

# Choosing Vegetable Varieties

## for South Dakota

**Y**our seed catalog and local greenhouse offer many more vegetable varieties than you could possibly fit in your garden plot. Which ones will you choose? Narrow the possibilities by following this list:

- For best results, buy from a reputable company. You may pay a little more, but it's worth it for clean, disease-free seed with good germination rates.
- Check the number of days to maturity listed in the description. Although this changes somewhat depending on temperatures, you can still make comparisons relative to other varieties. If you live in the upper Black Hills or the northern part of the state, a variety that requires 120 days is not a good choice for you.
- Plant form: Is there room for long vines of squash and pumpkin, or do you need to look for bush varieties? Do you need to save space by trellising pole beans, or do you prefer the ease of bush plants? Do you need size-limited plants for container growing? Is your area windy? If so, you may want to choose short-growing varieties.
- For most of South Dakota, it's a good idea to look for "heat-tolerant" or "widely adapted" in the description, especially for cool-loving crops such as broccoli, cauliflower, lettuce, etc. For early-seeded or late-maturing crops, look for "frost tolerant."
- If you want added nutrition, look for "health-enhanced" varieties. For example, dark-red watermelon and tomato varieties have more lycopene than yellow-fleshed, and there are dark orange carrots that have been bred for their high vitamin A content.

Rhoda Burrows,  
Extension horticulture  
specialist,

and

Steven Munk,  
Extension educator,  
Minnehaha County

## Heirloom? Hybrid? Or something in between?

**Heirloom** varieties are gaining in popularity, and more seed catalogs are offering a wider selection of them. These are "tried and true" varieties passed down through generations of gardeners—and often have superb flavor. However, some of these varieties grow well only in specific areas and may be less widely adapted. They also may have less resistance to disease or have other undesirable characteristics, such as less uniform coloration, tendency to crack, stringiness, and other flaws. Choose carefully.

**Hybrids** are carefully developed crosses selected for improved yield, disease resistance, texture, color, etc. In addition, hybrid plants also have increased vigor over their inbred parents. Because seed companies need to be able to sell these varieties widely to recoup their investment, these varieties are more often adapted to large regions of the country. Seeds are first-generation progeny from selected parents, so you can't save seed from this year's crop and grow identical plants next year.

**In between** the hybrids and heirlooms is a wide range of varieties developed over decades for their favorable characteristics.

*For reliability, look for "AAS" on the label—that means it is an "All-American Selection" and has done exceptionally well in tests across the country. If you're adventurous, you may find many other varieties that work equally well for you.*



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## Specific crops

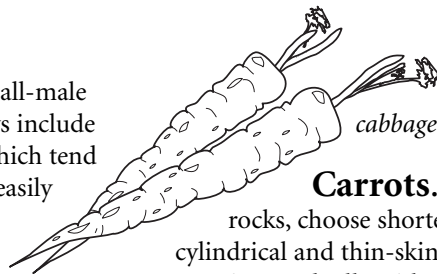
**Asparagus.** Look for hardy varieties, such as the all-male hybrids 'Jersey Giant', 'Jersey King,' etc. Older standbys include 'Mary/Martha Washington' and 'Viking' selections, which tend to be lower yielding and more disease-prone but are easily available and generally hardy. For variety, try 'Purple Passion', which has purplish-tinged spears (they turn green when cooked). Avoid California releases such as 'UC 157'. They are not hardy enough for South Dakota.

**Beans** (fresh, not dry types). **Bush** beans don't require trellises or poles but have a shorter harvest period than pole types, so you will need to reseed them every 2–3 weeks until mid-summer. Bush beans also tend to come into bearing a week or two sooner than pole types. **String** beans require de-stringing and the ends snapped off before cooking; **snap** beans don't. **French** beans are meant to be picked very young (pencil thin), so they must be picked at least every 2 or 3 days. **Lima** beans should not be planted until the soil is thoroughly warmed (60–65°F).

