

Variety Selection in Malting Barley

Background

Malting barley is a viable crop for growers in many areas of California. Low water and fertilizer demand make it a sustainable option in many agronomic crop rotations. Market demand for malting barley can depend on a number of factors including: flavor, malting quality, or marketing potential. Various quality parameters may lead to crop rejection by the buyer. In particular, the acceptable range for protein is narrow (9-10.5%). Growers looking to plant malting barley should carefully review the agronomic and quality attributes associated with different varieties.

Key Takeaways

Yield variability

Year-to-year yields can vary a lot in California. UC Variety Trials indicate that it is possible to see a greater difference in yield between the same variety grown in two different seasons than two different varieties grown in the same season (Fig. 1). In other words, the weather patterns will generally determine productivity more so than the variety choice. Because weather patterns in California are highly variable, and some varieties have a wider range of yields than others, choosing varieties with stable performance across multiple years is a good variety selection strategy. UC trial data provides yield performance summaries across multiple years and multiple sites. Varieties that perform better than average in these multi-environment summaries are the most likely to result in stable yield performance from year-to-year. These data can be found for different locations throughout California using the UC Agronomy Research and Information Center (AgRIC) [Small Grains Variety Selection Tool](#).

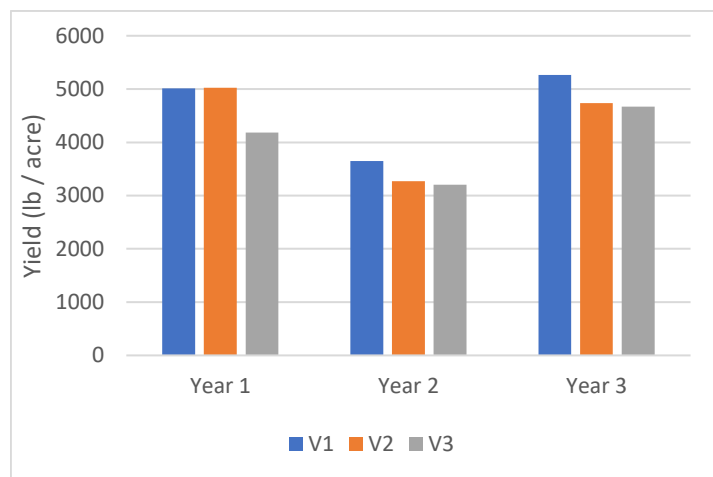


Figure 1. An example of three different malting barley varieties over the course of three years, illustrating the variability across varieties and years. While higher-yielding varieties tend to consistently produce relatively higher yields than other varieties, yields from any particular variety can be quite different from year to year.

Disease and damage susceptibility

Growers should also consider other factors such as physical attributes or disease susceptibility that can reduce yields. Some varieties are more prone to lodging (falling over in the field due to high winds and/or late-season rainfall) or shatter (dropping grain from the seed head prior to harvest). Relative to other small grains, malting barley is generally more susceptible to bird damage and shatter, and should be managed accordingly.

Some varieties are more susceptible to net blotch, barley yellow dwarf virus, or other diseases. Many growers are familiar with the disease patterns on their acreage. If they have planted barley in the past, they might have some idea of common pathogens in their fields. In some cases, fungicidal seed treatments can reduce the risk of infection from seed- or soil-borne pathogens such as smuts and barley stripe. However, some pathogens can only be mitigated through resistant varieties.



Variety resistance information can be found using the UC AgRIC [Small Grains Variety Selection Tool](#). If possible, select varieties that are classified as “R” (Resistant) or at least “MR” (Moderately Resistant). Lodging and shatter ratings are also available on the AgRIC. If contracts require susceptible or otherwise-difficult varieties, growers should discuss pesticide options with buyers, request alternative varieties, or negotiate prices to include the risk of reduced productivity associated with a given variety.

Growth pattern

Because longer or shorter season varieties will react differently to weather events such as late rains, high winds, or drought stress, splitting up the types of varieties being planted may help diversify and spread out risk. Variety information will typically include details on *days to maturity* and *days to heading*, which can help a grower determine a given variety’s growth pattern relative to other varieties. Also, there are variety and planting season differences between the warmer valleys of the state and the cooler Intermountain regions. Knowing the relative growth pattern of a particular variety can help growers anticipate management requirements, spread risk, and determine where barley might be best planted.

Post-harvest quality

Familiarizing oneself with quality aspects that concern the maltsters/ brewers can help growers anticipate risks associated with certain varieties. For example, growers should take time to learn about key quality attributes such as: test weight, kernel size, and protein. With these quality parameters in mind, a grower might favor varieties with high bushel weights, low protein, and larger kernel sizes if malting barley is going to be planted on acreage that is prone to drought stress.

Growing a new crop can be a challenge. Feel free to reach out to your local UCCE Agronomy Advisor with questions or concerns.



Above: Malting barley variety trials at UC Davis

For more on this topic:

- ✓ Website: <http://agric.ucdavis.edu/>
- ✓ [http://smallgrains.ucanr.edu/General Producti on/Malting Barley/](http://smallgrains.ucanr.edu/General_Producti on/Malting_Barley/)

Agronomy Research and Information Center

<http://agric.ucdavis.edu/>



University of California
Cooperative Extension

Author(s): Konrad Mathesius, Taylor Nelsen,
Mark Lundy
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