

SPINACH

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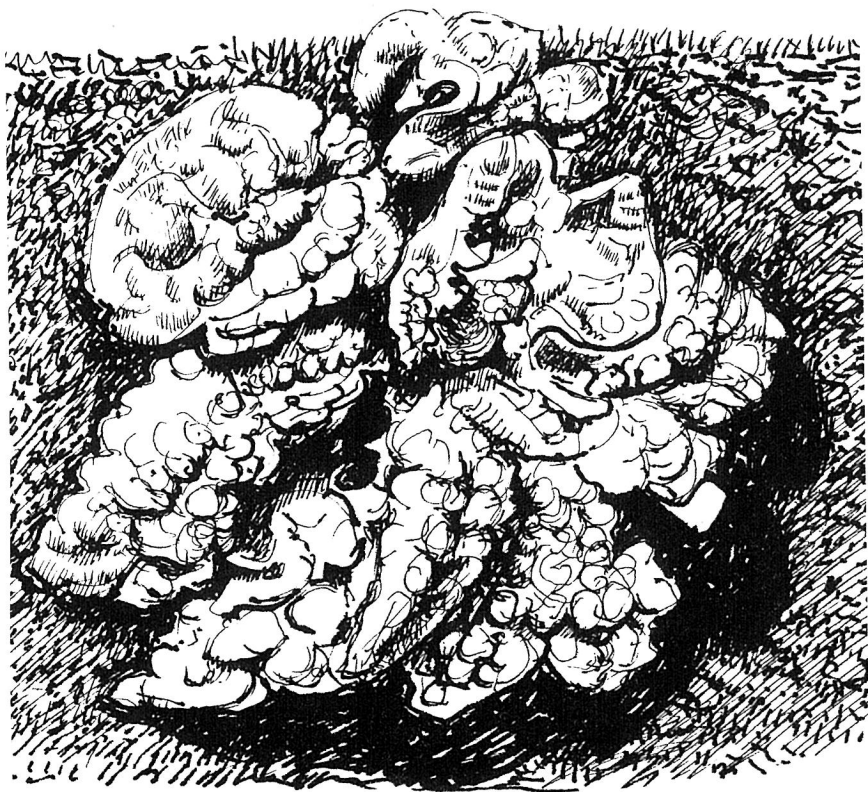
“Live in each season as it passes: breathe the air, drink the drink, taste the fruit and resign yourself to the influence of each. . . . Open your pores and bathe in all the tides of Nature in all her streams and oceans, in all seasons. . . . Grow green with Spring, yellow and ripe with Autumn. Drink of each influence as a vial, a true panacea of all remedies mixed for your especial use. . . . For all nature is doing her best each moment to make us well. She exists for no other end. Do not resist her.”

Thoreau

Have you noticed that spinach tastes different in spring than it does in fall? If you didn't know, you might believe that the varieties were different, and that one was a special French cultivar rarely found in the States. But no, they both grew from the same seed on the same ground. The only change is the time of year. Spring spinach tastes exceptionally clean, fresh and invigorating. It is light and tender in texture, a natural for salads. Fall spinach is surprisingly sweet. It may also be tender, but is also more substantially nourishing. Perhaps the protein content is higher, I don't know.

It is amazing how a different aspect of the plant predominates during each part of the growing season. In spring we welcome the first green haze that covers the forest. These are all small leaves. Fruits don't appear in spring and extra early fruits are not sweet enough for my taste. They lack the nectar of late summer. The so-called early peaches, even when fully ripe, seem shipped-in green. You have to wait until August to be permeated by the true sweetness of peaches and melons. Maybe it has to do with where the sun is or how much warmth has accumulated as the season progresses. That would certainly say something about melons and peaches. But even in a plant like spinach, which grows from seed so quickly, the leaves from a late summer sowing taste like fruit.

I think this is because spinach is what Goethe called “pure leaf.” It is very impressionable. It takes up the influences which surround it very quickly. This not only makes it taste good in two distinctly different ways, it also *teaches* us a lot about the varying conditions under which it grows. Spinach is the quick instructor of garden culture. Of course, I know many gardeners who do not take kindly to this instruction. They look with dismay at their visibly suffering plants and often walk away without taking notes. But personally speaking, I've always liked to look with care at



how spinach is growing. It's a reading I like better — and often trust more — than soil tests.

With a little practice a gardener can not only see the shortage of nitrogen in pale yellowing leaves and stunted, quickly bolting plants; she or he can also see excess nitrates, when the leaves go beyond a certain depth of greenness and wateryness, and begin to lose form. Commercial growers take advantage of this fact and often apply too much nitrate to the crop. They do this not only to get high yields. It also keeps the rabbits off, because rabbits are very sensitive to excess nitrate levels. We poor humans often lack the rabbit's keen sensibilities and regularly poison ourselves with nitrates. But with the help of spinach we can become more aware of this problem. Notice this most carefully when growing spinach under glass! I've grown winter greenhouse spinach that was very large and with no taste, which seemed shut off from the right balance of earth and sky. Creating a biologically active soil in a greenhouse instead of a mere nutrient composition is an essay unto itself, but spinach can give you the clues.

