

Organic Spinach:

Growing and Seed Saving Information



Spinach

Spinach (*Spinacia oleracea*) is a cool-season hardy annual in the Chenopodiaceae family, which also includes beets, chard, orach and quinoa. Spinach has two leaf types.

- Smooth leaf types are easiest to wash but require more material per bag because they pack more tightly.
- Savoy types are usually darker green and offer greater heft and loft once bagged, but require more careful washing.

New hybrid spinach varieties offer increased yield, disease resistance (especially for downy mildew), adaptability, and uniformity. Older, open-pollinated varieties are generally less adaptable, but can do exceptionally well under the right conditions and many believe they taste better.

Soil and Nutrient Requirements

Like all leafy greens, spinach thrives in fertile and moist soil. Spinach is sensitive to soil pH, preferring a range of 6.5-7. Magnesium deficiency manifests in yellowing leaves similar to nitrogen deficiency. Because spinach will carry excess nitrates if overfertilized, try correcting Magnesium first.

Position

Full sun to part shade

Seeding Depth

1/8-1/4"

Plant Spacing

For babyleaf ~40seeds/ft" in 2-4" bands, for bunching 2"

Row Spacing

For babyleaf space bands 1-2" apart, for bunching 12-18"

When to Sow

Direct seed as soon as soil can be worked in the spring, and again in the late summer-early fall. Greenhouse spinach is sown in early fall to give just enough time to germinate and produce a modest amount of leaf, but not grow so fast as to require a lot of upkeep. Seed germinates best when soil temperatures are 32-60°F and achieves the best quality when air temperatures are 55-60°F. Sow every 7 days for a continual harvest.

Frost Tolerant

Yes. Spinach is extremely hardy and a great choice for a winter greenhouse planting. It is one of the few plants that will keep growing in winter conditions, as opposed to just holding.

Drought Tolerant

No

Heat Tolerant

No. Spinach will bolt in hot weather.

Seed Specs

1,550-3750 (2,200 avg) seeds/oz, 25-60M (35M avg) seeds/lb. M= 1,000

Seeding Rate

Babyleaf- 70M seeds/100'bed (~2lb/100'bed), 700M seeds/1000'bed (~20lb/1000' bed) using 640 seeds/ft on 3'beds (16 rows/ bed). Bunching- 1,100 seeds/100' row (~1/2oz/100'row), 11M seeds/1,000'row (5oz/1000'row) using 10 seeds/ft, 18" row spacing.

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Seed Coating / Pelleting Info

Some of the varieties we carry receive an organic film coating applied to the seed, which make the seed easier to see during planting.

Harvest

Harvest individual leaves or cut baby leaves 1" above the ground. Harvest the entire plant for bunched spinach by cutting the whole plant right below its crown.

Storage

Store washed spinach at low temperatures and high humidity for 10-14 days.

Pest Info

- Aphids can be washed off plants with a hard stream of water. They have several natural predators that control populations including parasites (aphids appear grey or bloated), lady beetle larvae and lacewings.
- Leafminers are generally controlled by natural predators. Deep plowing in the spring can help, as well as controlling alternate hosts such as lambsquarter, chickweed, nightshade and plantain.

Disease Info

- Spinach is susceptible to downy mildew (*Peronospora farinosa f. sp. spinaciae*) and fusarium wilt (*Fusarium oxysporum f. sp. spinaciae*).
- Fusarium wilt is primarily soil borne, but can be spread over long distances by infected seed. Use only disease-free seed. Once introduced to the soil, fusarium wilt is difficult to eradicate. Crop rotations help eliminate inoculum, and the addition of lime at 2 tons per acre also reduces disease severity by increasing pH to alkaline levels that do not favor disease development.
- Downy mildew is not as persistent and its pressure can be reduced by three-year rotations with non-host crops.
- White rust can be a problem for spinach growers, primarily in southern climates; resistant varieties are now available.
- Cucumber mosaic virus, transmitted by aphids, causes stunting and underdevelopment in plants. Larvae of the Canada leafminer burrow into leaves causing blisters, making leaves unmarketable. Control insect pressure by using row cover and controlling weed hosts.

Seed Saving Instructions

Wind pollinated. Spinach varieties must be isolated by 1/4 mile to prevent cross pollination by wind. Physical barriers such as tree lines, buildings or woods may make it possible to use a shorter distance. Allow plants to bolt and set seed. Some staking may be necessary as plants may reach 3' in height. When seeds are dry, harvest the entire plant and thresh on a tarp. A 1/2" screen on top of a 1/4" and 1/8" is helpful for cleaning. Spinach seed remains viable for 3-5 years under cool and dry storage conditions.