

# GROWING BASIL

WITH CONFIDENCE

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 **Ornamentals**

**syngenta**<sup>®</sup>

Many ornamental operations are expanding to include vegetable plants and herbs to help diversify their product offerings. Basil is a popular favorite among growers and consumers as it is well-suited for patio containers or garden transplants.

Sweet basil, *Ocimum basilicum*, is one of the most popular herbs grown in the greenhouse because of its small size (12-18 inches). Basil can be grown from seed or tip cuttings. Its short production schedule aligns nicely with many flowering bedding plants, which makes it an excellent addition to greenhouse product offerings.



## DISEASE MANAGEMENT TIPS

Using good cultural practices with an effective fungicide rotation is key to producing healthy basil.

- Provide adequate spacing to allow good air flow between the plants
- Irrigate early in the day to decrease relative humidity in the production area (<75%)
- Use a preventive fungicide rotation to reduce the chance of disease development

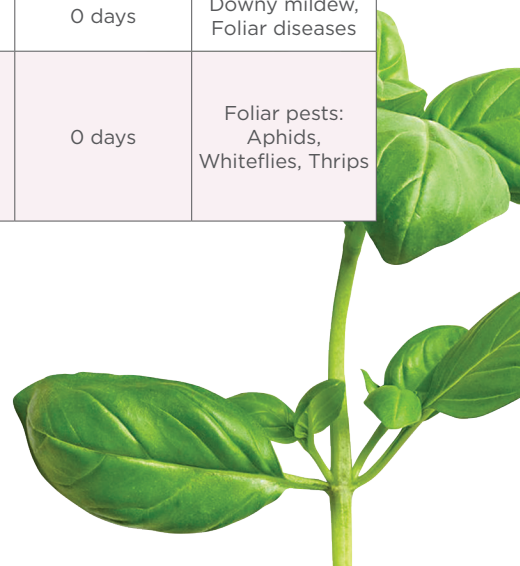
There are several Syngenta fungicides registered to help protect basil plants grown for retail sales. A well-structured program will provide guidance for leveraging strengths and modes of action of different products, so they can provide maximum benefit when needed most. The following program incorporates these principles and offers an effective rotation within label allowances to ensure the successful production of high-quality basil crops.

## ROTATION PROGRAM FOR BASIL SEEDLINGS AND PLUGS

WEEK	FRAC/ IRAC #	PRODUCT	USE RATE	APPLICATION <sup>1</sup>	RE-ENTRY INTERVAL (REI)	POST- HARVEST INTERVAL (PHI) <sup>2</sup>	TARGETS
1	4	Subdue Maxx® fungicide	3.6 fl. oz./ 5,000 ft <sup>2</sup>	Apply as a heavy soil surface spray at seeding or up to 7 days after seeding. Irrigate lightly after application to move product into the root zone.	0 hours	-	Downy mildew, Damping off ( <i>Pythium spp.</i> )
2							
3	40	Micora® fungicide	0.9 fl. oz./ 5,000 ft <sup>2</sup>	Spray using a volume of 40-60 gal./A	4 hours	1 day	Downy mildew, <i>Phytophthora spp.</i>
3 or 4 if needed		<i>S. feltiae</i> nematodes	See product label for instructions	See product label for instructions. Monitor adult populations with sticky cards and larvae with potato assay.			Fungus gnats
4	49	Segovis® fungicide	8 ml./5,000 ft <sup>2</sup>	Spray using a volume of 40-60 gal./A	4 hours	-	Downy mildew
5	11	Heritage® fungicide	0.4-0.9 oz./ 5,000 ft <sup>2</sup>	Spray using a volume of 60-80 gal./A	4 hours	0 days	Downy mildew, Foliar diseases
As needed		Grandevo® WDG or Azatin® O biological insecticide	See product label for instructions	See product label for instructions. Use scouting results and sticky card counts to determine pest populations. Repeat every 4-7 days as needed.	4 hours	0 days	Foliar pests: Aphids, Whiteflies, Thrips

<sup>1</sup>Spray volumes are suggestions only and meant to provide guidance to growers.

<sup>2</sup>Dashes indicate that there is no listing for post-harvest interval (PHI).



