

New Hazelnuts Show Promise

Researchers are developing a group of hazelnuts that will open new opportunities for nut production in North Dakota. These “hybrid hazels” combine the hardiness and disease resistance of our native hazelnuts with the large size and superior flavor of European types. It’s a perfect combination!

European hazelnuts are prized for their flavor. They are used in decadent chocolates, cakes, candies and coffees. Demand for hazelnuts is expected to grow as people become more aware of its health benefits. The nuts are rich in vitamins, protein and heart-healthy fats. Hazelnut oil is almost identical to extra virgin olive oil, one of the healthiest cooking oils.

Hybrid hazels are hardy to at least Zone 4 and show tolerance to marginal soils and drought. The multi-stemmed shrubs grow up to 12 feet high and wide, and are spaced about 4 feet apart in rows (*Fig. 3*). Their growth habit is similar to lilacs. Hazels show promise for use as a home windbreak, living snow fence or as a field crop. At least two shrubs are needed for production.

Hybrid hazels have shown no major insect or disease problems at this time. The most noteworthy pests have been squirrels and crows, who desire the nuts as much as you do. Researchers envision this to be a challenge in urban settings but less so in field production.



Figs. 1–3. Hybrid hazelnuts are bigger and more flavorful than American hazelnuts.

The shrubs start producing in four years and reach their peak after 8 years. Yields of 1–2 pounds per bush can be expected.

The Hybrid Hazelnut Consortium is developing superior varieties and production strategies. Plants and production tips are available online from Badgersett Research Corporation and Riverbend Hazelnuts.

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Japanese Beetle Worries

Bad news: Japanese beetle larvae and pupae were discovered in nursery stock by the North Dakota Department of Agriculture on June 21, 2017.

Really bad news: The infested materials came from the same nursery in Minnesota where 80% of our state's plants come from. An estimated 5,000 beetle-infested plants entered up to 67 nursery facilities in North Dakota since March. Our nurseries are examining their plants for Japanese beetles now, but 95% of plants have already been sold.

It's possible that a new outbreak of Japanese beetles will soon emerge across our state.

Is this a big problem?

It could be. Japanese beetle is one of the most destructive of all insects in yards and gardens. It will attack more than 300 different species of plants. The beetles skeletonize leaves (Fig. 4), and the grubs feed on turf roots. The pest is especially destructive of grape, apple, crabapple, chokecherry, rose, linden and turf.

Japanese beetle causes \$450 million in damage each year in the U.S.A. It entered New Jersey in 1916 and has slowly headed our way over the past century. The pest has been in Minnesota for decades and became abundant in the Twin Cities in 2011. It is established now in South Dakota and has been detected in Montana. The pest has been detected every year in North Dakota since 2012 (Fig. 5), but its numbers remain low.

What can we do?

Get to know this enemy and look for it—especially if you planted any trees or shrubs this spring. The beetles are emerging out of the soil now. Inspect the pots for cocoons.



Fig. 4. Japanese beetle skeletonizing leaf.

Japanese beetle is easy to identify. The shiny pest is one-half-inch long, metallic green and has bronze wing covers (Fig. 4). A series of six white tufts run along each side of its body.

If you find it, contact NDDA at 701.328.2232 or contact your local Extension office.

Kill the pests. If there are only a few beetles, toss them in a bucket of soapy water. For major swarms, many insecticides (carbaryl, bifenthrin, pyrethrin, imidacloprid, permethrin and more) will kill the beetles.

