

"Balancing Risks for Growers Exploring New/Old Crops: The Beverage Raw Material Production Educational Experience in Wisconsin (Hops and Malting Barley)"

**Carl Duley; UW-Cooperative Extension
Tim Rehbein; UW-Cooperative Extension**



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extension office*

"Balancing Risks for Growers Exploring New/Old Crops: The Beverage Raw Material Production Educational Experience in Wisconsin (Hops and Malting Barley)"

Why?

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Educational Programs

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Educational Programs

- Training and Investigation for us
- Seminars
- Field Days
- FTD
- Web
- Etc.


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Educational Programs

- Training and Investigation for us
- Examples of each type of program



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Educational Programs Evaluation results compiled

tomorrow


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Hop Production

The background of the slide is a photograph of a hop field. In the foreground, there are rows of hop plants with green, cone-like flowers. A group of people, mostly seen from the back, are walking through the field, looking at the plants. The field is surrounded by tall evergreen trees in the distance under a clear sky.

Can we economically produce hops in Western Wisconsin on a small scale?

How do we address production management issues?

Can we efficiently harvest hops on smaller scale farms?

What quality measures are needed for hops?

Malting Barley

Look for options to large commercial malting structure – local food/beverage

Is it economical?

Is it practical?

An aerial photograph of a wide river with a bridge in the distance. The water is a light brownish-yellow color, and the surrounding land is a mix of green and brown. The text is overlaid on the center of the image.

Malting Barley: Can We Do Small Scale Production and Does it Pay?

Questions Needed to Answer:

- Quality of Barley – 2-row for Craft Industry
 - Can barley compete – other crops?
- DACTP requirements for small malting system(s)
 - Food Product ?

Questions Needed to Answer (con't):

- Where does local barley and local malting fit with the malting plants that currently exist?
- Cost of malting barley (and other grains) on a small scale
 - Labor vs. Capital
 - Price – premiums
 - Business Agreements

History

Wisconsin was a major producer of malting barley

Malt Research Institute was founded in Wisconsin in 1938

Other farm enterprises became more profitable industry moved west and north



Import a lot of malt from Germany

- **Barley is grown in a climate very similar to ours in Wisconsin**
- **Movement for local food and local products**

