**Western Rivers Conservancy /Sierra Nevada Brewing/Oregon State University collaboration on winter malting barley in Gilliam County, Oregon**

Scope of Work

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The Oregon State University Barley Project will have two principal roles:

1. Coordinating production, grain quality testing, and malting of four different winter 2-row malting barleys: 10.0777 (Oregon State University); Calypso (Limagrain); Flavia (Ackerman); and Violetta (Breun/Limagrain).
2. Providing an experiential learning opportunity for a student and key communicator for the project.

Testing of four varieties:

1. Each variety will be grown on ~ 4 acres at the Rattray Ranch (near Condon, Oregon).
2. OSU personnel will periodically visit the field site and be present at harvest.
3. Excellent stand establishment observed: 4/9/2018.
4. OSU will obtain ~500 lbs of grain of each variety for subsequent testing. The balance of the grain from each test strip can be retained for other uses (e.g. commercial small batch malting, sold for feed).
5. OSU will run grain physical quality tests (grain protein, % plump, test weight, % germination, and water sensitivity) on each of the four grain samples after harvest.
   1. Repeated germination tests may be required until dormancy is broken and optimum germination is achieved.
6. Once grain germination is optimum ~ 5 lb samples will be malted in the CLP apparatus. Malts will be sent to the Hartwick Center for Craft Food and Beverage for analysis.
   1. Malting protocols may need to be modified for a subsequent run in the CLP, depending on variety. If new malts are made, they will be sent to Hartwick for analysis.
7. Based on the CLP results, a protocol will be designed for producing ~ 250 lbs of malt of each variety. These malts are intended for pilot brewing at Sierra Nevada. Malts will be submitted for analysis to Hartwick.

Learning and communication:

1. A graduate student (Sarah Windes) student will be the lead on this project. It will constitute a chapter in her MS thesis, with mentoring in barley principles and project management from Patrick Hayes, malting from Scott Fisk, and barley processing from Laura Helgerson.
2. The student will:
   1. Prepare periodic reports that will be distributed to all stakeholders and posted at [www.barleyworld.org](http://www.barleyworld.org).
   2. Conduct site visits to stakeholder sites (e.g. WRC, SNB as resources permit).
   3. Present findings at a minimum of one regional grower meeting and/or one regional brewers meeting.
   4. Be available for other public outreach opportunities.
   5. Prepare a final report made available to all stakeholders.