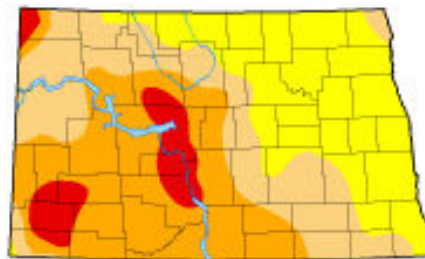


Fig. 5. Japanese beetle survey from 2016.
 ■ Counties positive in 2016
 ■ Counties negative in 2016 but have previous Japanese beetle detections

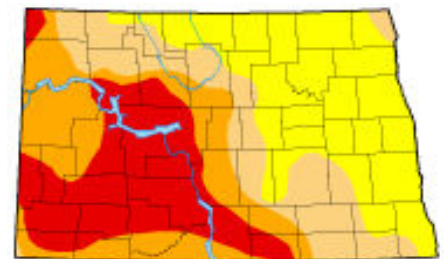
In the past, our greatest defense against Japanese beetle has been our bitter cold winters. Japanese beetles try to overwinter as grubs in the soil, but many freeze to death.

Today, our nurseries are working to prevent future outbreaks, but this is a daunting task. Gardeners need to join the battle. Our shared diligence and brutal winters can slow the spread of this pest. For more info, read online *Integrated Pest Management of Japanese Beetle in North Dakota*.

Drought Watch



June 20, 2017



June 27, 2017

- Moderately dry (crop growth slowed)
- Moderate drought (damage to crops)
- Severe drought (crop losses likely)
- Extreme drought (major crop losses)

Conditions in Central and SW North Dakota have worsened from severe to extreme drought status. Very hot and dry weather in the near future will intensify stresses in yards and gardens.

Chores & Challenges

Warning: A Heat Wave is Coming

Drink plenty of water. Our bodies cool by sweating and we need to replace that lost water. Cool water is best. Avoid soda (causes cramps) and alcohol (causes dehydration).

Dress cool. Wear loose-weave, cotton fabrics that allow the body to breathe while protecting you from the sun. Wear a hat or cap.

Know your limits. Perform strenuous activities during the cool



morning or evening. Take breaks in the shade or an air-conditioned room.



Headaches, rapid heart rates and dizziness are warning signs.

Trees and Shrubs



Galls on Leaves

Bumps were caused by piercing mites or insects. These pests are gone; pesticides are not useful now. Damage is mostly aesthetic. Leaves are functional.



Cottony Maple Scale

Crawling pests are emerging out of cottony egg sacs. Ladybugs and other natural enemies usually control this pest. Insecticidal soap, carbaryl, pyrethrin or summer oils kill crawlers.



Aphids

Leaves curl. Pry open leaf to reveal pests. The excrement is sticky and glistens. The damage to plants is usually minor. Jet spray pests with water. Spray of systemic acephate may be justified for young trees.

Vegetables



Herbicide Injury

Pesticide drift or contaminated manure may cause extreme curling of foliage. Plants will be stunted and vegetables may be contaminated.



Damping Off

Fungi cause stem pinching and collapse. Cucurbits (cucumber, melon and squash) are very sensitive to cool soil temps. Transplants of cucurbits are sensitive to shock and infection.



Phosphorus Deficiency

Purpling of foliage. Most often associated with cool soils and with young plants, especially those with weak or rotted root systems. Feed with foliar fertilizer for most immediate results.

Chores & Challenges

Fruits



Protecting Raspberries from SWD

Did you find maggots in your berries last year? These were caused by spotted wing drosophila (SWD). Now is a good time to monitor for the tiny “fruit” flies.

Get a 32-ounce plastic party cup with lid. Use a hot wire or soldering iron to melt 8–10 entry holes (3/16- to 3/8-inch diam.) into the cup.

A popular bait is a mixture of 1 tbsp of active dry yeast with 4 tbsp of sugar and 12 ounces of water. Pure apple

vinegar is another bait. Add a drop of liquid soap to kill the flies. A sticky yellow card inside can help you see the tiny flies. Place traps in shade suspended on a branch or stake. Change bait weekly. One trap per acre is needed.

Male SWD have spots on their wings. Pesticides (pyrethrin, spinosad) are available. Eat, cook or refrigerate fruit promptly. For more info, go online and read *Integrated Pest Management of Spotted Wing Drosophila in North Dakota*.

