

## Brown Rot Fungicides for Stone Fruits Registered in New York in 2006

**The overview below summarizes the fungicides registered in New York for control of brown rot on stone fruits. The summary is designed to serve as a reference guide. It cannot be used as a substitute for specific use and safety instructions given in the product labels.**

**Caption Notes:**

- <sup>1</sup> The numbers in parentheses describe **resistance codes** assigned by FRAC, the international Fungicide Resistance Action Committee (<http://www.frac/info>). These resistance codes are currently phased in to become an integral part of fungicide labels in the US. They are intended to facilitate the management of fungicide resistance. All fungicides assigned a **number** code will have a moderate to high risk of resistance development. All fungicides with the **same** number will be **cross-resistant** to each other. Therefore, alternations or rotations **among** different fungicides are only allowed if they have a **different** resistance code number. Mixtures of fungicides with the **same code number** are not allowed either. All fungicides assigned a resistance code starting with a **letter**, for example with 'M' (= multi-site), have a very low risk of developing resistance. Their mixtures are allowed, and their numbers of allowed applications per season are **not** related to resistance management.
- <sup>2</sup> Letters in parentheses are a key to brown rot control ratings: - unknown; **s** = slight; **f** = fair; **g** = good; **e** = excellent. The ratings were derived from results at Cornell University trials and orchard trials conducted at other Universities. The performance ratings reflect performances at the time respective fungicide classes were introduced. They do **not** reflect their performances after **resistant** strains of the brown rot fungus were selected.
- <sup>3</sup> The number of maximum sprays allowed per season (= crop cycle) may depend on the rates applied. The margins given below refer to the lowest and highest recommended label rates.
- <sup>4</sup> An increasing number of current fungicide labels contain anti-resistance use restrictions. Although some of these use restrictions may or may not delay the speed of resistance development or facilitate the management of resistance once it is established, they constitute a legally binding part of fungicide labels. Conversely, if restrictions are **not** part of the label, cases of resistance might already have become a widespread problem.

Product <sup>1</sup>	Active ingredient	Blossom blight <sup>2</sup>	Fruit rot <sup>2</sup>	Maximum sprays per season <sup>3</sup>	Anti-resistance restrictions <sup>4</sup>
Indar 75WSP (3)	75% Fenbuconazole	2 oz/A (E)	same (E)	8 0d PHI; 12h REI	None <sup>a</sup>
Orbit (3)	41.8% Propiconazole	4 fl oz/A (E) <b>See warning for 'Stanley' plums</b>	same (G)	3 to petal fall 2 for fruit rot 0d PHI; 24h REI	None <sup>a</sup>
Elite 45WP (3)	45% Tebuconazole	4 - 8 oz/A (E) <b>not labeled for plums/prunes</b>	same (G)	6-12 0d PHI; 12h REI	None <sup>a</sup>
Nova 40W (3)	40% Myclobutanil	2.5 - 6 oz/A (F)	6 oz/A (S)	8-19 0d PHI; 24h REI	None <sup>a</sup>
Rovral 4F (2)	41.6% Iprodione	1-2 pints/A (E)	<b>no</b>	2	None <sup>a</sup>
Iprodione 4L (2)	41.6% Iprodione	1-2 pints/A (E)	<b>no</b>	2	None <sup>a</sup>
Iprodione 50WP (2)	50% Iprodione	1-2 lbs/A (E) to petal fall	<b>no</b>	2 24h REI	None <sup>a</sup>

**Footnotes:**

<sup>a</sup> A first case of resistance to the group 3 (DMI) fungicides in New York has been documented recently. The status of resistance to the active ingredient iprodione (group 2) is currently unknown for New York.



**(Overview continued)**

Product <sup>1</sup>	Active ingredient	Blossom blight <sup>2</sup>	Fruit rot <sup>2</sup>	Maximum sprays per season <sup>3</sup>	Anti-resistance restrictions <sup>4</sup>
Elevate 50WDG (17)	50% Fenhexamide	1.5 lbs/A	(g) same (f)	4 0d PHI; 12h REI	Not more than two applications in sequence
Captivate 68WDG (17) + (M4)	14.3% Fenhexamide + 53.6% Captan	3.75 lbs/A <b>only</b> labeled for	(g) same (f) <b>cherries</b>	5 0d PHI; 24h REI	Not more than two applications in sequence
Captan 80WDG	78.2% Captan	1.9-5 lbs/A	(g) same (f)	8-16 <sup>d</sup>	Group M4 <sup>e</sup>
Captan 80W	78.2% Captan	1.9-5 lbs/A	(g) same (f)	8-16 <sup>d</sup>	Group M4 <sup>e</sup>
Captan 50WP	48.9% Captan	4-8 lbs/A	(g) same (f)	8-16 <sup>d</sup>	Group M4 <sup>e</sup>
Captan 4L	37.7% Captan	0.75-4qts/A	(g) same (f)	6-42 <sup>d</sup>	Group M4 <sup>e</sup>
Captan 4L	37.7% Captan	0.75-4qts/A	(g) same (f)	6-42 <sup>d</sup> 0d PHI; 24h REI <sup>f</sup>	Group M4 <sup>e</sup>
Echo 720	54% Chlorothalonil	3.1-4.1 pints/A (-)	<b>no</b>	6-9	Group M5 <sup>e</sup>
Echo 90DF	90% Chlorothalonil	2.15-3.5 lbs/A (-)	<b>no</b>	4-6 12h REI	Group M5 <sup>e</sup>
Bravo Weather Stik	54% Chlorothalonil	3.1-4.1 pints/A (-)	<b>no</b>	3-4	Group M5 <sup>e</sup>
Bravo Ultrex	82.5% Chlorothalonil	Brown rot not part of label <sup>g</sup>			Group M5 <sup>e</sup>
Ziram 76DF	76% Ziram	4.5-8 lbs/A	(f) same (s) <b>not</b> labeled for	5-16 <sup>h</sup> 14-30d PHI <sup>h</sup> ; 24h REI	Group M3 <sup>e</sup>
Thiram Granuflo	75% Thiram	3.9-5.1 lbs/A	(s) same (s) <b>only</b> labeled for	not specified	Group M3 <sup>e</sup>

**Footnotes:**

- <sup>d</sup> The recommended rates of Captan fungicides and the maximum number of sprays allowed per season are different for different stone fruits.
- <sup>e</sup> All fungicides with a resistance code starting with **M** (= multi-site inhibitors) have a nonspecific mode of action. Their risks of resistance development are very low, and anti-resistance management is not required. However, the nonspecific mode of action demands a strictly protective nature of these group **M** fungicides. They have no post infection ('kick-back') activities.
- <sup>f</sup> With the exception of Captan 4L, all Captan products now have a 24h REI. The REI for Captan 4L remains at 4 days.
- <sup>g</sup> The 'Bravo' products of chlorothalonil were not labeled for brown rot control, although they can be used for other stone fruit diseases at timings appropriate for brown rot control. According to information received from a representative of the 'Bravo' manufacturer, the brown rot use has been re-entered into the national 'Bravo' label as of September 27, 2005.
- <sup>h</sup> The recommended rates of Ziram and the maximum number of sprays allowed per season are different for different stone fruits. The same applies for PHIs.