

Introducing
The Honeyberry

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The Honeyberry Farm, Bagley, MN
www.honeyberryusa.com
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Outline


1. Intro
2. Growing: Planting, Pruning, Pests
4. Pollination through Harvest
5. Variety Selection
6. The Market
7. Questions?

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What is it?

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Honeysuckle – with edible blue berries!



- Member of the honeysuckle family - *Lonicera caerulea* L.
- Looks like a mutated blueberry with waxy coat called “bloom”

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Taste is...?

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Beyond Wonderful!

– quote from first time taste tester, 2012






- Tastes good – fresh or processed
- “Mystery berry” flavor – combination of blueberry/raspberry/grape?
- Good for you – higher in antioxidants than blueberries

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Processing



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Try some tea!





- * 5-10x more nutrients in leaves than in berries
- * Harvest leaves from sprouting to after harvest (mildew usually appears after harvest)

Effect of *Lonicera caerulea* var. *emphylocalyx* Extracts on Murine *Streptococcus pyogenes* Infection by Modulating Immune System

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Antioxidant Levels of Berries



- ✓ Haskap berry (21,647*)
- ❑ Chokeberry (16,062)
- ❑ Elderberry (14,697)
- ❑ Wild Blueberries (9,621)
- ❑ Cranberry (9,090)
- ❑ Blackberries (5,905)
- ❑ Raspberries (5,065)
- ❑ High Bush Blueberries (4,669)
- ❑ Strawberries (4,302)

* ORAC is the standard test, adopted by the US Dept of Agriculture, to measure the potency of antioxidants in food. Daily requirement is 5,000 units.

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High in Calcium, Phosphorous, Vitamin C


Compounds	Content per 100 g of fresh fruit			
	Haskap	Plum	Grape	Tomato
Water	87.5	90.1	84.4	95.0
Protein	1.1	0.7	0.5	0.7
Fat	3.1	1.6	0.2	0.1
Sugar	3.5	6.5	14.4	3.3
pH	3.4			
Calcium (mg)	59.0	12.0	6.0	9.0
Phosphorus (mg)	48.0	14.0	13.0	18.0
Iron (mg)	0.2	0.6	0.2	0.3
Vitamin C (mg)	65.0	6.0	4.0	20.0

Source: Haskap information page, Kamifurano. <http://hp.town.kamifurano.hokkaido.jp/hp/saguru/151119hasu.htm>

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Characteristics

- USDA zones 1-8
- Doesn't sucker
- Non-invasive
- Grows in most soils
- Size depends on variety (2-10' tall/wide)
- ~50 year lifespan




First honeyberries I tasted in Saskatchewan, Canada, 2010


- Early varieties ripen just prior to strawberries
- Later varieties ripen 2-4 weeks later

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Geographical Distribution



- Native to northern boreal forests in Asia, Europe, and North America.
- Breeding has improved size and taste of berries



Wild Canadian berry



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Planting Guide

Full sun: OK zones 1-5
Partial shade: zones 6-8

Sheltered spot: high winds discourage bees from pollinating, stunt growth, and drop ripe fruit

Soil: pH: 5.5 – 7.5
 Sandy loam to clay

Spacing: 5' between plants, 10-12+' between rows





Waterwheel planter


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Timing

Fall - until freeze-up
Spring - dormant plants as early as ground thaws, through late spring



Dormant one-year-old, 18" tall



← 2-year-old "gallons" - fall planting

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Fertilization & Watering

- Healthy soil with organic matter
- Don't over fertilize with commercial products**
- Some studies indicate better not to fertilize first year*
- Water deeply as needed, let soil dry out in between watering
- Let plants go dormant naturally in fall (ease off watering)




Plants like kitchen scraps and compost tea (soak manure in bucket of water overnight)


*2019 Effects of Soil pH and Fertilizers on Haskap (Lonicera caerulea L.) Vegetative Growth
 **https://specialtycrops.wordpress.com/2019/05/22/fertility-guidelines-for-haskap-growth-in-ontario/

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Weed Control



Wood mulch



Landscape fabric
 (heavy-duty woven material, longterm 10+ years)



Plastic mulch
 (2 year lifespan)

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What happens when you....



