

## Symptoms of Frost Damage for Vegetable Crops

Crop	Symptoms
Artichoke	Epidermis detaches, forming whitish to tan blisters; underlying tissue turns brown when blisters break.
Asparagus	Tips become limp and dark; spears are water-soaked and mushy when thawed.
Beet	External and internal water soaking; conductive tissue blackens.
Broccoli	Central florets turn brown with a strong odor.
Brussels Sprouts	Outer leaves turn brown and fall off; inner sprouts may become soft and mushy.
Cabbage	Leaves become water-soaked, translucent, and limp; epidermis separates upon thawing.
Carrot	Blistered appearance; interior darkens with jagged cracks upon thawing.
Cauliflower	Curds turn brown with a strong off-odor when cooked.
Celery	Leaves and petioles appear wilted and water-soaked upon thawing.
Chard (Swiss)	Leaves turn black and crispy, starting from the edges; stems become water-soaked.
Corn (Sweet)	Kernels become water-soaked and mushy; husks turn brown and brittle.
Eggplant	Skin develops sunken, water-soaked areas; interior turns brown and spongy upon thawing.
Garlic	Thawed cloves appear grayish-yellow and water-soaked.
Kale	Leaves turn dark green or black but recover if frost is mild; repeated exposure causes brittleness.
Leek	Leaves become limp and water-soaked; outer layers may peel off.
Lettuce	Outer leaves blister, tan, and become susceptible to decay.
Onion	Thawed bulbs are soft, grayish-yellow, and water-soaked in cross-section.
Parsnip	Roots develop water-soaked patches and darken internally upon thawing.
Peas	Pods become water-soaked and translucent; seeds inside turn brown and mushy.
Pepper, bell	Pericarp becomes water-soaked; shrivels and decays after thawing.
Potato	Gray or bluish patches beneath the skin; thawed tubers soften and may develop rot.
Pumpkin	Skin develops water-soaked spots that darken; flesh inside becomes mushy.
Radish	Tissues appear translucent; roots soften and shrivel.
Spinach	Leaves develop translucent, dark green patches; severe frost causes wilting.
Squash (Summer)	Skin softens and darkens; internal tissues turn mushy and watery.
Squash (Winter)	Hard rinds crack; flesh develops water-soaked patches and may rot.
Sweet Potato	Yellowish-brown vascular discoloration; water-soaked tissues susceptible to decay.
Tomato	Water-soaked and soft upon thawing; clear margin between healthy and damaged tissue.
Turnip	Water-soaked spots or pitting; injured tissues turn tan or gray with an odor.
Zucchini	Skin becomes soft and wrinkled; interior flesh turns watery and discolored.