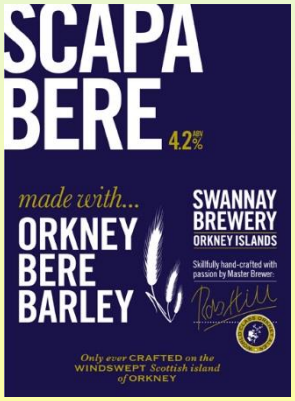
Helping The Conservation Of Orkney Bere By Developing New Markets



John Wishart and Peter Martin

Agronomy Institute, Orkney College UHI

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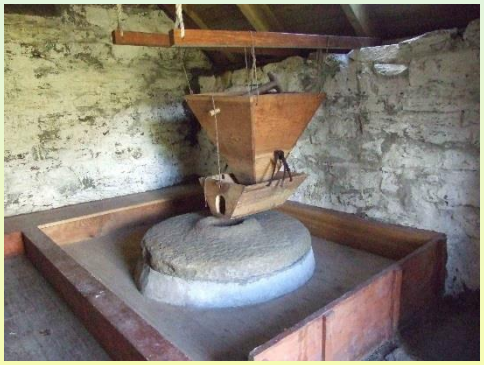
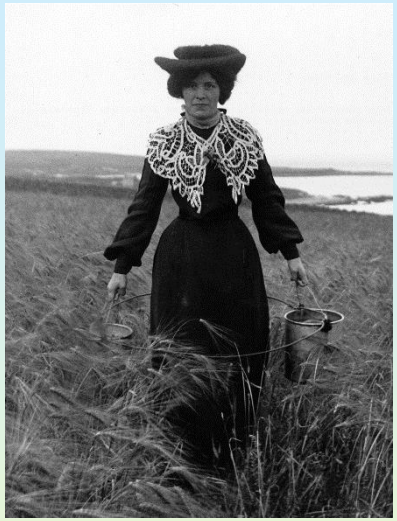
Bere – Historical Background



- Ancient type of Scottish 6-row barley (landrace).
  - Like most landraces, it has long straw and is very susceptible to lodging
- Origins uncertain but cultivated in Orkney for at least 1000 years
- Well-suited to N Scotland:
  - Early maturing / short growing season;
  - Tolerant of poor soils; low inputs
- Traditionally, a multi-use crop:
  - Milling (beremeal)
  - Malting (beer and later whisky)
  - Feed
  - Straw for animal bedding and thatching
- A staple (with oats) in parts of the Highlands & Islands until early 20th C
  - Gradually replaced by higher yielding modern varieties

Need For Conservation / Opportunities For New Products



- In 1912, c. 1,590 ha Bere grown in Orkney. By 2002, only c. 4 ha grown.
  - **Conserved because of the local market for beremeal.**
- Elsewhere in Scotland, Bere is only grown in Shetland & W. Isles.
- As a valuable heritage and genetic resource, conservation of Bere in cultivation is important.
- AI recognised that conservation would be most effectively achieved by developing new markets.
- Considering historical use of Bere, two possible new markets were especially attractive:
  - **Brewing**
  - **Distilling for whisky**

Bere For Brewing

- With Leader + funding, the AI started collaborating with Valhalla Brewery in Shetland in 2005. A beer, Island Bere, was released in 2006
  - Still a core product of the brewery.
- Successful test brewing with Bere has also been done by Orkney's Swannay Brewery
- For breweries, the main disadvantages of using Bere are:
  - **Its low extract compared with modern varieties – ca. 20% more Bere malt needed.**
  - **High additional costs of sending the grain away for malting**
- But, it has a unique taste, is well-adapted to local growing and has a traditional brewing link with the Northern Isles.