Don't ☹ water/weed your honeyberry

OR

Do ☺ water/weed/feed with compost tea/kitchen scraps

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5 year old Tundra pruned to remove low hanging branches

Pruning

- Russian genetics - plants just keep on growing, minimal pruning needed
- Japanese genetics - Remove 25% of the oldest branches at the base annually after 4-5 years to rejuvenate.
- Late fall/winter/early spring
- Pruning lowers the sugar and acidity, increases anthocyanins. (Polish study by Scot & Lipa, *Phytomorphology* 4: 51-54, 2013)
- We like **Infacor** pruners (battery powered)

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Berry Blue™

Aurora

Mildew

- Mildew usually starts in the heat of summer, after harvest.
- Susceptibility varies tremendously between varieties.
- Russian varieties tend to be earlier blooming and more susceptible than the Japanese.
- Some leaf browning is from sun and wind burn.
- Plants bounce back next year

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Before and After - Kawai

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Fungus

“**Phoma stem canker (in pics)** was detected at the crown level. Consider if there are any ways that mechanical wounds could be occurring at this area of the stem; thus creating an entry point for disease.” (U Minn Plant Diagnostic Clinic 2019)

Phytophthora root rot – detected at U of Kentucky Trial 2017

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Pests

Tent caterpillar

- Tent caterpillar, aphids, mites, moths
- Scale insects
- Leaf rollers (Alaska)
- pick worms & squish

SWD - Spotted Wing Drosophila

- foreign fruit fly that lays eggs that hatch quickly in barely ripe fruit much sooner than native fruit flies
- only affects late ripening varieties
- pick fruit asap, close eyes & freeze

Male

Female

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Critters

- Deer graze young plants in the early spring, but usually leave older wood alone.
- Rabbits like the young growth, may eat older woody stems if they're hungry in the winter
- Mice, moles and voles can destroy young plants over winter, might come back from root

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Predators

- Cedar waxwings congregate en masse, along with some local robins
- Birds prefer smaller berries, will bite off ends of big berries
- Foxes, racoons, dogs like the berries. Bet bears do too!

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Drape net away from plants



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Loop It!



- 6' steel posts
- PVC pipe with caps
- Drill hole through caps and loop through galvanized guide wire
- Drape Plantra 17' wide net
- Secure net to ground with landscaping staples

Sindelar Orchard at Cedar Rapids, IA. Loop design Jeff Sindelar, photo credit: Deb Sindelar

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Loop It 2!



- 15', 1/2" pvc slid over electric fence posts (similar to rebar)
- Three strands of 14 gauge electric fencing wire, one on top, one on each side of the hoops of the hoops, attached with zip ties.
- Wires anchored by steel fence posts at each end.
- 17' netting draped and attached with zip ties.
- pvc pipe laid on the bottom of the netting edges to keep it from blowing around, and a few staples to secure them.
- Cut the zip ties when remove netting for winter and leave hoops up.

Erickson Orchard at Bemisji, MN. photo credit: Becky Erickson

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Overhead Net (Oesco SmartNet / Plantra Avigard)



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Pollination



- Bumblebees, honeybees, and even hummingbirds.
- Usually need two different, unrelated honeyberry varieties that bloom at the same time

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Blossoms

- Buds break out in early spring, sometimes before snow melts
- Blossoms withstand freezing down to 20F/-7C
- Most varieties need a week or two for all blossoms to open
- Weather fluctuations may interrupt bloom/pollination, resulting in uneven ripening



Tundra - April 22, 2107
Bagley, MN USDA zone 3



Ice - April 26, 2017

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Blossoms are produced on new shoots off year-old wood

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Green berries grow for three weeks and then...

