PNWHBC – 2017
Barley varieties and your home brew

• What is barley?
• What is the barley and beer connection?
• Grow your own barley?
• Make your own malt (next session)

Random tidbits bits of science and technology along the way
What is barley?
What is barley?

*Hordeum vulgare*

domesticated from

*Hordeum spontaneum*
What is this beer?

- 5 gallon batches using The Grain Father
- 10 lbs. Full Pint and 1/8 lb. acidulated malt
- 1 tablespoon gypsum for water conditioning
- Single infusion mash with sac rest at 155 °F for 60 minutes.
- Bittering hop: 1.5 oz. OSU 2003013-002
- Flavor hop last 10 minutes: 1 oz. OSU 2003013-002
- Aroma hop last 0 minutes: 1 oz. OSU 2003013-002
- Imperial Organic Yeast, Joystick
- Primary ferment 7-10 days, Secondary 7 days
- Kegged 5 days before the PNWHC
- Brewed by Evelyn Squire, Heart of the Valley Homebrewers and Corvallis Brewing Supply employee
What is barley?

2-row vs. 6-row – see plants and samples

Naked vs. covered – see plants and samples

Spring vs. winter

Winter is planted. Spring is not (too wet)
Barley and beer?

“The decree known as the Reinheitsgebot, issued in Ingolstadt in 1516, had three aims: to protect drinkers from high prices; to ban the use of wheat in beer so more bread could be made; and to stop unscrupulous brewers from adding dubious toxic and even hallucinogenic ingredients as preservatives or flavourings.”
Barley and Food

2-row and 6-row naked spring
Barley and Beer and Food?

+ Lautering

The hull

Insoluble fiber
Barley and Beer and Food: OSU at your service

**Facultative 2-row covered malting**

**Facultative 2 (6) row multi-use naked**

Plots, malts, and beers

Genes, traits, and germplasm
The OSU Barley Project

Crossing

Doubled haploids

Genetics and Breeding

Knowledge, Variety/Germplasm release

www.barleyworld.org
What is barley?

Spring vs. winter vs. facultative:
What is barley?

Spring vs. winter vs. facultative:

**Spring:**
- Plant in spring and grows normally. Harvest late summer.
- Plant in fall and dies of low temperature injury.

**Winter:**
- Plant in spring and won’t flowers – stays vegetative. No harvest.
- Plant in fall, vernalizes, and grows normally starting in the spring. Harvest mid-summer.
Facultative growth habit
Flexibility!

Fall planting
Cold tolerance
on demand

Spring planting
Cold tolerance
not needed
Facultative 2-row malting barley

American Malting Barley Association
OSU Pilot candidates: all facultative

DH130718: TC6W261/3/LPZ276/Charles//Full Pint
DH120412: TC6W265//Herz 29494/2991
DH130004: TC6W265//Herz 29494/2991
DH120228: Wintmalt/Charles//Full Pint
DH130939: Full Pint/Violetta
Barley contributes to beer flavor

http://barleyworld.org/flavor

Oregon Promise

Golden Promise x Full Pint

The Flavor 7-Pack
Bells, Deschutes, Firestone-Walker New Glarus,
Summit, Russian River, Sierra Nevada

Mecca Grade Estate Malting, Rahr Malting
Is it time for barley to go naked after 10,000 years?

Multi-use naked barley for malt/food/feed: The NIFA-OREI grant
Grow your own barley?
Grow your own barley?

Why should they get all the fun?

Timing is essential to ensure the best crop with high yields is grown. Also around this time, each year Briess sends out packets of raw barley to brewers in states with climates suited for growing so they can have their own "Grow Your Own Barley" experience. These packets are perfect for display planters outside of your brewery or for a small 3' x 3' patch in your garden.

When planting barley, it is best to sow it in early spring as soon as the ground has thawed and is ready to be worked. But you also want to ensure your soil is not over saturated with rain or snow melt, which can hinder the growing process. As a rule of thumb, barley likes dry, loamy soil — this is why it thrives in the arid regions of Wyoming and Montana. The second component to a successful crop is ample sunlight.

The rest is pretty easy, just follow these simple instructions to Grow Your Own Barley.

1. For best results, start by pouring yourselves a beer.
2. Next, prepare a 3-square-foot planting area or large planter with healthy soil.
4. Now evenly spread the seeds on the soil, about one grain per square-inch, and work in until the seeds are covered by one-half to one-inch of soil.
5. Stand back, enjoy your meal, and the rest is up to you.
6. Now have a wonderful summer brewing beer and watching your barley grow.

Be on the lookout in late March for your brewery's packet of raw barley from Briess. We would love you to see your photos of barley, so be sure to share them on Facebook, Twitter and/or Instagram with #BriessGYOB or email them to mercedes.hemmer@Briess.com.
Grow your own barley?

- Plant 1 handful (~ 4 ounces) for 100 square feet. Rows or random
- Harvest 1 – 10 lbs
- Year 1: Treat the barley like you would a tomato in terms of sun, fertility, water
- Year 2: Start pushing the limits on this most resilient crop
Grow your own barley?

- **Harvest**
  - sickle

- **Threshing**
  - Hmmmmm – organize a threshing bee with your local farmer or grains research program/company

- **Cleaning**
  - A mesh sieve, a fan or organize a cleanathon with your local farmer or grains research program/company
What barley to grow?
What barley to grow?

Malting and malting quality parameters

**Barley World malts**

**Hartwick College  CFCFAB malt analyses**

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<th>Friability %</th>
<th>Extract %</th>
<th>Color °SRM</th>
<th>β-glucan mg/L</th>
<th>S/T %</th>
<th>FAN mg/L</th>
<th>DP °L</th>
<th>Alpha Amylase</th>
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Buck naked winter 6-row - taste the malt
Full Pint covered spring 2-row - taste the beer
Copeland covered spring 2-row - the ace of base
What barley to grow?

Why not take a walk on the wilder side?
• Your local brew shop stocks a wonderful palette of malts
• Your malting process can do amazing things with “non-malting” varieties
• Newer varieties may be subject to intellectual property controls
What barley to grow?

Why not take a walk on the wilder side?
• Your local brew shop stocks a wonderful palette of malts
What barley to grow?

Why not take a walk on the wilder side?

- Alternative malting processes can do amazing things with “non-malting” varieties.
What barley to grow?

Why not take a walk on the wilder side?

• Newer varieties may be subject to intellectual property controls

**Plant Variety Protection ....and Beyond**

*The PVP is a federal law designed to promote the developments of new varieties by allowing the variety owner to determine who may sell seed of that particular variety. The law prohibits the sale of any PVP seed, including farmer saved, without the permission of the variety owner. Title V of the Federal Seed Act specifies that PVP protected varieties can be sold by variety name only as a class of certified seed. The PVP law also states that the seller must also give notice that the lot is a PVP variety. Enforcement of the PVP law is left up to the owner of the PVP variety through civil court action.*
What barley to grow?

Why not take a walk on the wilder side?
What barley to grow?

Why not take a walk on the wilder side?
How (Malting)

Steeping
Germination
Kilning

Time (~1 week)
temperature (50° – 350°)
Moisture (10% – 50%)
Malting!!!!
*Seth Klann and Mecca Grade Estate Malt*
Thanks!
The Oregon Barley Project crew – past and present
Joel Rea and Crew for the Full Pint Beers

Brought to you by
Your Oregon tax dollars, Federal grants, American Malting
Barley Association, Brewers Association, Great Western Malting, The Flavor-Pack, Mecca Grade Estate Malt, Oregon Wheat Commission

Rahr Malting