Malting Systems







Research System
\$300,000

Pilot Malt System
\$750,000











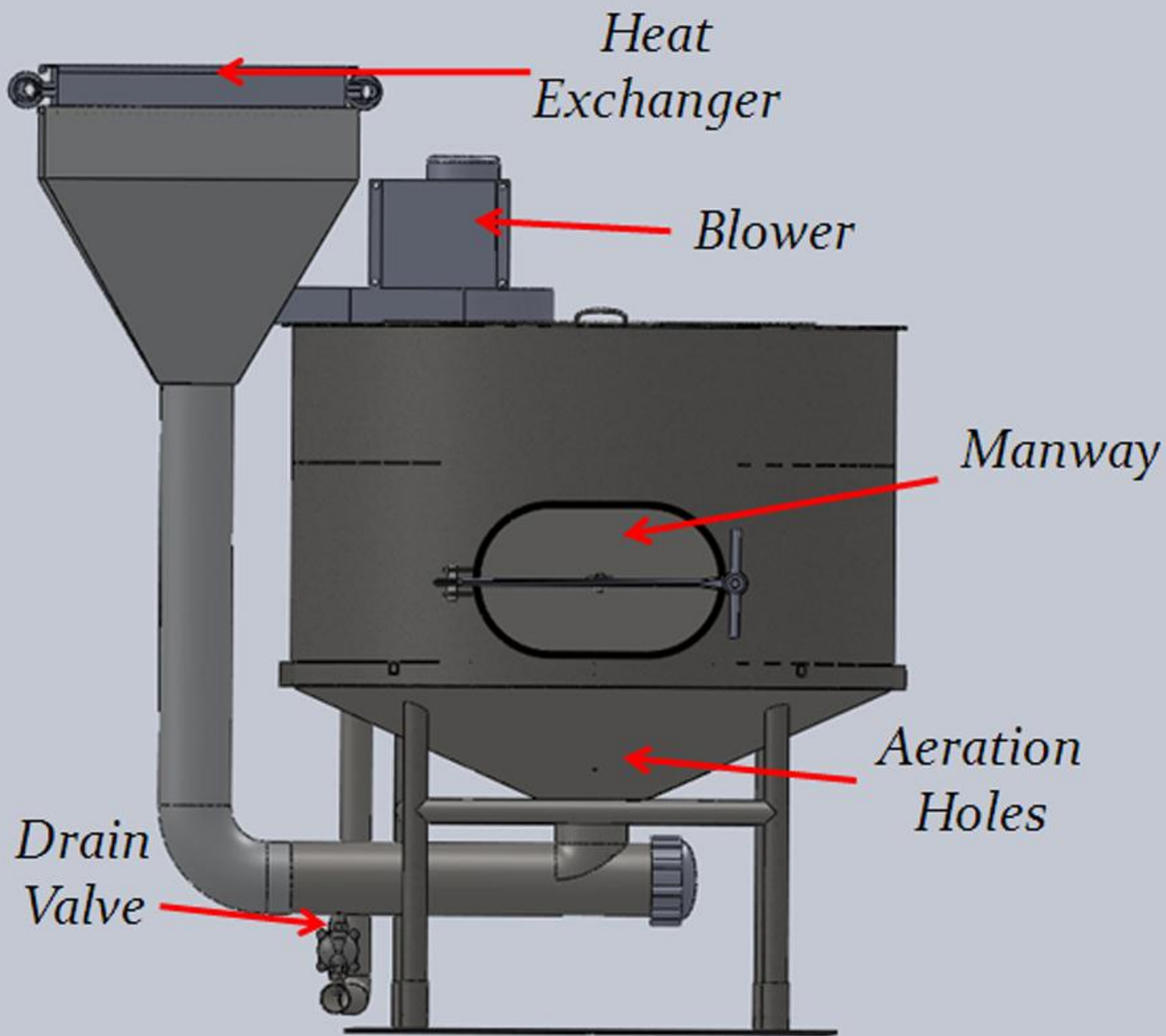


Table top floor malthouse for home brewer



Wisconsin is behind on local Food



Tim or Rick?



