Introducing

The Honeyberry

By Jim & Bernis Ingvaldson
The Honeyberry Farm, Bagley, MN

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What is it?
Honeysuckle – with edible blue berries!

- Member of the honeysuckle family - *Lonicera caerulia* L.
- Looks like a mutated blueberry with waxy coat called “bloom”
Taste is...?
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
Processing

Freeze

Can

Dehydrate

Ferment
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.
### Fruit Comparison Table (per 100g)

<table>
<thead>
<tr>
<th>Fruit</th>
<th>Potassium / Mg</th>
<th>Calcium / Mg</th>
<th>Phosphorous / Mg</th>
<th>Iron / Mg</th>
<th>Vitamin A / ug</th>
<th>Vitamin C / Mg</th>
<th>Vitamin E / mg</th>
<th>Energy Kcal</th>
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<tbody>
<tr>
<td>Haskap</td>
<td>190</td>
<td>38</td>
<td>25</td>
<td>0.6</td>
<td>130</td>
<td>44</td>
<td>1.1</td>
<td>53</td>
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<tr>
<td>Pomegranate</td>
<td>236</td>
<td>10</td>
<td>36</td>
<td>0.6</td>
<td>0</td>
<td>10</td>
<td>0.6</td>
<td>n/a</td>
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<tr>
<td>Blueberry</td>
<td>70</td>
<td>8</td>
<td>9</td>
<td>0.2</td>
<td>55</td>
<td>9</td>
<td>1.7</td>
<td>49</td>
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<tr>
<td>Orange</td>
<td>130</td>
<td>17</td>
<td>12</td>
<td>0.1</td>
<td>60</td>
<td>35</td>
<td>0.4</td>
<td>39</td>
</tr>
<tr>
<td>Grape</td>
<td>130</td>
<td>6</td>
<td>13</td>
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<td>4</td>
<td>0.3</td>
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<td>3</td>
<td>8</td>
<td>0.1</td>
<td>11</td>
<td>3</td>
<td>0.2</td>
<td>50</td>
</tr>
</tbody>
</table>

Revised Standard Tables of food composition in Japan (Resources Council of Science and Technology Edition)

From: [https://haskapalberta.ca/health-benefits/](https://haskapalberta.ca/health-benefits/)
Try some tea or tincture!

* 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
Suitable for home garden, U-Pick or mechanical harvesting on larger scale
Fresh Berries

U-Pick berries - $5 lb (1½ pints)
Pre-picked - $5/pint
Grocery store - $5.49-$6.00/pint
Frozen Berries

- Tongue River Winery, MT
- Dakota Sun Gardens, ND
- Bemidji Brewery, MN
- Forager Brewery, MN
- Kombucha, WI
- Tinctures, MN
- Restaurants, MN
Marketing

U-Pick

- Facebook/Craigslist
- Roadside Signs
- Local paper
- Cable TV/Public TV
- Community Ed classes
- Postcards

Commercial

- Personal contacts
- Food shows

Pick-Your-Own Berries
at Bagley, MN!
Sunday – Friday, 8 a.m. - 6 p.m.

The Honeyberry Farm
218-694-3071
Honeyberries, Saskatoons, Cherries, Raspberries, Currants, Gooseberries, Elderberries, Grapes
www.honeyberryusa.com

U-Pick

Honeyberry Farm
Nursery & U-Pick
www.honeyberryusa.com
The Plant

- USDA zones 1-8
- Grows in most soils, best pH 5.5 – 7.5
- Doesn’t sucker
- Early varieties ripen just prior to strawberries (end of June in zone 3) zones 1-5
- Later varieties ripen 2-4 weeks later, zones 2-8
- ~50 year lifespan

Buds break out in early spring
Tundra - April 22, 2017

April 26, 2017 zone 3
Blossoms are produced on new shoots off year-old wood, withstand 20F/-7C
Pollination

- Bumblebees, honeybees, and even hummingbirds.
- Usually need two different honeyberry varieties.
Green berries grow for three weeks and then...
Start turning color…
Within a day berries turn purple, another day dark blue. But wait!
Honeyberries need another 2-3 weeks to sweeten and fully mature.

Later harvest: larger fruit, higher sugar, lower acidity, increased anthocyanins and polyphenols.
Is it ripe enough?

