North Dakota State University Extension

Yard & Garden Report

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Measuring Rain at Home

Did you ever wake up and wonder how much rain fell in your yard last night? Some nights this summer have been filled with lightning but not many raindrops. That's bad luck!

We can go online or watch television and see how much rain fell at the local weather station, but rains are spotty. The rainfall amount in one neighborhood can be very different than another.

The amount of rain that falls in our yards is important. **The lack of water is the most limiting factor to having a great yard and garden in North Dakota.** We live in one of the driest states in the USA.

It's time for a rain gauge. It's time to make smart decisions on watering the yard. It's time to grow a green lawn and a bountiful garden without wasting water (and money).

That's when I discovered the Community Collaborative Rain, Hail and Snow (CoCoRaHS) Network. It's a group of over 15,000 volunteers—300 in North Dakota—that measure rain, hail and snow in their backyards.

CoCoRaHS trains volunteers to get quality data from inexpensive equipment. Here is how they recommend we measure rain in our yards:

Selecting a Gauge

Use a rain gauge with an opening of 4 inches or more. Smaller openings provide misleading amounts. CoCoRaHS has a specific model they use. It is available for less than $40 at http://www.weatheryourway.com/cocorahs/rgcoco.htm, Amazon.com and other online sites. It provides accurate measurements to the nearest one hundredth (0.01) of an inch.

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Measuring rain can help us make smart decisions when caring for our land.

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Measuring Rain at Home (continued)

Placement

Many people place their rain gauge near their homes out of convenience, but this is usually a bad location. Depending on the direction of wind, the house can block rain from falling into the gauge. Raindrops may also bounce off the roof of the house and into the gauge.

Avoid large obstacles (buildings and trees) that block precipitation. In a perfect situation, place your gauge two times the distance as the height of a nearby tall object. For example, if you have a two-story home (about 30 feet high), place the gauge at least 60 feet downwind from your home.

Keep your gauge away from roofs or other surfaces where heavy rains could bounce off and into the gauge.

The area should be away from sprinklers and protected from strong wind, if possible.

It's not always possible to find a perfect location. Just do your best.

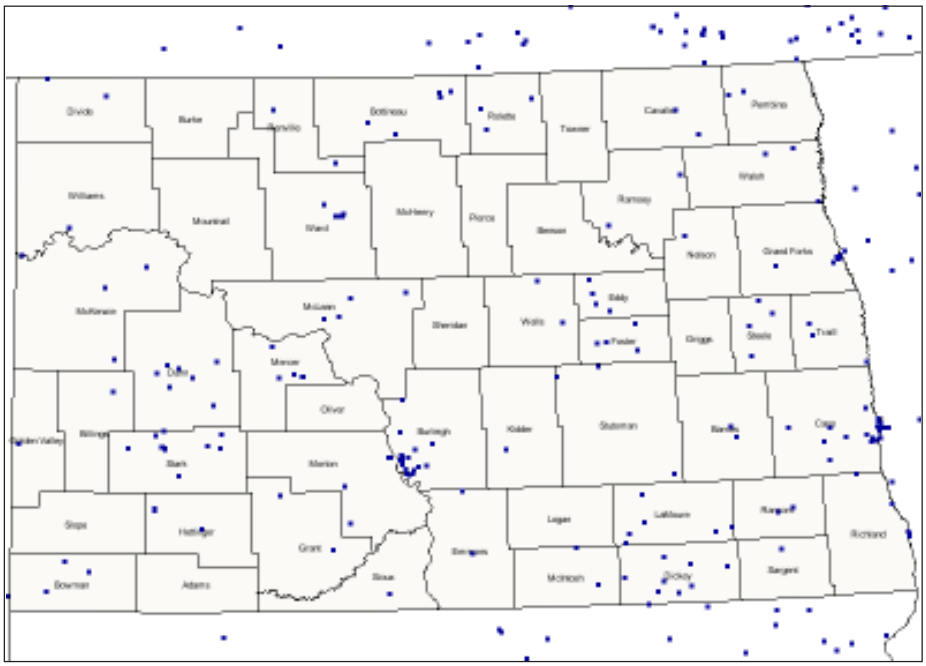
Mounting

Mount the gauge on a single post (see photo on Page 1). Keep the opening of the gauge several inches above the post to prevent raindrops splashing off the post and into the gauge. The top of the post should be rounded, pointed or slanted downwards—not flat.

The gauge should be 2–5 feet off the ground. The opening of the gauge should be level.

Joining CoCoRaHS

It's easy to join and everyone is welcome. There is a need for more volunteers in North Dakota. You can sign up online, buy the gauge and receive online training. Every morning, you can measure your gauge and share your results online.



