

Barley

Hordeum vulgare (Poaceae)

Fast Facts:

Acres in Washington: 200,000 acres planted in 2008
Per Acre Value: \$305
Number of Growers: 1500
Value of Production:
In Washington: \$61 million in 2007
Percent of Value of U.S. Production: 6.4%

Description

Of crop:

Barley is one of the top five important grain crops in the U.S. It is also one of the most ancient cultivated grains having been found as far back as 5000 years ago. Barley consistently ranks in the top 25 Washington commodities based on production value. Washington State is ranked fourth in the nation's top six barley producing state. There are over 150 varieties cultivated in the U.S however many are produced only on a minor scale. Barley is a cool-weather cereal grain with low moisture requirements. In Washington, it is produced mainly on dry land farms with only a small amount being grown under irrigation.

In Washington, a grower's variety decision is based on environment, climate and available varieties. Barley is an annual, which can be either a winter or spring annual. Winter barley is planted in the fall since it requires a period of exposure to cold for it to produce flowers and set seeds. Spring varieties do not require exposure to cold to develop seed heads. Almost 95% of the barley grown in Washington is spring barley, which is planted in early April and harvested in late June or August. Winter barley is seeded in September or October and is harvested in late June or August of the following year. Barley varieties can be divided by the number of kernel rows in the head and are classified as either 2-row or 6-row. The 2-row has lower protein content than the 6-row and more fermentable sugars content. The 2-rowed barley has a tough rachis and only the central spikelet develops a fertile flowers and seed. In 6-row varieties all three of the spikelets at each node develop a seed. The barley kernel is generally spindle shaped with commercial varieties ranging from 7 to 12mm. Kernels from the 2-rowed varieties are symmetrical. In 6-rowed the third of the kernels from the central spikelet are symmetrical, but the two-thirds from the lateral spikelets are twisted.

Washington growers often use barley as a rotation crop between other more profitable crops such as wheat. A typical rotation is winter wheat followed by spring barley. In areas of higher rainfall legume crops may

follow spring barley. Spring barley matures early, uses less water than wheat and has a short life cycle. The end use of barley in Washington is primarily as feed for beef and dairy cattle, swine and poultry or for malting in food and beverages. As a feed it is equal in nutritive value to kernel corn. In Washington, 95% of barley is used for feed or export, 4% for malting and less than 1% is used for human consumption. Most barley in Washington is produced for the open market, however some malting barley is grown under contract.

To be used for human consumption, barley must have its fibrous outer hull removed before it can be eaten. Once the hull is removed it is called dehulled barley and is a popular whole grain used as a health food. Barley grains with their hulls still attached are called covered barley. Pearl barley is hulled barley, which has been further processed to remove the bran. Barley can also be used for its straw which is placed in mesh bags and floated in fish ponds to reduce algal growth without harming animals or plants.

Washington has seen declining barley acres planted due to the use of grass weed herbicides on winter wheat that restricts planting back to barley.

Key pests:

Weeds are the major pest problem in barley production. Annual grass weeds include wild oat, Russian thistle, mayweed, lambsquarter, dog fennel, Italian ryegrass, and prickly lettuce. Perennial weeds include Canada thistle, field bindweed and quackgrass. The major disease effecting barley is stripe rust, barley yellow dwarf virus and bare patch. Aphids are the major insect pests of barley in Washington. They can cause direct damage by feeding on plants but mainly they are a concern for the indirect damage they cause through vectoring barley yellow dwarf virus.

Key pesticides:

Wild oats can be control with Far-go and Buckle, thistles, mayweed, and prickly lettuce are controlled with Stinger. Seed treated with Baytan can protect seedlings from early infections of stripe rust. Foliar application of Tilt or Folicur will also control stripe rust. Barley yellow dwarf virus is vectored by aphids and can be controlled with Gaucho. Bare patch is controlled with seed treated with PCNB. Chemical fallow or mechanical tillage can also control the disease. The foliar application of Di-Syston will reduce aphid populations. Insecticides and fungicides are not used extensively for insect control because of the low economic return on barley.

Critical pest Control issues:

Barley growers should use registered or certified seed when possible. Some diseases can be controlled with resistant cultivars. WSU is seeking an international patent protection on Scarlet RZ1, which is a new spring wheat genotype with resistance to Rhizoctonia root rot, a disease found worldwide. Although wheat and barley share many insect and diseases, the chemicals used to control them may differ. Compounds recommended for use on wheat are not always registered on barley. New low cost pest control options are needed for barley.

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Location

Of production:

It is grown in every county in Washington but is concentrated in 5 eastern counties: Lincoln, Adams, Spokane, Garfield and Whitman counties.



Barley

Barley Production in Washington State



