



## Husbandry Guidelines

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Data used in this publication is taken from the HGCA recommended list 2007, consult the full list at [www.hgca.com](http://www.hgca.com)

Whilst every care is taken to produce reliable and accurate guidelines, no liability can be accepted for any use made of this information.

The Oxbridge logo features the word 'oxbridge' in a white, serif font with a green swoosh above it. Below the main text, 'SPRING MALTING BARLEY' is written in a smaller, white, sans-serif font.

# Introduction

Oxbridge is a high yielding, high quality spring barley with full IBD approval for distilling use. It has a unique combination of characteristics that match the requirements of growers and end users involved in the important malt whisky production chain.

Growers can expect high yields and consistent achievement of malting premium as Oxbridge samples are generally low screenings and low grain nitrogen. Oxbridge should be an easy variety to manage on farm as much of the local husbandry developed with Optic remains appropriate, although targeting fungicide inputs may help to reduce costs. Oxbridge is significantly higher-yielding than Optic with larger grain size.



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## Market Potential

Oxbridge should be targeted at the malt distilling market - more than two-thirds of the purchased Scottish malting barley is for this use. Distillers are increasingly looking for barley that produces very low levels of Glycosidic Nitrile (G.N.). This characteristic is determined genetically, and Oxbridge has been carefully selected to meet this requirement, without compromising performance in other areas.

Although seasonal fluctuations in the world supply of malting barley can affect the pattern of demand, purchases meeting the specification for malt distilling have once again become dominant in recent years.

With ever-increasing exports of Scotch whisky, this market will remain the most secure outlet for Scottish spring barley growers.

**Table 1. SAC RECOMMENDED CEREALS 2006 - Distilling varieties**

	Yield	Maturity cf average	Mildew 1-9	Rhyncho 1-9	Brackling 1-9	Green Leaf retention
<b>Oxbridge</b>	105	0	7	7	8	Good
Cocktail	104	0	7	5	7	Poor
Optic	99	+1	5	4	5	Moderate

## Growing Oxbridge on farm - about these guidelines

It is not practical to produce universally applicable guidelines for spring barley husbandry, particularly when growers are targeting a low nitrogen malt distilling specification. These guidelines take the view that growers who have had success with Optic over many years - and honed their husbandry accordingly - require information about how growing Oxbridge will differ in ways that can affect profitability. These guidelines are based on data from HGCA Recommended List trials series, plus trials work conducted by Scottish Agronomy and Scottish Agricultural Colleges to provide comparative performance data against both Optic and Cocktail. When sown at identical seed rates and sowing dates, Oxbridge has the best combination of yield, grain size and grain nitrogen.

**In broad terms it is recommended that farmers growing Oxbridge for the first time should not make significant changes to either seed rate or fertiliser rates until they have more experience of the variety on their particular farm.**

However, Oxbridge has superior disease resistance and green leaf retention so inputs can be more targeted.

## Sowing date and choice of site

Oxbridge is earlier-maturing than Optic in HGCA trials. These trials receive a very comprehensive fungicide programme. Oxbridge has superior green leaf retention and disease resistance to other distilling varieties. Oxbridge is therefore less likely to succumb to late season leaf spotting or disease and the resulting premature finishing. Under the level of inputs normally used on farm the date of harvest should be similar to Optic when sowing dates are identical. Because early sowing is important in consistently achieving low grain nitrogen, growers are advised not to plan to delay Oxbridge sowing on the basis of its earlier maturity.

**Any land that has successfully produced low nitrogen Optic or Cocktail should be suitable for Oxbridge - there is no evidence to suggest that Oxbridge's performance advantage is reduced on a specific soil type.**



Oxbridge plot and Nick Wallace



Photo used with the kind permission of Simba International

## Seed rate

Oxbridge is a normal tillering variety, and seed rate manipulation is not required to control either grain nitrogen or screenings. In general, Oxbridge has produced thousand grain weights similar to Optic.

