

YARD & GARDEN REPORT

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Are Your Trees Choking?

Many trees in North Dakota are being strangled by their own roots. It's an underground epidemic!

Are your trees choking? Now is the most obvious time to find out. Choking trees show early fall color, small leaves, and drop their leaves early (Fig. 1). I hate to see a tree show its fall color this early in the season. In many cases, the tree is crying out for help—it's choking to death!

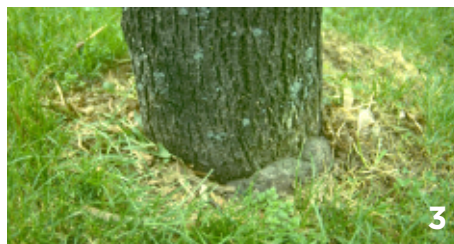
Look to see how the trunk enters the ground. A healthy tree develops a *flare* at its base (Fig. 4). A choking tree may enter the ground as straight as a *telephone pole* (Figs. 2, 3). These trees have roots that are strangling the trunk, preventing the trunk from growing, and stopping the flow of water and nutrients within the tree.

Why would a tree strangle itself with its own roots? It is often related to planting trees *too deep*. Many trees in ND are planted too deep. Perhaps we don't want the trees to blow away!

Trees planted too deep will develop stem roots that grow in a direction that later strangles the trunk.

In many cases, choking trees are not detected until they are over 20 years old and too late to save.

The best way to stop this epidemic is to prevent it. Plant a tree so its top set of branch roots are *at or just slightly below the surface—no deeper*. On nursery-grown trees, these branch roots will have a diameter the size of a pencil or



Figs. 1-4 (top left and clockwise). A tree with girdling roots showing early fall color and a thin canopy. Figs. 2, 3. Stem girdling roots. Fig. 4. Healthy root flare.

larger. Don't confuse these roots with thin adventitious roots that may have developed in the root ball or mulch.

Inspect trees before planting. For balled-and-burlapped and container-grown trees, remove the soil between the top of the soil ball to the first branch roots. A pruning saw works well for this. Dig the hole to the appropriate depth so the branch roots will be near the soil surface.

Avoid trees that are severely pot-bound (large, coiling roots in the pot) and buried deep in containers.

Don't pile mulch against stems. It's the same as planting a tree too deep.

Inspect young trees to look for girdling and take action, if needed.

The next time you plant a tree, keep the following phrase in mind: "If you plant a tree *high*, it won't die—but if you plant a tree *low*, it won't grow!"

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A Touch of the Prairie

Ornamental grasses are perfect perennials for North Dakota. They look great all year round—including during our long winters! They require almost no care, resist drought, and deer leave them alone. ‘Karl Foerster’

feather reed grass is one of the most popular perennials in North Dakota landscapes—for good reason—but new and improved cultivars of other grasses are gaining popularity. Use them as eye-catching specimen plants,

vertical accents, or plants that soften edges. The following plants are hardy in Zone 4 and sheltered areas of Zone 3 unless noted otherwise. Photos are courtesy of Walters Gardens, a great website to browse.



Feather Reed Grass

Calamagrostis × *acutiflora*. Very popular. Tight, vertical clumps with wheat-like seedheads. A great accent plant. Shown: ‘Karl Foerster’, 2001 Perennial Plant of the Year. Cultivars with striped foliage include ‘Overdam’, ‘Avalanche’ and ‘Eldorado’. Ht: 48–60 inches.



Blue Grama Grass

Bouteloua gracilis. Beloved for its unique, horizontal seedheads. Silvery green foliage. Shown: ‘Blonde Ambition’. Ht: 18–36 inches.



Blue Oat Grass

Helictotrichon sempervirens. Steel blue leaves arch back like a water fountain. Clumps are tight, neat and do not spread. Very hardy. Ht: 24–36 inches. Zone 3.



Maiden Hair Grass

Miscanthus sinensis. Maroon “flames” in fall turn silvery in winter. A very showy plant in fall and winter. Develops into a large clump quickly. Shown: ‘Huron Sunrise’. Ht: 48–72 inches.



