

# DRIED ELDER BERRY & FLOWER INGREDIENTS

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*AURI Project w/ USDA Rural Development Grant*

Midwest Elderberry Cooperative

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# Grant Project Administrator: AURI?

- Agricultural Utilization Research Institute ([auri.org](http://auri.org))
- A unique MN partnership between the state legislature, the university system and private industry
- **Mission:** Foster long-term economic benefit for Minnesota through value-added agricultural products.
- The Agricultural Utilization Research Institute (AURI) helps develop new uses for agricultural products through science and technology, partnering with businesses and entrepreneurs to bring ideas to reality.
- With unique facilities and professional staff, AURI is a one-of-a-kind resource that provides assistance to Minnesota businesses looking to create more value for the state's agricultural products.

# Requires a MN Farmer Partner

- Meet Tony Wells
- Regeneration Farms
- Near Faribault, MN
- Produced his first dried flowers last year
- Currently building a commercial kitchen
- Expanding elderberry: Wyldewood, Ranch, Bob Gordon, Johns
- Will dry berries this fall



# Antonio DiMaggio - Herbalist

**Sacred Blossom Farm  
Gilmanton, WI**



**Tony Wells - hand destemming**



# Elderflower Cake

Kensington Palace Twitter

What's all the fuss about?

**Can we have our cake  
and eat it, too?**

Cache with European  
recipe roots and pricing.

Draws demand but puts a  
roof on pricing with a  
capability for high  
volume.

## **Similar Situation:**

Elderberry syrup & the  
flu: a cottage industry.



The confection consists of tiers of lemon sponge cake drizzled with elderflower syrup and topped with an Amalfi lemon curd.

The entire cake is coated with a Swiss meringue buttercream also infused with elderflower (which Ptak has described as “satiny and super delicious”), and is adorned with a mix of 150 fresh flowers, including peonies and roses. (<https://people.com/royals/royal-wedding-prince-harry-meghan-markle-wedding-cake-photo-lemon-elderflower/>)

## Ready for Picking

- Unidentified native cultivar - Hennepin County, MN
- Determinant
- Requires pruning
- **No dew, totally dry**
- **Almost fully open**
- **Go for pollen!**
- Rate of 30 lb./hr.
- Do not compress
- Do not allow flowers to compost during transit



# Destemming Elderflowers: When & How?

1. Dry on stem in paper bags - 80.6°F - 48 hr.
2. Dry continuously w/min stem in cabinet style dryer with racks: wood + fine - mosquito netting
  - 105°F or less
  - 24-36 hr.
3. Destem dried w/screen
4. Quickly bag in plastic and store in cool dark, place
5. Exposure to moisture during drying or packing
  - Yellow/browning
  - Mold
6. Destem when fresh
  - ¼" hardware fabric
  - Terry's Destemmer
7. Dry or pack in pails & freeze



# Elderflower Drying

- Be sure to have field mowed the week before harvest
- Focused harvest of 30lb./hr. @ <40" or less above ground
- After: Remove wayward canes / weeds - maintenance
- Dry 5 lb. of flowers to 20 sf of drying rack of mesh netting
- Low temps 80-105°F for 24-48 hr. - watch
- Important: no moisture once flowers are mostly dry
- Using solar: need a backup heater for nights - consistency
  - 100 sf drying space needs c. 45-pint dehumidifier & fan
- Dry down with min. stem is 6.5:1 - more stem increases ~
- Stored dried flowers in airtight bags > dry, cool, dark place
- Label every bag w/separate lot # to ID product and date

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# Drying and/or Freezing Elderflowers

- Elderflowers are primarily used to make a syrup
- Dried or frozen: both make a syrup, some - herbal teas
- Plan before harvest: Impossible to dry frozen flowers
- Dried flowers are easier to work with, store and ship
- Can freeze whole flowers loosely packed gal. freezer bags
- Can freeze 7 lb. destemmed florets in 4 gal pail
- Paying grower \$1.50-2.50/lb. delivered fresh flowers
- Destemmed value of \$5/lb. frozen
- MEC buys quality dried flowers @ \$20/lb. delivered
- Bulk wholesale is \$26/lb. sustainable & \$28/lb. organic
- Retail is \$9/\$10 org. for 4 oz. plus shipping.