**It is important that thousand grain weight is taken into account when calculating a seed rate for Oxbridge to ensure the correct plant population is established.**

Seed rate will also depend on soil conditions at the time of drilling and should be adjusted to reflect potential losses during establishment.

In the majority of cases in Scotland the aim should be to establish 325 plants/m<sup>2</sup>. The seed rate required can be calculated from:

$$\text{Seed rate (kgs/ha)} = \frac{\text{Target plant population (plants/m}^2\text{)} \times \text{Thousand grain weight (gms)}}{\text{Expected Establishment \%}}$$

In a good seedbed, between 85% (early sown) to 95% (late sown) establishment is typical. In a poor seedbed, establishment can vary from 55% (early)

to 70% (late). A late spring drought may reduce establishment further. (HGCA Barley Growth Guide 2005/6)

## Nitrogen application

Independent husbandry trials plus HGCA data show that Oxbridge generally achieves lower grain nitrogen levels than Optic under the same inputs. This suggests that it may be possible to increase fertiliser rates on Oxbridge with the resulting benefit of extra yield. However, growers should be cautious about increasing fertiliser applications on this basis until they have had experience

with Oxbridge on their farm. This will help to ensure the security of the malting premium by achieving grain nitrogen specification. In trials, the yield advantage of Oxbridge over Optic is achieved at identical fertiliser inputs.

**It is recommended that growers with successful experience of Optic should use the same general timings and rates of application on Oxbridge until they have experience on their particular farm.**

## Disease resistance

Resistance to:	Oxbridge	Optic	Cocktail
Mildew	7	5	7
Yellow Rust	4	9	4
Brown Rust	6	5	6
<i>Rhynchosporium</i>	7	4	5

Source: HGCA Recommended List 2007

Photo used with the kind permission of Simon Oxley, SAC



Oxbridge has a good combination of resistance to mildew and *Rhynchosporium*, the two barley diseases that can cause major yield losses. In Scottish trials it has shown a good level of resistance to abiotic leaf spotting with associated green leaf area retention, and moderately good resistance to *Ramularia*.

## Fungicide use

Oxbridge's inherently good resistance to the major spring barley diseases provides an opportunity to adopt a managed strategy to disease control and keep fungicide costs down. The following approach is suggested:

**Early spring:** Oxbridge is unlikely to require a T<sub>0</sub> fungicide application unless active disease is spreading onto new growth. In this case a cheap mixture such as fenpropimorph + chlorothalonil may be necessary.

**GS 25-30:** A fungicide applied at this time will protect the crop as the canopy rapidly expands. Mixtures based on a strobilurin (e.g. Acanto, Twist or Vivid) and a triazole (e.g. Opus or Proline) or cyprodinil will provide broad spectrum disease control, with the triazole mix being more appropriate if disease is established. In low disease situations, a triazole + chlorothalonil mix would provide a cheaper alternative.

Adding a morpholine would improve curative activity on mildew and *Rhynchosporium*, if required.

**GS 39-45:** A second fungicide will provide protection against late disease infection, leaf spotting and help prolong green leaf area and encourage good grain fill. A triazole (e.g. Opus or Proline) + chlorothalonil + strobilurin (e.g. Amistar) mix would be appropriate for this timing.

## Harvesting

Although Oxbridge is a relatively early-maturing variety with good resistance to lodging and brackling, it should be harvested as soon as the moisture content is suitable, to help preserve grain quality. Oxbridge should be stored separately from other varieties to prevent contamination and ensure the maximum premium is obtained.

## Summary

Oxbridge is a high yielding, high quality spring barley with full IBD approval for distilling use.

Growers who have successfully produced low nitrogen Optic or Cocktail should be able to grow Oxbridge without any significant changes in agronomy.

Oxbridge's inherently good resistance to the major spring barley diseases provides an opportunity to keep fungicide costs down.

Nitrogen rates and timing for Oxbridge should be similar to those used for Optic, assuming these have produced acceptable grain samples.

Grain quality can be preserved by prompt harvesting and storing Oxbridge separately from other varieties.