Renovate the Berry Patch

Renovate after the last harvest. Develop new rows by using a tiller. Narrow each plant row to a width of 12–15 inches. Row centers are spaced 36–48 inches apart. Clean out remaining weeds.

Fertilize plants with 6 pounds of 10–10–10 or a similar fertilizer per 100 feet of row. These nutrients will be used by plants to form runners and flower buds for next year’s crop.

Mulch the patch in November.

Miscellaneous



Fertilizing in Summer

July 4th is one of the “holiday dates” for fertilizing lawns (Memorial and Labor Days, too). Organic fertilizers will be less likely to burn. Only fertilize if the grass is green and regularly irrigated.



Pear Slugs (Sawflies)

Slimy larvae skeletonize leaves of rose, chokeberry, pear and cherry. A jet spray of water is usually adequate for control. Sprays of pyrethrin, malathion or insecticidal soap are other options.



Hosta Virus X

Leaves show bleeding or blotchy colors, distortion or browning. Often spread by contaminated tools. Remove infected plants. Avoid wounding hostas. Ask nursery if plants are screened for virus.

Weather Almanac for June 26–July 2, 2017

Site	TEMPERATURE				RAINFALL				GROWING DEGREE DAYS ^{1,2}			
	June 26–July 2				Jun 26–Jul 2		2017		Jun 26–Jul 2		2017	
	Avg	Norm	Max	Min	Total	Norm	Total	Norm	Total	Norm	Total	Norm
Bottineau	61	66	81	36	0.04	0.88	2.93	9.29	79	99	698	711
Bowman	66	66	90	39	0.23	0.62	2.70	8.83	98	100	801	660
Carrington	63	68	81	39	0.95	0.86	6.00	9.74	85	109	764	767
Crosby	65	64	82	44	0.00	0.72	2.74	7.59	95	89	771	638
Dickinson	68	66	91	45	0.56	0.78	2.95	9.03	110	97	831	683
Fargo	63	69	78	42	0.49	0.88	4.30	10.92	87	118	855	834
Grafton	62	67	81	42	1.85	0.87	6.03	9.81	80	101	742	732
Grand Forks	63	67	80	44	3.75	0.85	8.58	9.44	85	104	819	748
Hazen	65	68	88	35	0.36	0.75	2.46	9.08	103	106	843	791
Hillsboro	62	68	79	40	1.29	0.87	4.62	10.18	83	111	799	779
Jamestown	62	68	81	41	0.00	0.84	4.56	9.32	82	110	742	751
Langdon	61	64	77	42	0.18	0.89	4.07	9.34	71	87	603	601
Mandan	66	68	89	42	0.40	0.78	2.86	8.75	104	109	844	728
Minot	65	67	86	43	0.17	0.76	2.74	9.66	96	100	760	675
Mott	66	67	92	40	0.23	0.71	2.44	9.34	103	105	806	712
Rugby	64	66	86	41	0.24	0.86	4.31	9.84	91	98	746	722
Wahpeton	62	70	77	40	0.33	0.87	7.04	10.43	80	121	835	882
Watford City	67	66	90	42	0.03	0.73	3.41	7.79	107	99	803	698
Williston	68	69	89	43	0.01	0.65	2.31	7.33	111	112	836	806
Wishek	63	66	84	45	0.00	0.88	2.32	10.86	87	100	752	662

DAYLENGTH (July 2, McClusky, center of ND)³

Sunrise: 5:49 AM Daylength: 15h 53m
 Sunset: 9:42 PM Change since June 26: -4m

LONG-TERM OUTLOOKS⁴

July 9–13: Temp.: Above Normal; Precip.: Below Normal
 July 11–17: Temp.: Above Normal; Precip.: Below Normal

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.

^{2,3,4} Sources: North Dakota Agricultural Weather Network, www.sunrisesunset.com, and National Weather Service, respectively.

Credits

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