**Broccoli and Cauliflower.** These two, especially cauliflower, can be tricky to grow in South Dakota, due to our uneven and sometimes hot spring temperatures. Sprouting broccoli (without a large central head) is said to be more tolerant of heat than other types and has a longer harvest period. Avoid varieties that say "performs well in the north-east." *You'll have the best luck with small, young transplants in the spring; if the plants get too large, they're too sensitive to temperature changes and won't head properly. Also, if seedlings get rootbound they will tend to form "button" heads after transplanting.*

**Cabbage.** Select early-maturing types for planting from March through May and autumn-maturing types for late May to early June plantings. Varieties with tolerance or resistance to black rot, tip burn, Fusarium wilt (yellows), and head splitting or bursting are available. Buy seed that has been hot-water treated to kill blackleg and black rot diseases. Set transplants in the ground while their stems are smaller than a pencil; otherwise, they are more susceptible to bolting. Ornamental cabbage types are edible (barely). *Set transplants in the ground while their stems are smaller than a pencil; otherwise, they are more susceptible to bolting.*

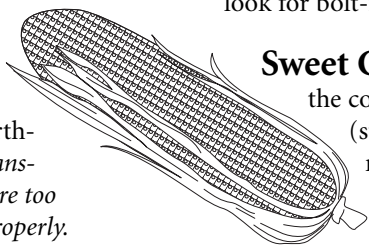
**Chinese cabbage.** The name refers to several different subspecies including both heading and nonheading types. **Michihli** types form tall, cylindrical heads; **Napa** forms loose, broad heads similar to savoy cabbage; and **Pak Choi** resembles swiss chard with long loose leaves (prone to bolting). *Plant in mid-summer*



*to avoid the tendency of Chinese cabbage to bolt in the spring.*

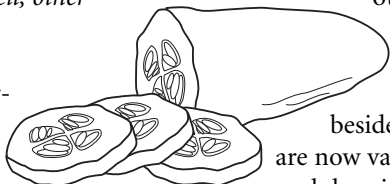
**Carrots.** If you have heavy clay soil or lots of rocks, choose shorter varieties. Common types are **Nantes**, cylindrical and thin-skinned, great for fresh eating; **Chantenay**, tapering gradually with a blunt tip and thick skinned, use for canning; **Danvers**, cone-shaped (classic Bugs Bunny), good for heavy soils, flesh often light in color with yellowish core, higher fiber than Nantes, good for canning; and **Imperator**, with long slender roots, long-season, and common in grocery stores. (The miniature carrots in the grocery stores are just larger Imperator carrots cut up.) There is also a wide variety of specialty carrots—some almost ball-shaped, others extra high in vitamins, or extra-sweet, etc. Although you can purchase varieties advertised as miniature, you can also just space the plants more closely and harvest when still small.

**Celery.** Celery is recommended only for truly dedicated, adventurous gardeners in the warmer parts of the state. Temperature fluctuations and cold nights cause celery to bolt; look for bolt-resistant, shorter-season varieties.



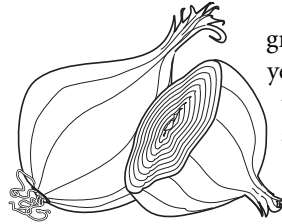
**Sweet Corn.** The most important distinction is whether the corn is **su** (traditional sweet corn varieties), **se** (sugar-enhanced), **sh2** (super-sweet), or one of the newer-generation hybrids that are combinations. The **su** types begin converting sugars to starch as soon as they are picked; **se** and **sh2** types have genes that slow this conversion, so they stay sweet much longer. Of the latter two, **sh2** tends to be creamier, while **se** types are more crisp-textured. Seeds of both **se** and **sh2** have a tendency to rot if planted in soils cooler than 60°F.

**Cross-pollination:** *Sweet corn is the one exception to the generalization that pollen source doesn't affect fruit quality of vegetables. You DO need to pay attention to potential sources of corn pollen, even if you don't plan on saving the seed. All sweet corn should be isolated from field corn, popcorn, and Indian corn. Sh2 varieties must be isolated from both su and se types, as well as field corn, preferably at least 300–500 feet; otherwise, the ears will have the taste and texture of field corn. (An alternative is to plant early and late-season varieties so they do not pollinate at the same time). Se types can be grown beside su types. To complicate matters further, there are now varieties that are combinations of se and sh2, so read descriptions carefully for isolation requirements. White sweet corn pollinated by yellow sweet corn may contain some yellow kernels, but the taste will be fine (assuming*



you've followed the above guidelines).

**Baby corn:** Although there are occasionally cultivars designated for this purpose, any sweet corn can be picked at the 2–3 inch stage (prior to pollination, or about 1–2 days after silking).

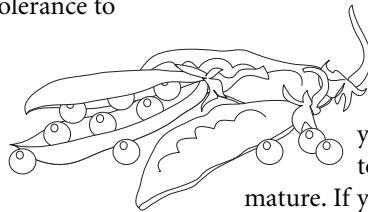


green rind with deep orange flesh (75 days). **Crenshaw** has yellow rind with pink, flavorful flesh (90 days). Many other types have flesh colors ranging from white to deep orange and gourmet flavors.