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

Your taste buds will tell!
Yields vary depending on pollination, cultivar (1-9 lbs) and age of plant

Honey Bee planted in 2012 yielded 9 lbs in 2017 year 6 at Honeyberry Farm

3 ½ lbs in 2016 year 5
Harvest Window

- Most varieties need a week or two for all blossoms to open

- Weather fluctuations may interrupt bloom/pollination, affecting optimal harvest window

- Some varieties hold ripe berries well for over two weeks without excessive dropping or spoilage

- Others drop their ripe berries quickly or berries mold if overly ripe and not enough air flow
Harvest techniques

- Hand picking 3 lbs/hour or…
- Wack branches with hands or stick
- Drop sheet, paddling pool, or cardboard/signboard catcher 15 lbs/hr
Shakers

Reciprocating saw with homemade attachment

Olive harvester

~$1,000
IndigoSuperTech Waxwing Harvester ~$2K USD
Bushes outgrow Waxwing frame
Collection/Cleaning System
Blow away the debris

Initially used leaf blower to remove a lot of debris

Then vintage blueberry cleaning system inspired friend to design....
Redneck Ver. 1.0
Chute-N-Go
Chute-N-Go
Redneck Deluxe Version 2.0

• Signboard is washable
Some commercial operations freeze berries, suction debris later
University of Saskatchewan demonstrates Polish Weremczuk harvester “Joanna”

Aronia Berry Services of NE
IowaDean@absnei.com
Donna@absnei.com
Jagoda JPS
Agromachines
“JAREK5” & OSKAR

JAREK5 “ARONIC” For use with aronia and haskap/honeyberries

$27,190 EUR ($30,360 USD)

N. American distributor: andrew@jagoda.equipment (rosyfarms.com) Alberta, Canada

“It has a lot less fruit drop than the Joanna, works with 10' row spacings, easier to use, works better on a low bush, and costs $7,500 USD less.”

Evaluation based on having travelled to over a dozen orchards to see 3 different levels of Joanna harvesters, and to Washington to see the Oxbo and Littau.

Demo on aronia: https://youtu.be/laA_GWUQ-CI
BSK Air Harvester Serbia

$130,000 - $150,000 USD

http://airharvesters.com/en/
Planting Guide

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

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

Soil:
- pH: 5.5 – 7.5
- Sandy loam to clay

Spacing: 3-5' between plants, 8-12+' between rows

Timing:
Spring - as soon as ground thaws for dormant plants
Fall planting - until freeze-up
Weed Control

Plastic mulch (2 year)
Longterm: landscape fabric

Wood mulch
What happens when you….

Don't 😞 water/weed your honeyberry

OR

Do 😊 water/weed/feed with compost tea/kitchen scraps
UMN Fruit Specialist Annie Klodd at High Tunnel Trial, Mentor, MN
Fertilization

• Healthy soil with organic matter

• Don’t over fertilize with commercial products**

• Some studies indicate better not to fertilize first year*

• Let plants go dormant naturally in fall

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

Pruning

- Remove 25% of the oldest branches at the base annually after 4-5 years.
- Late fall/winter/early spring
- Pruning lowers the sugar and acidity, increases anthocyanins.

(Polish study by Szot & Lipa, Phytomorphology 4: 51–54, 2013)
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.
“Phoma stem canker 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)
Pests

- Tent caterpillar, aphids, mites, moths
- Spotted Wing Drosophila (SWD)
- Rodents and rabbits may chew off young stems.
- Deer graze young plants in the early spring, but leave older wood alone.
Predators

- Birds prefer smaller berries, will bite off ends of big berries
- Foxes, raccoons, dogs like the berries. Bet bears do too!
- Cedar waxwings congregate en masse, along with some local robins
17' draped net from Plantra
(3/4” holes trap birds unless suspended away from bushes)
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
- 15', ½” pvc slid over electric fencer posts (similar to rebar)
  - Three strands of 14 gauge electric fencing wire, one on top, one on each side of the hips 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 Bemidji, MN. photo credit: Becky Erickson
Overhead Net
(Oesco SmartNet / Plantra Avigard)
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
Geographical Distribution

- Native to northern boreal forests in Asia, Europe, and North America.
- Mainly found in low lying, wet areas or high in mountains.
- Breeding has improved size and taste of berries.
Early – Russian
Berry Blue™ (Czech #17)

- 6' tall & wide, upright growth, tubular tart berries, some berries drop
Early – Russian/Kuril (U of S)

Aurora * Honey Bee * Indigo Gem

- 4-6' tall
- Leaves medium resilient
- Plump berries
- Excellent flavor
Late Bloomers (U of S)

Japanese/Russian
- Blizzard
- Beauty
- Beast
Late Bloomers
(Dr. Thompson)

Pure Japanese genetics
• Called “haskap” in Japan
• Rounder berries
• Upright growth 4-5'
• Berries ripen 2-4 weeks later than early bloomers
• Less foliage, berries visible
• Solo™, Maxie™, Kawai, Keiko, Tana
Final Thots

• The berry “sells itself”
• Kids love them!
• Taste good and Good for you!
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)
Visit The Honeyberry Farm at Bagley, MN, or online at www.honeyberryusa.com