

## Mobile Fungicides for Managing Powdery Mildew, Downy Mildew, and Phytophthora Blight in Cucurbits

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| Fungicide                    | FRAC Code | Diseases  | Recommended Rate/A (labeled) | REI  | PHI  | Seasonal Limits         | Approx.\$/ A/spray |
|------------------------------|-----------|---|------------------------------|------|------|-------------------------|--------------------|
| Vivando                      | U6        | Powdery mildew  | 15 fl oz                     | 12 h | 0 d  | 3 sprays                | \$33.15            |
| Torino <sup>a</sup>          | U8        | Powdery mildew  | 3.4 oz                       | 4 h  | 0 d  | 2 sprays                | \$24.00            |
| Luna Experience <sup>*</sup> | 7 + 3     | Powdery mildew  | 10-17 fl oz (6-17)           | 12 h | 0 d  | 34 fl oz                |                    |
| Quintec <sup>b,c</sup>       | 13        | Powdery mildew  | 6 fl oz (4-6)                | 12 h | 3 d  | 24 fl oz                | \$23.60            |
| Proline <sup>c</sup>         | 3         | Powdery mildew  | 5.7 fl oz                    | 12 h | 7 d  | 2 sprays                |                    |
| Procure <sup>c</sup>         | 3         | Powdery mildew  | 8 fl oz (4-8)                | 12 h | 0 d  | 40 fl oz                | \$36.84            |
| Endura <sup>c</sup>          | 7         | Powdery mildew  | 6.5 oz                       | 12 h | 0 d  | 4 sprays                |                    |
| Ranman <sup>a,d</sup>        | 21        | Blight, Downy mildew                                      | 2.75 fl oz (2.1-2.75)        | 12 h | 0 d  | 6 sprays                | \$25.24            |
| Omega <sup>e</sup>           | 29        | Blight, Downy mildew                                      | 0.75 – 1.5 pt                | 12 h | 7/30 | 4-7 sprays              |                    |
| Zampro <sup>*</sup>          | 40 + 45   | Blight, Downy mildew                                      | 14 fl oz                     | 12 h | 0 d  | 3 sprays                |                    |
| Gavel                        | 22 + M    | Blight, Downy mildew                                      | 1.5 – 2 lb                   | 48 h | 5 d  | 8 sprays                |                    |
| Forum                        | 40        | Blight, Downy mildew                                      | 6 fl oz                      | 12 h | 0 d  | 5 sprays                | \$17.86            |
| Revus <sup>a,c</sup>         | 40        | Blight, Downy mildew<br>(low efficacy DM cucumber)        | 8 fl oz                      | 12 h | 0 d  | 4 sprays<br>(32 fl oz)  | \$30.31            |
| K-Phite, etc. <sup>f</sup>   | 33        | Blight, Downy mildew                                      | 2.5 – 5 pt                   | 4 h  | 0 d  | 7 sprays                | \$20               |
| Tanos <sup>h</sup>           | 27 + 11   | Blight, Downy mildew                                      | 8 oz                         | 12 h | 3 d  | 4 sprays                | \$25.02            |
| Presidio <sup>g</sup>        | 43        | Blight, (Not recommended<br>now for DM due to resistance) | 4 fl oz (3 – 4)              | 12 h | 2 d  | 2 sprays<br>(new label) | \$44.94            |
| Zing!                        | 22 + M    | Downy mildew  | 36 fl oz                     | 12 h | 0 d  | 8 sprays                | \$17.72            |
| Curzate <sup>h</sup>         | 27        | Downy mildew  | 3.2 oz                       | 12 h | 3 d  | 9 sprays                | \$13.26            |
| Previcur Flex <sup>c</sup>   | 28        | Downy mildew <sup>c</sup>                                 | 1.2 pt                       | 12 h | 2 d  | 6 pints                 | \$18.32            |

\* Luna Experience and Zampro are NOT permitted used on Long Island.

<sup>a</sup> Organosilicone and/or non-ionic surfactant required (Revus) or recommended.

<sup>b</sup> Quintec is labeled for use on non-edible-peel cucurbits (melon, pumpkin, winter squash, gourd). 10-14 day spray interval.

<sup>c</sup> Limited use recommended because resistance could affect efficacy especially when applied often. No more than one application of Endura and Previcur Flex recommended. Pristine not recommended now that Endura labeled on cucurbits.

<sup>d</sup> Rate range applies for downy mildew; high rate for Phytophthora blight.

<sup>e</sup> PHI is 30 days for cucumbers and melons; 7 days for other crops.

<sup>f</sup> Other phosphorous acid fungicides include ProPhyt and Fosphite. Rate and seasonal limits vary a little among products. Recommended tank mixed with other fungicides. Note that there are also phosphate fertilizers, which are not fungicides.

<sup>g</sup> New Presidio label has only 2, not sequential applications. Plant-back restriction for most non-labeled crops is 18-month.

<sup>h</sup> Short residual; apply another fungicide within 5 days.

Tank-mix each of these fungicides with a protectant, with the exception of Zing! or Gavel, which are formulated with chlorothalonil or mancozeb. Need to tank-mix is specified in use directions on many labels.

Sulfur is a very effective, inexpensive product for powdery mildew, no efficacy for other diseases.

Oils (several botanical and mineral oils available) are also a good choice for powdery mildew only.

Chlorothalonil and copper have broad-spectrum activity. Copper also effective for bacterial diseases.

Mancozeb is recommended when only downy mildew is occurring.

Apply fungicides for a particular disease in alternation to manage resistance (in the use directions on many labels; typically 1 or 2 consecutive spray maximum) and to ensure effective control if resistance develops.

QoI\* and Ridomil fungicides are not recommended due to resistance. (\*Amistar, Cabrio, Quadris, Flint).