## ROTATION PROGRAM FOR BASIL PRODUCTION (FINISHED PLANTS)

WEEK	FRAC/ IRAC #	PRODUCT	USE RATE	APPLICATION <sup>1</sup>	RE-ENTRY INTERVAL (REI)	POST- HARVEST INTERVAL (PHI) <sup>2</sup>	TARGETS
1	4 21	Subdue Maxx + Segway® O fungicide	Subdue Maxx: 3.6 oz./5,000 ft <sup>2</sup> Segway O: 3 oz./A (10 ml./5,000 ft <sup>2</sup> )	Spray using a volume of 80-100 gal./A	Subdue Maxx: 48 hours Segway O: 12 hours	Subdue Maxx: 21 days Segway O: 0 days	Downy mildew
1 or 2	Biological	<i>S. feltiae</i> nematodes	See product label for instructions	Excess soil moisture and fertilizer will promote fungus gnats and shore flies. Monitor larval populations with small pieces of raw potato.	0 hours	0 days	Fungus gnats
2	M1	Camelot® O fungicide/ bactericide	1.9 gal./5,000 ft <sup>2</sup>	Spray using a volume of 80-100 gal./A. Do not reapply for 14 days. Do not apply within 20 days of a Phosphite application.	4 hours	-	General fungal diseases and downy mildew
3	40	Micora	0.9 oz./5,000 ft <sup>2</sup>	Spray using a volume of 80-100 gal./A	4 hours	1 day	Downy mildew
4	11	Heritage	0.4-0.9 oz./5,000 ft <sup>2</sup>	Spray using a volume of 80-100 gal./A	4 hours	0 days	General fungal diseases and downy mildew
5	49	Segovis	4-8 ml./5,000 ft <sup>2</sup>	Spray using a volume of 80-100 gal./A. Two applications allowed per crop.	4 hours	-	Downy mildew
6 (and longer)	21/33	Alternate sprays of Segway O and Phosphites such as Alude™ fungicide	Segway O: 3 fl. oz./A (10 ml./5,000 ft <sup>2</sup> ) Alude: 2.5-5 pts./A (4.6 - 9.2 fl. oz./5,000 ft <sup>2</sup> )	For production going longer than 6 weeks after transplant, alternate sprays of listed products. Spray using a volume of 80-100 gal./A	See product labels	See product labels	General fungal diseases and downy mildew
<b>As needed</b>	UN	Grandevo WDG, Azatin O or Pycana® insecticide/ miticide	See product label for instructions	Spray and repeat as needed per label instructions. Do not use Pycana if GH temps are 90°F. Refer to product labels for use information.	Grandevo WDG: 4 hours Azatin O: 4 hours Pycana: 12 hours	0 days	Aphids, Mites, Thrips, Whiteflies

<sup>1</sup>Spray volumes are suggestions only and are meant to provide guidance to growers.

<sup>2</sup>Dashes indicate that there is no listing for post-harvest interval (PHI).

### NOTES:

- Products recommended are general guidelines only and not an endorsement. Always refer to product labels for rates, re-entry intervals and other use directions.
- Applications are preventive or early intervention based on scouting results.
- Coordinate applications with irrigation. Most products need 4-6 hours of drying time.
- 60 gal./A = 7 gal./5,000 ft<sup>2</sup>, 50 gal./A = 6 gal./5,000 ft<sup>2</sup>, 40 gal./A = 5 gal./5,000 ft<sup>2</sup>, 30 gal./A = 3.4 gal./5,000 ft<sup>2</sup>

## SCOUTING DURING PRODUCTION

Inspecting plants regularly throughout the production cycle will help detect problems early so any corrective actions can be implemented quickly. Basil is susceptible to a variety of insects and diseases commonly found in ornamental production, such as:

- Botrytis
- Damping off (*Pythium spp.* & *Rhizoctonia solani*)
- Downy mildew
- Leaf spots (*Pseudomonas spp.* & *Colletotrichum spp.*)
- Aphids
- Whiteflies
- Worms

## BASIL DOWNY MILDEW

Downy mildew, caused by the oomycete pathogen *Peronospora belbahrii*, is one of the most serious diseases of basil. The disease can be introduced and spread through contaminated seeds or wind-blown spores that can travel long distances. Disease development is favored by moderately warm temperatures and high relative humidity. Plants infected with downy mildew will develop blotchy, yellow to reddish areas on the foliage that are restricted between major veins, giving them a banded appearance.

Symptoms are first observed in the lower foliage and gradually advance upward. At first glance, it can be mistaken for a nutritional problem. On the underside of the affected leaves, a fuzzy mat of spores can be seen corresponding to the blotchy areas. The color of sporulation may vary from gray to light purple, depending on the variety of basil. The disease can spread rapidly through the crop if corrective actions are not taken.



Basil downy mildew  
Source: Nancy Rechcigl, Syngenta





Learn more about solutions for basil and other vegetable crops at [GreenCastOnline.com/Vegetables](https://GreenCastOnline.com/Vegetables)

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