The next soil property which spinach reveals is tilth. Spinach grows best

in soils with high porosity. They especially love the silica fraction of the soil. If you've tried to grow spinach in both sandy loam and clay loam, you know that given adequate compost, it does better in soil with more sand. This goes even further. I've noticed that spinach in clay is more prone to soil-born fungi. It may be that spinach was originally a coastal plant (like its close relative, the sea orach) and that a bit of coast is indispensable to its well-being. You can, however, help to reduplicate the lightness of sandy loam by increasing the organic matter. Besides finished compost, rotted silage, hay and leaves are excellent. Unrotted manures will pump spinach up; and if you develop a little rabbit awareness, you will not like the result.

Spinach picks up its environment so quickly, that it can put you in touch with it as well. It is a wide-open creature of the rising and falling light; and through it, you can read the weak points of your garden culture. Through it you can even taste the spring and the fall on the tip of your tongue.

The Culture of Spinach

Spinach is even more versatile in the crop rotation than lettuce. Any ground which is idle and waiting for heat lovers can be planted with spinach. With very little effort tremendous spinach harvests can be taken from a well-planned squash or melon field. Just think of the space wasted between squash mounds! I always put two rows (sometimes double rows) of spinach between rows of squash. But I do make sure that I have room for one or two cultivations. You can also sow spinach where you plan to grow peppers. When the peppers are ready to go in, just hoe out spinach at the right spacing. No problem. Do you have tomatoe fences? What use are those two-foot gaps in Spring? Sow spinach in early spring, or better yet, sow it the October before. It winters over quite well. When it's time to add tomatoes, just proceed as for peppers. Spinach will follow the mid-summer heat lovers like bush beans or any other crop that is harvested by August, onions for example. Though late summer germination is poor, the taste of autumn spinach is very special and produces right into cold weather. Lastly try sowing spinach in October as the latest catch of all. Even commercial growers in lower New England overwinter spinach without any protection. It produces a spinach crop in spring almost before you've finalized your garden plan.

The culture of spinach is not similar to its cousin the beet. Except for a common love of calcium, spinach needs higher soil fertility (nitrogen), more water, and a looser, sandy loam. The clay soils which produce huge beets need work before they grow good spinach. A "muskmelon soil" is ideal for spinach, one which warms up quickly in spring, and is both fertile and a bit sandy. A southern exposure is good as well. Problems with virus and mold can always be traced to "dank" soil in my experience.

Spinach varieties vary somewhat, but don't seem nearly as dramatic as where and when you grow them. The same variety grown in different areas

can respond quite differently. For market gardening the easiest and most successful for me has been the hybrid Melody. Besides ease of culture, the yields were exceptional. Disease resistance has been good as well, although no variety I've tried survives a dank soil. Other gardeners prefer Avon hybrid as an all-purpose spinach. Johnny's Selected Seeds thinks that their Indian Summer is also better than Melody. They say it holds better in heat, hence the name. A good variety for the late crop. Standard varieties include Bloomsdale Longstanding (slow to bolt to seed) and America, which holds up well after picking. Though most spinach will over-winter, Cold Resistent Savoy and Winter Bloomsdale have been bred for that purpose. There are also many regional cultivars and they should not be dismissed, especially ones bred for the south. Check with local growers and give a call to your extension agent.

Not long ago a friend in Missouri showed me his trial beds. He had a local variety called Ozark (I think it had a number after it) growing next to a French cultivar prized by Allen Chadwick himself. Frankly I liked the Ozark better. It was November 20th and the rich sweetness was outstanding. It was bred for those hills. This is not meant to discredit the fine work done with spinach by the French. Many savvy gardening friends consider them second to none. A good source of seed is the French Seedsmen, Vilmorin.

Spinach germinates best if it is sown when nights are still frosty. I find that later sowings don't make such a consistent stand. For this reason I always prepare spinach ground the fall before. I prepare it well enough — with a generous amount of compost and a spray of biodynamic horn-manure — that all it takes is a period of dry weather and a light till to get the crop in. I have good results using the Plant Jr. Seeder set at plate-hole #11 (they suggest #13, but the smaller hole eliminates thinning). I also dust the seed in the hopper with a handful of dolomitic limestone. Spinach loves neutral pH, which is not available naturally in most areas of the Northeast. In general, if you have trouble with getting good germination from beets, chard and spinach, a dusting of lime on the seed might be the answer. Never use hot or hydrated lime. The same dusting can be used for hand sowing.