Deutsches Hopfenmuseum



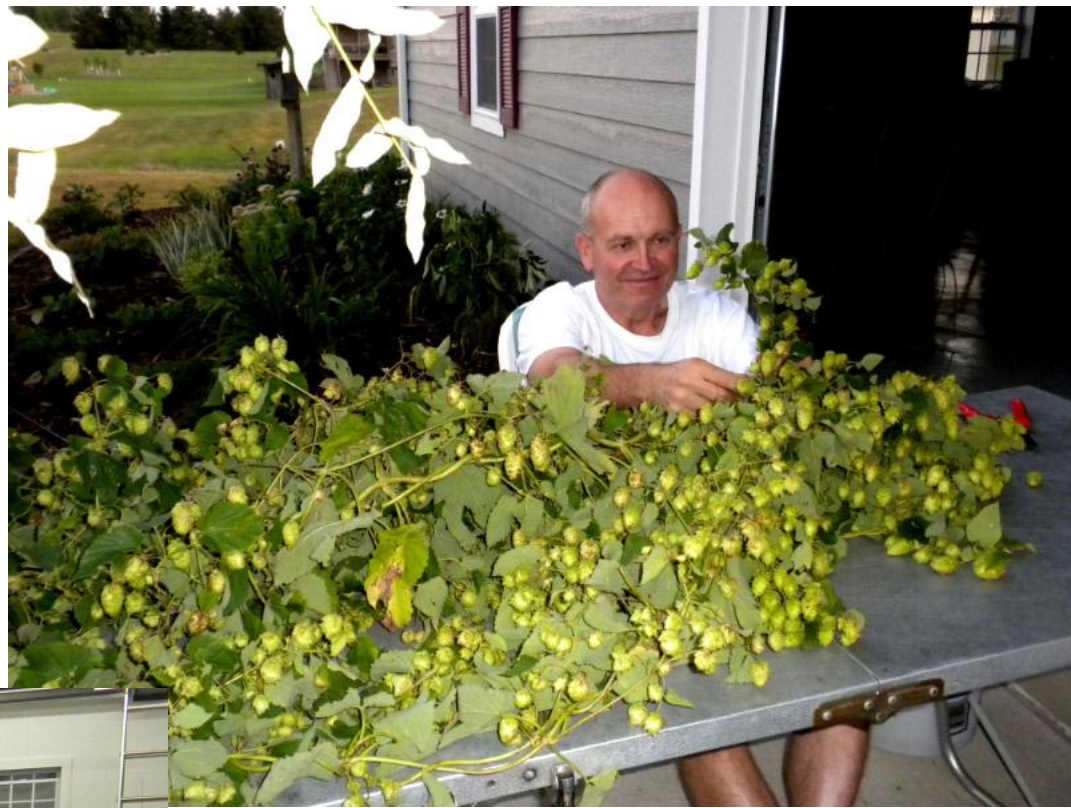
















Vernon County Hop Yard



Bill of materials:

2 - 2 x 4s 10' long or indefinite length (recycled from garage shelter of trailer house)

6- deck screws 2.5 inches long (recycled from deck of trailer house)

1 rusty T post salvaged from a line fence indefinite length of used baler twine from round bales two winters old













Add slide from Wisconsin site



Bayerische Landesanstalt für Landwirtschaft
Institut für Pflanzenbau und Pflanzenzüchtung

Zuchtsorten des Hopfenforschungszentrums Hüll

	Ertrag kg/ha	Qualität			Widerstandsfähigkeit gegenüber					
		Aroma- punkte	α-Säuren (%)	Cohu- lon (%)	Vert- Welke	Pero- nospora	Echtem Mehltau	Spinn- milbe	Blatt- laus	
Haller, Mittelfrüh	1.250	26	3-5	18-28	---	---	+	-	---	
Haller, Tradition	1.850	26	4-7	24-30	+	++	+	-	---	
Spalter Select	1.900	26	3-6	21-27	++	++	+	-	+	
Perle	1.800	24	4-9	29-35	++	++	-	+/-	++	
Saphir	1.750	27	3-5	12-17	++	+/-	-	-	-	
Smaragd	1.850	26	4-6	13-18	+	++	+	+/-	+/-	
Opal	1.850	26	5-8	13-17	+	++	-	+/-	+/-	
Haller, Magnum	2.000	22	11-16	21-29	++	+	+	+/-	+/-	
Haller, Taurus	1.850	22	12-17	20-25	+	+	---	-	---	
Haller, Merkur	2.000	22	10-14	17-22	++	+	++(+)	-	-	
Herkules	2.700	22	12-17	32-38	+	+	+	-	-	

Legende: ++ = sehr gut, + = gut, - = mäßig, --- = nicht getestet, +/- = schwach, - = gering, - - = sehr gering, - - - = ungenügend

Hopfenforschungszentrum Hüll: A. Lutz, H. Ehrmaier, B. Engelhard, E. Seigner

Ma...

1. Ja
2. Ja
- 3.-4. Jahr
- 5.-7. Jahr
- 8.-11. Jahr 7 St...
12. Jahr

IPZ 5c, Hopfenforschungszentrum



Die wichtigsten Hopfenkrankheiten

Peronospora (Falscher Mehltau) *Pseudoperonospora humuli*



Primärinfektion:

Im Hopfenstock überwintertes Myzel wächst in die jungen Hopfentriebe (Bubikopf). Auf der Blattunterseite bilden sich Zoosporangien (Vermehrungsorgane), die über die Luft verbreitet werden.

Dies führt zu

Sekundärinfektion:

Blätter: grauschwarze Pilzrasen auf der Blattunterseite
Dolden: Braunfärbung der Dolden

Integrierte Bekämpfungsverfahren:

- Peronospora-Warndienst
- tolerante Sorten

Echter Mehltau *Podosphaera macularis*

Überwinterung als Dauersporen (Kleistothecien) ober- und Myzel. Ab Mitte Mai werden Sporen entlassen, die Blätter, später auch Blüten und Dolden infizieren.