Active stations of the CoCoRaHS Network in North Dakota.

Your information will be used by meteorologists, farmers, city officials and others for monitoring water supplies, forecasting floods, assessing storm and drought damage to crops, managing irrigation, controlling mosquitoes, and understanding our changing weather patterns.

I'm joining this network. It will help me grow a better garden and the information will help others, too. If you are interested, go to their website: https://www.cocorahs.org/.

Sowing Fall Vegetables

Many vegetables thrive under the cool temps of autumn. New crops of spinach, Asian greens, mustard, kohlrabi, and turnips can be sown from now to early August.

Vegetables that mature under cool temps are mild, crisp and delicious. The finest radishes are grown in fall—you'll notice the difference. Sow them in early to mid August.

Flea beetles can be a problem. Protect plants with floating row covers or be prepared to spray the leaf-munching pests with insecticides.

Now is a great time to sow spinach.

Plant Health Care

Vegetables

Bacterial Spot, Speck

Dark, corky, sometimes raised spots develop on green and red fruits. Spots develop on vines. Avoid working in garden and wounding vines when wet. Sprays of copper will prevent spread.

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.

Tomato Leaf Roll

Leaves roll upward and may become leathery. First appears on lower leaves. Often occurs after heavy rains and with staked plants. Leaves unroll when soil dries. Yields are normal. No treatment.

Potato Flowers, Berries

It is natural for potato vines to produce flowers and seedpods. These seedpods are toxic. Remove or ignore.

Cabbage Moths

Moths lay eggs on cabbage and broccoli. Eggs hatch into larvae that create tunnels. Spray with *Bacillus thuringiensis* while caterpillars are small. Carbaryl or pyrethroids are used on mature caterpillars.

Giant Zucchini

Harvest zucchini regularly—even if you don't know what to do with it. If you stop harvesting, the vine will direct its energy toward producing seeds in the giant fruits and stop flowering. This prevents future zukes from forming.

Trees and Shrubs

Dicamba Injury

Increased use of dicamba in soybeans puts nearby trees at greater risk. Leaves become elongated, curled or cupped. Most trees survive. Persons may report formal or informal complaints to NDDA.

Poplar Petiolegall Aphid

Bumps appear on petioles, and the leaves may drop. White aphids develop inside galls and later feed on mustards. Defoliation is minor. Rake leaves. No pesticides are needed.

Storm Damage

Stay away from power lines. Prune broken branches, making clean cuts. Use a chisel or knife to smooth ragged edges of torn bark. Call a professional arborist if needed.

Plant Health Care

Flowers

Powdery Mildew

Spray with chlorothalonil, copper or sulfur to protect new growth. Reduce humidity and increase air circulation. Thin the planting, if needed. Water only in morning. Use resistant varieties.

Columbine Sawfly

Pale green larvae skeletonized this plant in spring and are now pupating in soil. Clean debris. Be alert for larvae next spring and spray with a pyrethroid, carbaryl or soaps.

Rose Slugs (Sawflies)

Slimy larvae skeletonize leaves. A jet spray of water is usually adequate for control. Insecticides (carbaryl, cyfluthrin and soaps) may be used to provide immediate relief to plants.

Daylily Leaf Streak

Trim off infected leaves. Fertilize and irrigate to promote new growth. Avoid overhead irrigation. Clean debris in fall. Consider dividing plants to get more sun and air movement within planting.

Black Spot on Rose

Round, dark spots with feathery margins. Surrounding tissues turn yellow. Remove infected foliage. Avoid overhead watering. Apply fungicides. Grow disease-resistant varieties.

Lawns

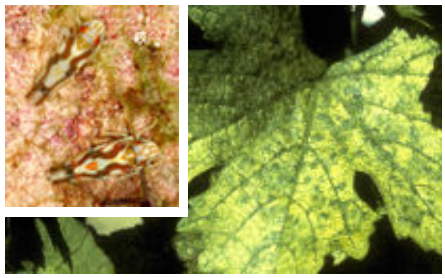
Grubs

Grubs eat roots, creating dead spots. Peel back damaged turf to reveal pests. If more than 3 grubs per square foot, treat with carbaryl or trichlorfon. Irrigate deeply to get chemical in soil.

Rust

Caused by infertile soil, high humidity, evening watering and shade. Get the turf to outgrow it. Fertilize. Irrigate (morning only). Collect clippings, if feasible. Usually goes away in 2 weeks.

Fruits



Leafhoppers on Grape

Small (1/8-inch) wedge-shaped pests pierce and suck juices, creating yellow spots. Leaves may turn brown; in such cases, control pests with carbaryl or a pyrethroid. Keep vineyard floor clean.

