

Winter Greens: “Other” Issues



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UMass Extension Vegetable Program

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Cutworms



Mystery holes

Start small but can grow large

Feed at night

Different colors/forms/species

Management

- Entrust
- Bt e.g. Dipel or Javelin



Cladosporium variabile



Becoming quite common in winter

Can be seed-borne

Hot water treat or soak seed in 1.2% bleach

Cool (59-68°F) and humid (>80% RH) conditions favor disease

Symptoms

Tan circular spots

Dark olive velvety sporulation

Management

Reduce moisture and leaf wetness



Lettuce Downy Mildew

Bremia lactucae



Becoming more prevalent in winter and early spring seedling production
Exists as many races
Look for resistant varieties
Don't plant varieties with NO resistance

Brassica Downy Mildew

Hyaloperonospora brassicae



Diffuse yellowing



Gray-black flecking
Crusty white sporulation

Brassica DM: Symptoms



Poor stand
Yellowing cotyledons



Yellowing cotyledons
Tan-brown-gray flecking



Dark spots/growth on
leaf underside

Leaf Yellowing



Over watering/wet spot

“wet feet”

Leaching of nitrogen → deficiency

Make uniform, slightly raised beds and ensure even overhead watering

Leaf Yellowing



Older leaves affected, patchy distribution

Correlated w/ buildup off salts in top 2"

Salts >8 mmhos/cm can cause 50% reduction in spinach yield

Salts rise to soil surface over time thru evapotranspiration

Fertility



P: 20-40 lb/A pre-plant

K: 25-55 lb/A pre-plant

N: 20-30 lb/A pre-plant

+ 20-30 lb/A sidedress (once or twice)
if PSNT <20 ppm in top 6"

From 'Spinach Production in CA'

<https://anrcatalog.ucanr.edu/pdf/7212.pdf>

For seeding timing: UNH Winter Spinach Production in Unheated High Tunnels

https://extension.unh.edu/resources/files/Resource006103_Rep8625.pdf

Damping Off



Pre-emergence:

seedlings never emerge

→ bad or spotty germination

Post-emergence:

seedlings slow to emerge or die back

→ bad or spotty stand

Caused by several microbes

Pythium spp., *Phytophthora* spp.,
Rhizoctonia solani, *Fusarium* spp.

Damping Off

R. solani also causes seedling blight, bottom rot of lettuce. Fairly ubiquitous in soil.



Managing Stand Issues



Take the time to prep beds well, use a slightly raised bed

Use proper fertility and incorporate well

Avoid overcrowding or seeding too deeply

Consider priming seed

Manage soil moisture and uniformity

Maintain pH at 7.0

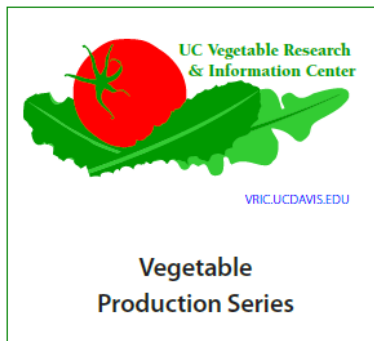
Soil microbial health: rotation, cover cropping, compost, organic matter

Use biofungicides eg. Rootshield Plus or Mycostop

[UNH Winter Spinach Production in Unheated High Tunnels:](https://extension.unh.edu/resources/files/Resource006103_Rep8625.pdf)

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SPINACH PRODUCTION IN CALIFORNIA

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PRODUCTION AREAS AND SEASONS

California produces spinach (*Spinacia oleracea*) in four areas: the southern desert valleys (Imperial and Riverside Counties); the southern coast (Santa Barbara and Ventura Counties); the central coast (Monterey, San Benito, Santa Clara, and Santa Cruz Counties); and the central San Joaquin Valley (Stanislaus and Tulare Counties). Almost half of California's spinach acreage and production is in Monterey County. The southern coast and San Joaquin Valley each produces about one-fourth of California's spinach, followed by Coachella Valley in Riverside County.

Spinach is produced virtually all year in the coastal

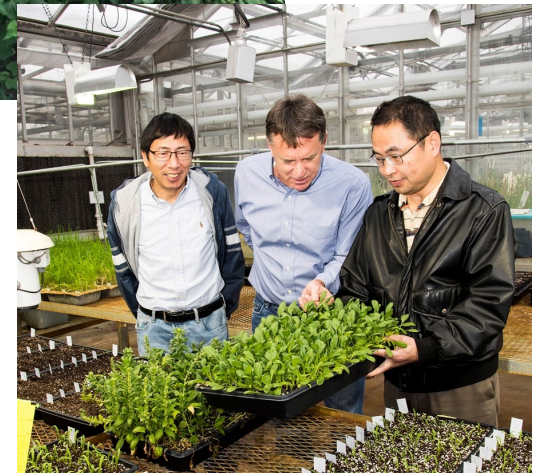
This bagged product is produced and sold containing either very small, young leaves ("baby spinach") or slightly older, medium-sized leaves ("teenage spinach"). Both baby and teenage spinach leaf sizes are usually significantly smaller than the leaf size of the traditional fresh market bunched spinach; freezer spinach leaf size is the largest of all marketed sizes.

CLIMATIC REQUIREMENTS

Spinach is a quick-maturing, cool-season vegetable crop. Seed germinate at 35° to 85°F (2° to 30°C), but 45° to 75°F (7° to 24°C) is optimal. Spinach will grow from 40° to 85°F (5° to 30°C), but growth is most rapid

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