

Crops(s) **Cucurbit**

Disease(s) **Powdery mildew**

Resistance management strategy for:

Group 3	Demethylation inhibitors (DMI);
Group 7	Succinate dehydrogenase inhibitors (SDHI);
Group 7+3	SDHI + DMI
Group 8	Hydroxy-(2-amino-) pyrimidines;
Group 11	Quinone outside inhibitors (QoI);
Group 11+7	QoI + SDHI;
Group 13	Aza-naphthalenes;
Group 21	Quinone inside inhibitors (QiI); ;
Group U6	Phenyl-acetamide; and
Group 50	Actin disruptors (aryl-phenyl-ketones).

Guidelines:

1. Start disease control early. **Do not** wait for powdery mildew to appear before spraying but start as soon as possible after crop emergence.
2. Use protectant sprays in early crop growth. Apply protectant sprays up to the fruit set stage of the crop if the disease normally occurs during this period. If this schedule is interrupted (e.g. by rain) use a tank mix of protectant plus systemic before recommencing the protectant program.
3. After fruit set, use systemic fungicides in one or more of the following ways:
 - a. Tank mix systemic fungicides with a protectant fungicide **and** use fungicides from at least two different mode of action groups per crop.
 - b. Alternate systemic fungicides with a protectant fungicide **and** use fungicides from at least two different mode of action groups per crop.
 - c. Alternate systemic fungicides from at least three different activity groups per crop.
4. Apply **Group 7, 11** and **21** fungicides preventatively (as protectants).
5. Use a maximum of one **Group 11** or **Group 21** containing spray out of every three fungicide applications.

Please note:

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6. **Do not** use consecutive applications of **Group 11** or **Group U6** fungicides.
7. **Do not** apply more than two **Group 11** (including **11+7**) or **Group U6** products per crop.
8. **Do not** apply more than three **Group 21** containing products per crop, with up to two consecutive applications. **Do not** apply more than five **Group 21** products per calendar year in case of multiple cropping cycles. Continue alternation of fungicides between successive crops.
9. SDHI guideline – use SDHI fungicides as per label instructions and as protectants only.

Total number of spray applications per crop	1	2	3	4	5	6	7	8	9	10	11	12	>12
Maximum recommended alone SDHI fungicide sprays (apply in strict alternation)	1	1	1	1	2	2	2	3	3	3	3	4	*
Max. recommended SDHI fungicide sprays in mixture (apply a mac. of 2 consecutive applications)	1	1	1	2	2	3	3	3	3	3	4	4	*

* When more than 12 fungicide applications are made, observe the following guidelines:

10. When using an SDHI fungicide alone, the number of applications should be no more than 1/3 (one in every three sprays) of the total number of fungicide applications per season.
11. If used alone, apply SDHI fungicides in strict alternation with fungicides from a different cross-resistance group.
12. For programs in which tank mixes or pre-mixes of SDHI fungicides are utilized, the number of SDHI-containing applications should be no more than 1/2 (50%) of the total number of fungicide application per season.
13. If used in mixture, apply SDHI fungicides in a maximum of 2 consecutive applications.
14. In programs where SDHIs are made with both alone and in mixtures, the number of SDHI containing applications should be no more than ½ (50%) of the total no. of fungicides applied per season.

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