Weather Almanac for July 23–July 29, 2018

	TEMPERATURE[1]				RAINFALL[1,4]				GROWING DEGREE DAYS[1,5]			
	July 23–29				July 23–29		2018		July 23–29		2018	
Site	Avg	Norm	Max	Min	Total	Norm	Total	Norm	Total	Norm	Total	Norm
Bottineau	62	69	84	45	0.00	0.49	8.13	9.72	80	114	1387	1204
Bowman	64	71	92	44	0.10	0.44	9.61	8.83	86	126	1304	1201
Carrington	63	70	82	47	0.16	0.64	8.62	10.92	82	126	1506	1313
Crosby	63	68	83	45	0.01	0.51	7.50	8.66	80	108	1355	1099
Dickinson	65	70	87	48	0.26	0.47	9.67	9.71	88	120	1430	1198
Fargo	66	71	83	48	0.27	0.52	9.92	10.72	96	132	1714	1416
Grafton	65	68	83	48	0.09	0.52	10.05	10.05	90	114	1481	1226
Grand Forks	66	69	81	50	0.00	0.62	10.55	10.15	91	115	1574	1260
Hazen	62	72	83	40	0.01	0.46	6.50	9.78	85	126	1437	1343
Hillsboro	65	71	83	48	0.14	0.62	8.97	10.83	89	126	1572	1327
Jamestown	64	71	81	51	0.94	0.61	12.62	10.42	84	126	1469	1302
Langdon	62	66	79	48	0.00	0.62	7.35	10.64	69	102	1316	1036
Mandan	65	71	85	46	0.02	0.69	9.34	10.20	91	128	1522	1283
Minot	64	69	82	48	0.16	0.47	6.10	9.74	83	114	1453	1175
Mott	64	71	91	43	0.08	0.35	7.73	9.17	87	126	1414	1260
Rugby	63	69	83	44	0.11	0.67	8.02	10.80	81	114	1416	1210
Wahpeton	66	72	84	47	0.18	0.60	10.58	11.24	92	134	1664	1472
Watford City	65	71	82	48	0.14	0.43	7.35	8.53	88	126	1428	1225
Williston	65	73	82	49	0.02	0.43	9.08	8.13	93	132	1439	1384
Wishek	63	69	82	48	0.57	0.55	10.71	9.26	80	114	1419	1167

DAYLENGTH (July 30, McClusky, center of ND)[2]

Sunrise: 6:17 AM Daylength: 15h 3m

Sunset: 9:20 PM Change since July 23: –17m

LONG-TERM OUTLOOKS[3]

August 4–8: Temp.: Above Normal; Precip.: Below Normal

August 6–12: 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:
Community Collaborative Rain, Hail and Snow (CoCoRaHs) Network. 2018. https://www.cocorahs.org/

Photos were made available under Creative Commons licenses specified by the photographers. **Page 1:** National Aeronautics and Space Administration, https://pmm.nasa.gov/image-gallery/cocorahs-rain-gauge-after-storm. **Page 2:** Community Collaborative Rain, Hail and Snow (CoCoRaHs) Network; evitaochel via Pixabay. **Page 3:** Dennis van Dyk, https://onvegetables.com/2015/03/26/managing-bacterial-spot-in-ontario-field-tomato-production-time-to-hit-the-refresh-button/; Mark, www.flickr.com/photos/35387910@N04/6011378943/; Don Ferrin, Louisiana State University Agricultural Center, Bugwood.org; Irene Graves, formerly of NDSU; Andreas, www.flickr.com/photos/124330160/771727580/; Whitney Cranshaw, Colorado St. Univ., Bugwood.org; Margrit, www.flickr.com/photos/27126314@N03/3791962615/; jc5083, https://www.flickr.com/photos/jc5083/2880715147/; Yolanda Schmidt, NDSU; Brenda Dobbs https://www.flickr.com/photos/bugldy99/26136971513/; Jaybird, www.flickr.com/photos/jstar/163573872/. **Page 4:** Elizabeth Bush, Virginia Polytechnic Institute and State University, Bugwood.org; Rachel Wald, NDSU; Line Sabroe www.flickr.com/photos/linsepatron/15482176700/; Megan Vig, NDSU; Tom Kalb, NDSU; Lesley Ingram, Bugwood.org; Blue Orchid Blog, www.blueorchidblog.com/causes-and-pictures-of-rose-diseases/; JB, www.flickr.com/photos/ harvardavenue/3517642232/; John Kaminski, www.flickr.com/photos/johnekaminski/8402692568/; Lynette, www.flickr.com/photos/ 25980517@N03/5430688357; Eugene E. Nelson, Bugwood.org.

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