NC 27709

GROUP 3 9 FUNGICIDES PULL HERE TO OPEN ►

Inspire Super[®]

syngenta[®]

Fungicide

Active Ingredients:
Difenoconazole* 8.4%
Cyprodinil** 24.1%
Other Ingredients: 67.5%
Total: 100.0%

*CAS No. 119446-68-3
**CAS No. 121552-61-2

Contains 0.73 lb of difenoconazole active ingredient and 2.09 lb of cyprodinil active ingredient per gallon.

KEEP OUT OF REACH OF CHILDREN.
CAUTION

See additional precautionary statements and directions for use inside booklet.

EPA Reg. 100-1317
EPA Est. 086555-MO-001
SCP 1317A-L1G 0515
4052903

1 gallon
Net Contents

TM

Where is the Group Number?



Orbit[®]
Fungicide
 For control of indicated diseases in tree nuts, nonbearing citrus, stone fruits, and berries

Active Ingredient:
 Propiconazole* 41.8%
 Other Ingredients** : 58.2%
 Total: 100.0%

Contains 3.6 lbs. propiconazole a.i. per gallon
 *CAS No. 60207-90-1 **Contains petroleum distillates

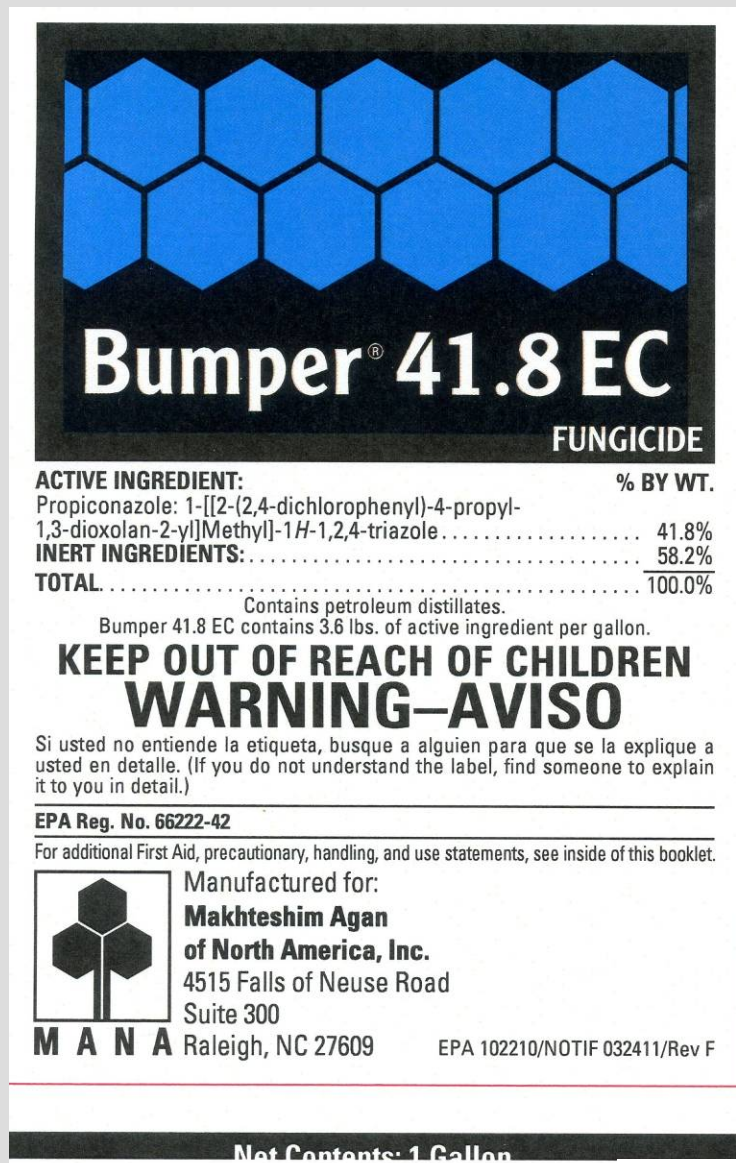
**KEEP OUT OF REACH OF CHILDREN.
 WARNING/AVISO**
Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)
 See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-702 EPA Est. 39578-TX-1
 Product of Switzerland
 Formulated in the USA
SCP 702A-L2G 0507

1 quart
 Net Contents

syngenta[®]

GROUP 3 FUNGICIDE




Bumper[®] 41.8 EC
FUNGICIDE

ACTIVE INGREDIENT: % BY WT.
 Propiconazole: 1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]Methyl]-1H-1,2,4-triazole 41.8%
INERT INGREDIENTS: 58.2%
TOTAL: 100.0%

Contains petroleum distillates.
 Bumper 41.8 EC contains 3.6 lbs. of active ingredient per gallon.

**KEEP OUT OF REACH OF CHILDREN
 WARNING-AVISO**
Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

EPA Reg. No. 66222-42
 For additional First Aid, precautionary, handling, and use statements, see inside of this booklet.