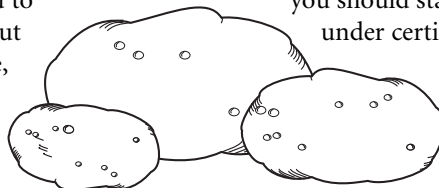
**Cucumbers.** Cucumbers come in two main types—**slicing** (fresh eating) and **pickling** (tend to have a more 'warty' skin). Use burpless (free from bitter skin) types only for fresh eating; they will produce mushy pickles. There are a few varieties listed as "dual-purpose" that can be pickled or eaten fresh, but they are not burpless. If space is limited, look for bush-type varieties or build sturdy trellises.

**Eggplant.** Also two main types: large oval or elongated. There are also small-fruited and ornamental varieties that can be grown in containers for eating or decoration. Depending on the variety you select, the days to maturity will range from 50–80 days after transplanting. Fruit color of eggplants may range from white through light pink-purple to black, depending on the variety. There are varieties available that have tolerance to tobacco mosaic virus.

**Lettuce.** The several types of lettuce are **Leaf** (loose-leaf); **Romaine**; **Butterhead** (Bibb); and **Crisphead** (Iceberg-types). Crisphead types are not recommended for South Dakota as they need long, cool summers. It's a good idea to look for "bolt-resistant" or "slow to bolt" in the description, as well as "heat-tolerant," especially for early-to mid-summer growing.



**Muskmelon,** often called cantaloupe in the U.S. Plants are vining; they can be trellised, but developing fruit must be directly supported. Days to maturity range from 65–88 days. Traditionally, "eastern" types are fresh-market varieties with coarse netting, deep sutures (ribs), strong aroma, soft flesh, and relatively short shelf life; while "western" types tend to be smaller, lack ribs, have less aroma, and keep longer. Newer varieties may combine characteristics of both types. Be aware that varieties designated as "shipping" tend to have firmer flesh with less intense flavor, but they keep longer in storage. When possible, select melon varieties that have tolerance/resistance to powdery mildew, Fusarium wilt, and downy mildew.



**Onions.** Select **day-neutral** or **long-day** types for growing in South Dakota. You can grow onions from seed started in early March, purchased plants, or "sets," the miniature bulbs sold in sacks. A word of warning: If the sets are too large (over dime-size in diameter) they may bolt instead of forming a bulb. Generally, the storage life of onions from longest to shortest is: yellow > red > white > Spanish and sweet. There may also be significant differences in storage potential between cultivars within each color group.

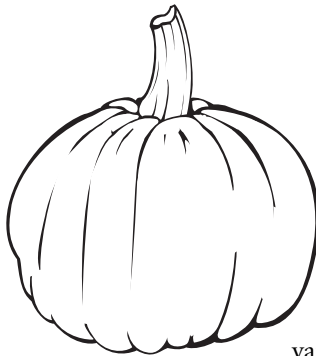
**Peas.** For fresh eating, there are three main types: **Green peas**, our "normal" garden variety; **snap peas**, with an edible pod (some varieties may need to be destringed); and **snow peas**, also edible pods, usually requiring destringing. Look for heat tolerance and powdery mildew resistance when selecting varieties.

**Peppers.** Peppers range from sweet (bell) to extra-hot (habanero), or somewhere in between and come in a range of sizes. Colors range from yellow and green or purplish green when immature to red, yellow, brown, purple, or orange when fully mature. If you have had problems in the past with bacterial leaf spot or certain viruses, look for varieties listed as tolerant to these diseases. Varieties reportedly differ in susceptibility to blossom end rot, but this is not usually listed in descriptions so you may need to try several different types/varieties if this has been a serious problem for you in the past.