Little Bluestem

Schizachyrium scoparium. Silvery blue stems turn purple/wine red in fall. Shown: ‘Blue Paradise’. Very hardy and tolerant of hot, dry sites. Ht: 24–48 inches. Zone 3.



Switch Grass

Panicum virgatum. Metallic blue to dark green foliage turns gold to red in fall. Shown: ‘Cheyenne Sky’. ‘Northwind’ is the 2014 Perennial Plant of the Year. ‘Heavy Metal’ is a popular blue-stem cultivar. Ht: 36–72 inches.

Plant Health Care

Vegetables



Rabbits

Fencing is recommended. Make it 3 feet tall (4 feet for jackrabbits) and bury 6 inches deep. Mesh should be 1.5 inches or less. Bloodmeal repellent, guard dog, and live trapping may help.



Headless Cauliflower

Plants produce tiny “buttons” or no heads due to stresses such as extreme temps, drought or lack of nitrogen. Use young, healthy transplants and set in ground 2 weeks before last spring frost.



Blossom Drop on Pepper

Fruit setting is diminished under temp extremes (day temps over 90°F or night temps above 70°F or below 55°F). Winds, moisture extremes, pests and heavy fruit loads reduce setting.



Tomato Cracking

Caused by rapid growth of fruits, often due to rains after period of drought. Cracks may become infected. Mulch plants to maintain uniform moisture conditions. Use resistant varieties.



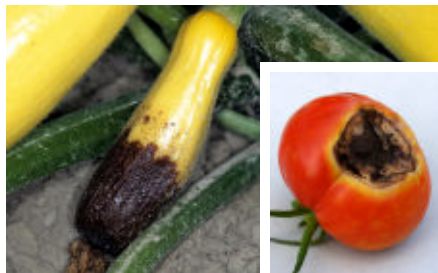
Septoria on Tomato

Small (1/8-inch), numerous spots begin on lower leaves. Remove infected foliage. Avoid getting foliage wet. Fungicide sprays (chlorothalonil, mancozeb, copper) prevent spread.



Thrips on Onion

Thrips feed on stalks, creating silvery blotches. These tiny pests hide within leaf folds. Jet sprays of water into folds can dislodge them. If damage is severe, spray with a pyrethroid.



Blossom End Rot

Caused by calcium deficiency and associated with uneven soil moisture. Often prevalent on first fruits. Keep soil moist and do not damage roots when cultivating. Mulch vines.



Hollow Cucumbers

Drought and poor pollination (related to heat) is causing fruits to be hollow. May be associated with too much nitrogen or a lack of calcium or boron. Maintain uniform moisture in the soil.

Plant Health Care

Trees and Shrubs



Fall Webworm

Caterpillars eat leaves but cause minimal damage to overall tree health. Nests may be collected with a forked stick. Young larvae may be killed with *Bacillus thuringiensis*, carbaryl or a pyrethroid.



Septoria on Dogwood

Purple spots with gray centers appear in late summer. Rake fallen leaves to remove fungus and prevent infection next year. Rarely causes significant harm; fungicide sprays rarely needed.



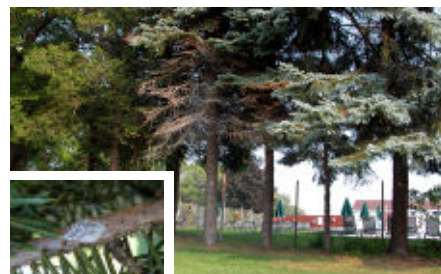
Viburnum Gall

Eriophyid mites feed on leaves in early spring. This causes a hormonal reaction, leading to leaves curling and developing pink streaks. Damage is cosmetic. No pesticides are needed.



Twig Blight on Cottonwood

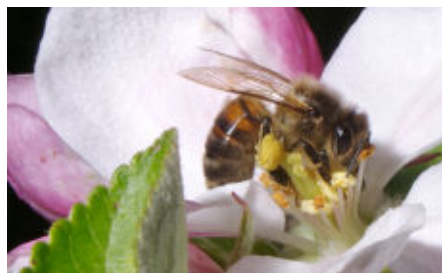
Leaf petioles blacken; twigs dry out and may bend into a shepherd's crook at tips. For trees up to 15 feet, trim out infected branches. Rarely a significant problem for established trees.