Manufactured for:
Makhteshim Agan
of North America, Inc.
 4515 Falls of Neuse Road
 Suite 300
 Raleigh, NC 27609

EPA 102210/NOTIF 032411/Rev F

Net Contents: 1 Gallon

Look for the "Common Name"



GROUP 3 FUNGICIDE



Orbit[®]

Fungicide

For control of indicated diseases in tree nuts, nonbearing citrus, stone fruits, and berries

Active Ingredient: Propiconazole*	41.8%
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Total:	100.0%

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**KEEP OUT OF REACH OF CHILDREN.
WARNING/AVISO**

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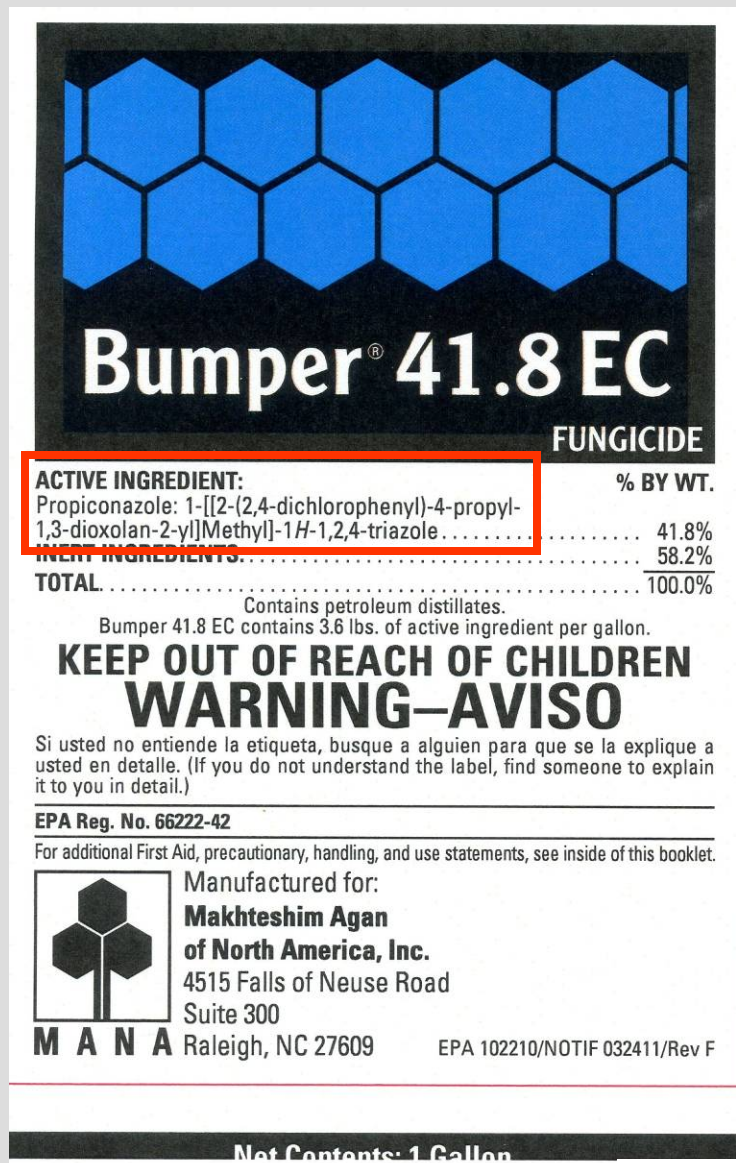
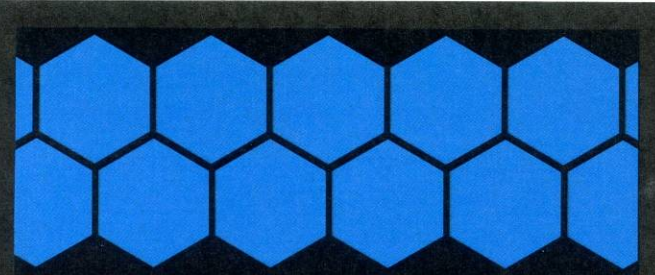
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EPA Reg. No. 100-702 EPA Est. 39578-TX-1
 Product of Switzerland
 Formulated in the USA
SCP 702A-L2G 0507

1 quart
Net Contents



Where is the Group Number?

Bumper[®] 41.8 EC

FUNGICIDE

ACTIVE INGREDIENT: Propiconazole: 1-[[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]Methyl]-1H-1,2,4-triazole	% BY WT. 41.8%
INERT INGREDIENTS:	58.2%
TOTAL:	100.0%


Contains petroleum distillates.
 Bumper 41.8 EC contains 3.6 lbs. of active ingredient per gallon.