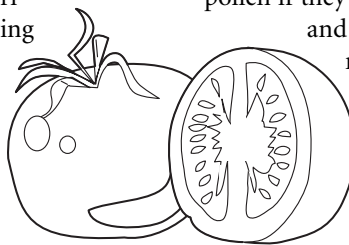
**Potatoes.** Red- and white-skinned potatoes are the most common, but gardeners can also grow yellow- or blue-skinned or -fleshed varieties as well. Check variety descriptions for use and storage characteristics. Depending on their starch content, some varieties are better for boiling or mashing, and others for baking, while still others can be used for either purpose. Some will store well, some not so well. Because viruses are so common, you should start with purchased "seed" (pieces of tubers grown under certified conditions to minimize diseases) unless you are growing an heirloom variety that you cannot obtain from a certified source. Don't cut up grocery-store potatoes for seed; they likely have been treated with a sprout inhibitor and often carry scab or other diseases. If you have had disease problems, look for scab- and/or blight-resistant varieties (and avoid applying manure, as it increases likelihood of scab).

Related melons: **Honeydews** are smooth skinned with green or white rind and flesh (80–88 days). **Charentais** has blue-

**Pumpkins.** Varieties come in a range of sizes (3 inch to 3 ft diameter), shapes (flattened, round, or tall) and some are even white. If you want to use them for baking in addition to decoration, look for **pie** or **processing** varieties; they will be less stringy. For giant pumpkin contests, look for “giant” varieties (these are actually a different species, *Cucurbita maxima*). With all pumpkins, remember to check the number of days to harvest; some varieties require too long a growing season for parts of South Dakota. Be sure to look for powdery mildew-tolerant varieties, since that is a ubiquitous disease.



**Squash.** **Summer squash** include types harvested immature before the rind hardens. Summer squash are bush type plants, and come in several different fruit types. Common types include Scallop (or patty pan), usually white or yellow; constricted neck (crooked neck or straight neck), usually yellow and club shaped; and Italian marrows such as zucchini, cocozelle, and caserta, ranging from gray-green to dark green to yellow. Summer squash types require 50–65 days of growth before harvest. Some varieties have some tolerance to powdery mildew, cucumber mosaic virus, zucchini yellow mosaic virus, and/or watermelon mosaic. Multi-virus tolerant varieties tend to yield lower than regular hybrids. **Winter squash** include types harvested when the fruit is mature and the rind is hard. They are primarily vining types that require considerable growing space, 50–100 square feet per hill of 2–3 plants. There are also semi-vining and bush type varieties that can be grown where garden space is limited. Depending on what variety you plant, winter squash require 80–120 days before harvest and fruit can range from 1–100 pounds in size. Squash can produce a wide array of skin colors, providing



decorative opportunities. Varieties are available with some tolerance to powdery mildew and/or Fusarium wilt.

**Tomatoes.** Look for **determinate** or bush varieties if you plan to can the fruit, because these types will tend to produce their fruit all at the same time. **Indeterminate** varieties will keep growing and producing over a longer period of time. **‘Paste’, ‘Plum’,** or **‘Roma’** varieties are great for cooking and canning because they have less pulp, but they also can be used fresh. Determinate types tend to have more problems with blossom end rot, due to the stress on the plant of producing all the fruit at the same time. Shorter-season (early) varieties may tend to have less flavor than longer-season (late) varieties. Look for disease resistance if you have had trouble with wilting. **VFNT** are common designations on tomatoes, indicating resistance to four common tomato diseases: **V**erticillium wilt, **F**usarium wilt, **r**ootknot **N**ematode, and **T**obacco mosaic virus, respectively.

**Watermelon.** Growers in the cooler areas of the state in particular should look for the shorter-season varieties. **Seedless** watermelons are becoming popular but require extra attention, preferably planting as transplants so that the seed can be germinated under ideal conditions (85°F and evenly moist). Seedless watermelons also require a seeded type growing with them for pollen if they are to set fruit. Growers have a wide choice of sizes and flesh and rind colors. “Ice-box” or “personal-size” melons are small (5–15 lb), round melons perfect for small families. Most watermelons require 75–85 days after planting to maturity, but there are some that take as many as 100 days, or as few as 65 (a yellow-fleshed ice-box variety). If you’ve had trouble with leaf diseases in the past, look for anthracnose-tolerant varieties.

## For more information:

FS915, Growing tomatoes in the home garden, <http://agbiopubs.sdstate.edu/articles/FS915.pdf>

ExEx6009, Growing asparagus, <http://agbiopubs.sdstate.edu/articles/ExEx6009.pdf>

FS904, Salt salinity tolerance of common horticultural crops in South Dakota: garden and vegetable/woody fruit crops, <http://agbiopubs.sdstate.edu/articles/FS904.pdf>

EC668, Vegetable Gardening, <http://agbiopubs.sdstate.edu/articles/EC668.pdf>

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FS926: 2,000 copies, \$.?? each, March 2009.