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Start turning color...

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Within a day berries turn purple, another day dark blue. But wait! Honeyberries need another 2-3 weeks to sweeten and fully mature.

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Later harvest: larger fruit, higher sugar, lower acidity, increased anthocyanins and polyphenols

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Is it ripe enough?

- Refractometer measures soluble solids (sugars) (avg 11-16 brix)

Your taste buds will tell!




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Yields vary depending on pollination, cultivar, and age of plant e.x. Honey Bee planted in 2012



3 ½ lbs in 2016
year 5




9 lbs in 2017
year 6 (max yield)

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Harvest techniques

- Hand picking 3 lbs/hour
- Wack branches - 20 lbs/hr
- Stick or “manure” rake!
- Mechanical “shaker”
- Tarp, drop sheet, paddling pool, etc.
- Remove debris after shaking



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Shakers & Catchers




↑ Reciprocating saw w/ attachment
← Olive harvester ~\$1,000

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Removing the debris

Initially used leaf blower to blow debris out of deep container




Then vintage blueberry cleaning system inspired friend to design....

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Redneck Ver. 1.0
Chute-N-Go

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ver. 2.0 - Collection/Cleaning System



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Varietal Distinctives



Russian

- bloom early
- leaves susceptible to sun scald
- heavy leaf cover
- tubular berries
- tarter berries add depth to jams

Russian/ Kuril/Japanese

- bloom a few days later to 4 weeks later
- heavy leaf cover
- plump oblong berries
- preferred fresh eating

Japanese

- bloom a few weeks later
- leaves are most resilient to sun
- berries more visible
- oval berries
- preferred fresh eating

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Mid-Late Bloomers (U of S)

Japanese/Russian

- **Blizzard**
- **Beast**
- **Beauty**



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Fresh Berries



- U-Pick berries - \$5 lb (3 cups)
- Pre-picked - \$5/pint (2 cups)
- Grocery store - \$5.49-\$6.00/pint



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Early – Russian Berry Blue™ (Czech #17)



- 6-8' tall & wide, upright growth, 12 lb of tubular tart berries, some berries drop

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Late Bloomers (Dr. Thompson)



- Pure Japanese genetics
- Called "haskap" in Japan
- Rounder berries
- Upright growth 4-6'
- Berries ripen 2-4 weeks later than early bloomers
- Less foliage, berries visible
- **Solo™, Maxie™, Kawai, Keiko, Taka, Tana, Willa**



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Frozen Berries



- Tongue River Winery, MT
- Dakota Sun Gardens Winery, ND
- Bemidji Brewery, MN
- Forager Brewery, MN
- Kombucha, WI
- Tinctures, MN
- Restaurants, MN
- Jam makers
- Home use



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Early – Russian/Kuril (U of S) Aurora * Honey Bee * Indigo Gem



- 4-6' tall
- Leaves medium resilient
- Plump berries
- Excellent flavor

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Lidia Delafield

- Berries Unlimited in Arkansas
- Russian and Japanese selections
- Large selection of Early through Late bloomers. e.x.
 - * Blue Stuart (early)
 - * Blue Banana (mid-late)
 - * Strawberry Sensation (very late)



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Bring out the buckets!



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Or boxes!



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Or baskets!



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Or belly!



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It's a Berry Good Day at the Honeyberry Farm!



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Special thanks to our Sponsor

And God said, Let **grass** come up on the earth, and plants producing **seed**, and fruit-trees giving **fruit**, in which is their **seed**, after their **sort**: and **it was so**.

And **grass** came up on the earth, and every **plant** producing **seed** of its **sort**, and every **tree** producing **fruit**, in which is its **seed**, of its **sort**: and God saw that **it was good**. (Gen. 1:11, 12)

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Visit The Honeyberry Farm at Bagley, MN, or online at www.honeyberryusa.com

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