In either case the essential thing to beat is the spring heat. In the south that comes fast and cuts germination substantially. Depth of sowing depends on soil: about ½-inch for light soils; ¼-inch for clay loam. Be sure the seed is lightly firmed to insure good soil contact. For handsowing a sifted compost cover is good, especially for late summer and early fall planting, when germination is a problem.

One of my goals for spinach has always been to see how little work I could do and still get a good crop. I've found that on land which is not too infested with weed-seed, I could get away with only one cultivation. Because of this, I often planted double rows, since beyond the plants early

stages, I let the field go. Some growers really pack the rows — even closer than a foot. In fact, given a biologically active soil, spinach is so easy and so prolific that it's easy to plant too much. Know your market before you sow! This includes the household plot. I have been astounded by the yield, and have given away and tilled under more than I care to admit. However, since so little input is required, I've never lost much sleep over it. It makes a quick meal for worms and a great addition to the diet of hens and pigs.

Sometimes, however, the opposite is the case. Yields are too low. Then the gardener is tempted to use liquid feedings. Just remember that spinach is an impressionable child. Liquid manure may speed up growth tremendously, but it doesn't produce the best flavor. The watery growth is also accompanied by a residue of nitrates. Better to use compost tea, perhaps mixed with nettle tea and fed twice in the early and middle weeks of growth, but not within two weeks of harvest. There is usually time for only one spraying of Bio-dynamic silica spray (501). Spray just as the plant begins to form a tender rosette.

Autumn spinach is very hard to get started. I've never achieved a large consistent stand myself, but the sweet flavor is worth the effort. Heat, crusting and dryness are great enemies. Farther north these are less of a problem, farther south even more so. Sowing time in the central states is late August, melon-ripening time. Hardly in accord with frost-in-ground indications above. It would be difficult to make a fall market crop in many areas. However, if you can keep water on the seed bed, using overhead irrigation, it might be done. For this time of year I think bed culture has a distinct advantage over open field. Plant only what you need, and what you can really care for. Sowing with ½-inch of compost cover will eliminate crusting, but one good dry-out during emergence may wipe out all the seedlings. Silica may be applied at rosette time in connection with sprayings of late carrots or cole crops.

To overwinter spinach in the field, sow seeds from late September to middle October, depending on latitude. Keep the seed bed irrigated in dry weather. Further south spinach can be sown in November and harvested throughout the winter. Some gardeners take a cutting from a September sowing and still another in March. This has worked for me in Pennsylvania, but I've found that plants sown later weather the frost better.

Again, depending on latitude, spinach can be sown in a cold frame sometime in October. Use only finished compost so as not to dilute the leaves with excess nitrogen. Soak the seeds overnight, drain and dust with lime to make them handleable and to improve germination. Sow at ½-inch, firm well and keep well watered. To avoid overheating, leave the frames open as long as possible. Even when the days grow colder, a closed frame can heat above 100°F. This produces summer conditions which trigger bolting. If you suffer from chronic cold frame forgetfulness syndrome, you might consider planting oriental greens, green ice lettuce, or batavian

escarole. These take a greater range of heat than spinach though none endure the cold quite so well.

A word about winter environment: although cold frames and greenhouses shut out wind and ice, they also shut out a good percentage of environmental and cosmic forces as well. This is something you can taste. Closed environments can be opened somewhat by the use of biodynamic amendments. Silica (501) helps the plant better utilize scant sunlight. Horn manure (500) and the compost preparations promote balanced, unwatered uptake of nutrients.

If you have a tightly insulated cold frame, spinach will produce for a long time, but even if your frame freezes, spinach often regrows in late winter, unless the plants are too old. Four cuttings of leaves is about maximum. In late winter, cold frame or cold greenhouse sowings can be made again.

SEED: Seed per oz. 3000; seed per lb. 48,000

1 packet (¼ oz.) sows 25 ft.; 1 oz. sows 100 ft.

½ oz. of hybrid seed often sows 100 ft.

10-15 lbs. of seed per acre, depending on rate, variety, and soil conditions.

Germination: 60% very cold soil 40-50° F. Often poor emergence in late summer and early fall.

Viability: 3 years

Days to harvest: 45 to 55, if longer, something is wrong with culture or conditions.

MOON CALENDAR: All practices in leaf, ascending moon, including biodynamic sprays.

ROTATION: 2-3 years, between beets, chard, and spinach.

BIO-DYNAMIC SPRAYS: Horn manure (500) on land before sowing. Silica (501) at least once when true leaves appear, sprayed in the early morning.

COMPANION PLANTS: A beneficial catch and pre-crop for many plants. Sow early preceding tomatoes, peppers, squash, melons and eggplant: interplant these by harvesting every other spinach plant. Interplant with first year strawberry transplants; or alternate strawberry rows with spinach and cabbage.