Cytospora Canker

Fungus chokes off flow of water and branch tips die back. Entire branches die. Often found on lower branches of mature trees. Prune off dead branches at trunk. Sterilize pruners between cuts.

Fruits



Barren, Young Apple Trees

Trees on standard rootstocks might not produce a crop for 8 years! Two apple varieties or a crabapple within 100 ft are needed. Nearly all varieties are compatible except very early with late ones.



Mottling on 'Honeycrisp'

Starches fail to move out of leaves. Affects trees with light fruit loads. Does not affect long-term productivity. Thin crops if needed in late spring for consistent yields year to year.



Powdery Mildew on Grape

Gray powder develops on fruits and foliage. 'Valiant', a leading variety, is susceptible. Remove infested clusters. Sulfur sprays prevent spread. Prune vines in winter to increase air movement.

Weather Almanac for August 5–11, 2018

Site	TEMPERATURE ¹				RAINFALL ^{1,4}				GROWING DEGREE DAYS ^{1,5}			
	August 5–11				August 5–11		2018		August 5–11		2018	
	Avg	Norm	Max	Min	Total	Norm	Total	Norm	Total	Norm	Total	Norm
Bottineau	71	69	100	49	0.00	0.46	8.13	10.60	114	113	1620	1450
Bowman	73	71	102	49	0.00	0.28	9.70	9.41	120	125	1557	1473
Carrington	71	70	94	52	0.00	0.52	8.62	11.91	119	119	1750	1573
Crosby	73	68	104	52	0.00	0.35	7.50	9.37	128	108	1606	1333
Dickinson	75	70	101	51	0.00	0.37	9.69	10.45	128	120	1695	1464
Fargo	75	71	92	58	0.53	0.51	10.55	11.65	143	126	1992	1691
Grafton	72	68	93	51	0.00	0.67	10.13	11.20	122	108	1722	1464
Grand Forks	71	69	91	53	0.00	0.63	10.55	11.30	123	114	1819	1507
Hazen	73	72	101	50	0.03	0.39	6.60	10.54	119	126	1680	1616
Hillsboro	71	70	91	52	0.00	0.53	9.03	11.88	122	120	1816	1594
Jamestown	71	70	87	54	0.49	0.44	13.12	11.26	122	120	1712	1567
Langdon	70	66	95	50	0.00	0.63	7.35	11.77	116	96	1541	1249
Mandan	74	71	98	53	0.00	0.55	10.04	11.27	131	124	1788	1554
Minot	73	69	100	54	0.00	0.45	7.12	10.59	125	114	1711	1422
Mott	73	71	102	48	0.00	0.34	7.96	9.81	117	123	1664	1530
Rugby	72	68	98	53	0.12	0.53	8.29	11.85	120	109	1664	1452
Wahpeton	73	72	92	57	0.17	0.46	10.88	12.12	131	131	1924	1757
Watford City	74	70	103	54	0.76	0.34	8.11	9.19	129	120	1693	1492
Williston	75	73	105	53	0.11	0.36	9.19	8.82	132	132	1706	1670
Wishek	73	69	93	52	0.00	0.47	10.75	10.16	130	111	1668	1411

DAYLENGTH (Aug. 13, McClusky, center of ND)² LONG-TERM OUTLOOKS³

Sunrise: 6:35 AM Daylength: 14h 24m Aug. 18–22: Temp.: Normal; Precip.: Normal
 Sunset: 8:59 PM Change since Aug 6: –20m Aug. 20–26: Temp.: Above Normal; Precip.: Below Normal

^{1,2,3} Sources: North Dakota Agricultural Weather Network, www.sunrisesunset.com, and National Weather Service, respectively.

^{4,5} Rain data begin April 1. GDDs for garden vegetables are not available. GDD data in this table are for corn, which responds to temperature as most vegetables grown in gardens. Data begin May 1 with base minimum and maximum temperatures of 50 and 86°F, respectively.

Credits

Sources:

Bailey Nurseries, Bergeson Nursery, Jeffries Nurseries, Walter's Gardens. 2018. Online catalogs.

Johnson, G. and D. Fallon. 2009. Stem girdling roots: The underground epidemic killing our trees. University of Minnesota. Accessed online.

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