Blätter: weißer, mehlartiger Belag
Dolden: Weißverfärbung bis hin zur völligen Missbildung, unangenehmer Geruch

Anfälligkeit der Sorten sehr unterschiedlich



21 SPÄTBLÜHE
FELS









Tradition in Germany versus Wisconsin/Midwest



3. JAHR 1327 IST DIE WESTELEN-CHRONIK
IN WARBURG ERVET MAN EIN HERRICH GUT DIE
SEIT 1400 SIND DIE KAVLSIN KOHLSCHEN
ALS RATSFAMILIE IN WARBURG ANSASSIG
AM 31. JANUAR 1721 ERHIEBT JOHAN IOST KAVLSCHEN
FÜR SICH UND SEINE ERBEN DAS BRAURECHT DER STADT
1832 BAUT DO... WARBURG
VND BE... KOHLSCHEN AVSSCHAN
STÄDTER MARKT
1952 ERBAUT... EIN NEUES SUBHAN
1966 VERKERN... H. V. PETER KOHLSCHEN
DIE FAMILIEN... EVNTEN GENERATION
1973 KAVLSCHEN... IT WASSERREICH
MAY 1989... VND BRUNNEN
NEVEN SUB-T
VHLE M VHLK

Lots of Research







UMWELTFREUNDLICHE



Wir zahlen pro Zentner
Euro mehr an die heimische
Wirtschaft als konventionelle
Brauereien. Infos unter
www.fair-zum-bauern.de



e0,33l

4

012852 0012

Mindestens haltbar bis:
(siehe auch Verschluss)

0946..17.04

Add slide of Wisconsin fresh hop beers - MHBC



STIMMZETTEL

No: 872

Ich bevorzuge Bier Nummer:

1

2

3





Lots of Research





LFL

Institut für Pflanzenbau
und Pflanzenzüchtung
Am Gereuth 6

Getreidebau
Gerste
Weizen, Hafer



A group of people are standing in a hop field, looking at the hop plants. The plants are tall and green, with many small hop cones visible. The people are wearing casual clothing, including hats and t-shirts. The background shows a clear blue sky and some trees in the distance. A text box is overlaid on the right side of the image.

**Dr. David Gent; USDA-
ARS Hop Researcher**

Current Acres Planted



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UNIVERSITY OF WISCONSIN - EXTENSION
COOPERATIVE EXTENSION OFFICES IN
BUFFALO COUNTY
AND
VERNON COUNTY

**WISCONSIN
HOPS
&
BARLEY**



Malting Barley -
Options for
Malting Production

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Hop Harvesting
Options



DO YOU WANT TO BE A HOP HARVESTING SPECIALIST?



Wireless Internet
provided by
**Country
wireless**
8584

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AND
VERNON COUNTY

WISCONSIN
HOPS
&
BARLEY



Malting Barley -
Options for
Malting Production

University of Wisconsin
Cooperative Extension
Your county extension office

Carl Biele, Agriculture Agent
Buffalo County - UW Extension
Location:
901 N. Normal Street
PO Box 276
Julesburg, WI 54001-0276
Phone: 800-687-5269
Tim Biele, Agriculture Agent
Vernon County - UW Extension
118 Eastview Drive, Suite 202
Vernon, WI 54482-0192
Phone: 800-687-5276

Hop Harvesting
Options

DO YOU WANT
TO BE ON OUR
HOPS AND/OR
BARLEY
MAILING LIST?

PLEASE SIGN UP
WITH THE FORM
BELOW AND WE
WILL NOTIFY YOU
OF OUR NEXT
MEETING

UW Extension
Hop and Barley
Mailing List Sign-Up
Form
Name _____
Address _____
City _____ State _____ Zip _____
Phone _____
E-mail _____
Signature _____
Date _____



New Audiences to Extension

Ways

- Farm Technology Days
- Statewide Conferences
- Connection with organizations
- Facebook
- Webpage

2013 Survey data – partial sample of growers in
Wisconsin and Minnesota

Currently report 54.9 acres in ground in 5 years,
these same growers plan to have 216 acres in the
ground Assume \$8 per pound and 1000 pounds
per acre

Growth from \$439, 200 to \$1,728,000

Summarize the comments about what are
needed – will be done today

Funded by:

- SARE Mini-Grant
- WACAA
- ANRE
- Carl & Tim



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Thank You

Hop and Barley
Production for the
Questions?
Wisconsin Craft Beer
Industry

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extension office*