# Belvoir Fruit Farms, Bottesford, UK

- <https://www.belvoirfruitfarms.co.uk/elderflower/picking/> (6/12/18)
- £2.50 / kg paid for wild collected = \$1.53/lb. delivered to processing center
- £50 for 4 hrs work on farm harvesting 20 kg min., no stems
- On farm elder flowers are certified organic
- Valued the same \$1.53/lb. (£1.00 = \$1.35)
- Products
  - Elderflower sodas, lemonade
  - Elderflower & various fruit cordials
  - Alcohol free wine:
    - Shiraz with elderberries, black currants
    - Chardonnay with elderflower and jasmine

# Why Dry my Elderberries?

- Co-packer costs \$21/lb. to process & pack dried berries
- Established market - huge demand for imported dried European flower and berry ingredients.
- People want them, and many want native, not imported.
- Participation in the dried berry market brings recognition and interest in other elder flower & berry products
- Promotes awareness of native elderberry availability
- Uses aged inventory not sold at better margins
- Easier to store dried than frozen
- Creative ingredient beyond syrup: candy, cheese, fruit & nut bars, cereals, vinegars, teas, wine, beer, spirits and kombucha.

# Hobby Scale on-Farm Drying

- AURI test machine
- Multiple trials to optimize quality/time/nutrition
- Owned by MEC
- Regeneration Farms - training & use - chickens?
- Other Specs
  - 16 sf
  - Temps 95-155
  - 7 inch fan



1200W 10 Tray Stainless Steel Digital Food Jerky Fruit Dehydrator with 10 Stainless Steel Shelves Digital Timer - \$200

# Commercial Scale Dehydrator

- Bought used from the parent company of **Flackers Crackers**.
- 700 sf capacity
- Designed for crackers not berries.
- Commercial kitchen inside a humidity controlled trailer
- Raw juice by-product
- West Branch Elderberry



# Dried Elderberry Production Data

- Market pricing determined by major European importers
  - Frontier Coop, Iowa (+/- 100,000 lb./yr.)
  - Starwest Botanicals, Inc. California
- On average 7 lb. of frozen elderberries yield 1 lb. of dried berries (plus raw juice by-product)
- One 25 lb. pail: 3.5 lb. dried berries @12% moisture & 1.25 qt. of raw juice that requires sanitation and immediate freezing
- One pail of frozen elderberries yields: 1.25 qt. of raw juice worth \$12.50/pail or \$3.57/ dried berry lb.
- A frozen 25 lb., 4-gallon pail of elderberries takes 2 days to thaw.
- Dehydrator Temperature: 130°F, for 7-11 hours (Important to not dry less than 12% moisture)
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# Dried Elderberry Production Costs

- Labor & handling per 1 lb.: \$9/lb. / \$31.50/pail (3.5lb. x \$9)
- Grower paid: \$.75/lb. sustain. & \$1.00/lb. org. berries
- Cost/pail: sustainable \$18.75 organic \$25.00
- Bulk Berry Cost per dried lb.: sustain. \$5.36 organic \$7.14
- Total Cost per dried lb.: sustain. \$14.36 organic \$16.14
- MEC overhead: \$1/lb.
- Adjusted Production Cost after raw juice sales offset of \$3.57 /lb. = sustainable \$11.79 organic \$13.57

# MEC Posted Pricing

- **Wholesale to Distributors / Producers**
  - \$15/lb. certified organic
  - \$13/lb. sustainably grown
- **Wholesale to Retailers from distributor**
  - \$18.50/lb. certified organic
  - \$16/lb. sustainably grown
- **MEC Retail Prices Direct / Online**
  - \$21/lb. certified organic, \$8/4 oz.
  - \$18/lb. sustainably grown, \$7/4 oz.

# Dried Berries or Dried Flowers?



Perhaps both?