**KEEP OUT OF REACH OF CHILDREN
WARNING-AVISO**

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Manufactured for:
**Makhteshim Agan
 of North America, Inc.**
 4515 Falls of Neuse Road
 Suite 300
 Raleigh, NC 27609

EPA 102210/NOTIF 032411/Rev F

Net Contents: 1 Gallon

Diseases



Dormancy



Fungal Disease "Peach Leaf Curl"



Bacterial Spot



Pink Bud to Early Bloom



Fungal Disease “Blossom Blight”



Petals off, Shuck split, Shucks off



Petals off fruit in shuck



Shuck-split



Shucks-off

Fungal Disease “Peach Scab”



Bacterial Disease “Bacterial spot”

15 March



23 March



21 April



5 August



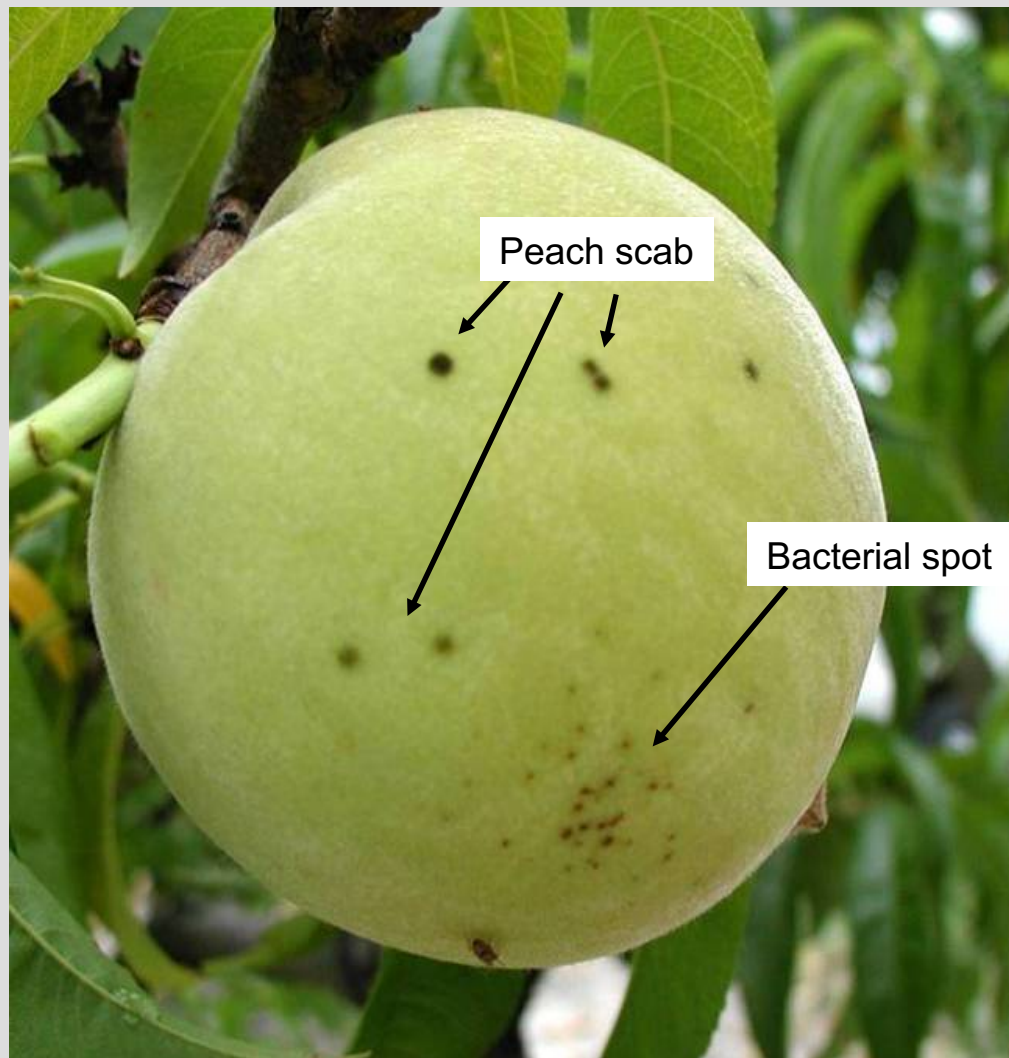
25 July



12 May



Peach Scab vs Bacterial Spot



Peach scab not visible until about 1st of June



Water-soaked lesions on young fruit

Excellent Conditions for Blossom Blight & Bacterial Spot Infection



Injury from Copper



Pit-Hardening – about 2nd Week in May



Fruit Starting to Change Color



Fungal Disease “Brown Rot”



Two Disease Problems Remaining Unsolved (my opinion)

A “wicked problem” is a problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize. The use of the term "wicked" here has come to denote resistance to resolution, rather than evil. Moreover, because of complex interdependencies, the effort to solve one aspect of a wicked problem may reveal or create other problems. (Wikipedia)

“Wicked Problems”

Bacterial Canker

Pseudomonas syringae pv. *syringae*



Fungal Gummosis

Botryosphaeria spp.





**Hungary for Productive and
Profitable 2017 Peach Growing Year!**