Bere For Distilling

- **Distilling industry hesitant about using Bere:**
  - Not a recommended malting barley variety - uncertainty about its malting & distilling qualities
  - Small quantities not easy to deal with and expensive to process
- **In 2004 AI obtained Leader + funding for a feasibility project with Isle of Arran Distillers:**
  - 19 t Bere sent to Bairds in Inverness and successfully malted
  - Distilled at Lochranza on Arran in 2004
  - Matured in Bourbon casks:
    - Thought to be quicker maturing than spirit from modern varieties
  - Two successful limited edition releases:
    - An 8-year old single malt in Dec 2012.(6,000 bottles)
    - A 10-year-old release in 2014 (5,000 bottles).
- **Collaboration with Arran provided a one-off demonstration of the feasibility of using Bere, But, for conservation Bere needed a long-term commitment.**

Collaboration With Bruichladdich Distillery

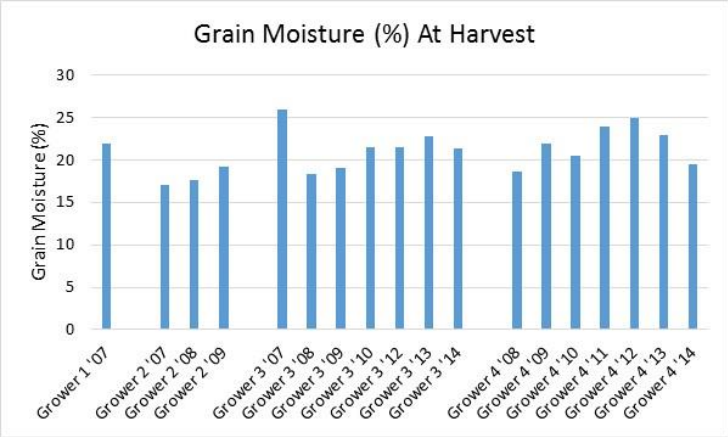
- Bruichladdich Distillery:
  - An Islay distillery producing artisanal single malt whiskies.
  - Places a special emphasis on barley provenance.
  - Recognised that using Bere for whisky production would result in a totally unique product
- With AI assistance, Bere was grown on Islay in 2005 and 2006:
  - New-make spirit very impressive.
  - But grain quantities insufficient
- Bruichladdich asked AI to develop an Orkney supply chain producing Bere for the distillery from 2007:
  - AI and 2-3 growers
  - Aim to produce about 45 t of Bere annually (1 batch of malt)
- Supply chain – co-ordinated and managed by AI
  - AI provides seed to growers and buys back crop.
  - AI dries and stores grain until needed
  - Bere malted in Inverness on transit to distillery

Supply Chain Considerations

- **Grain Supply Contract.** Realistic, recognises that Bere is not a modern malting barley variety:
  - No penalties for grain nitrogen > 1.65%
  - No penalties for small grain (high screenings)
- **Grower Production Strategies**
  - Mixed, but most use low levels of inputs or more marginal land to reduce production costs.
  - Low levels of nitrogen are required to reduce lodging
  - One grower investigating straw shortener with higher levels of nitrogen
- **Production of seed** needs to be built into the growing programme. Reserves also needed in case of crop failures.

- **Supply Chain Challenges**
  - For growers – low yields (2.6-3.5 t/ha) and crop lodging
  - Grain drying. Difficult in wet harvests. With few harvesting opportunities, farmers may need to harvest at high moistures. Can result in lengthy drying. With only one 10-t batch dryer, drying can be difficult. Helped if harvesting spread over several weeks.

Supply Chain Performance



- Quantity Of Grain Supplied:
  - 2007 to 2014: 44-70 t per year (av. 59 t).
  - 2015- ……?
- Grain moisture at harvest: very variable (17-26%)
- Rejected Crop
  - From 2007 to 2014, only the crop from one field could not be purchased as it had started germinating in the ear.
- Area of Bere Grown Annually:
  - 2007 to 2014: c 25 ha
  - 2015: c. 45 ha
- Release of Bere whiskies
  - 2014 – Release of first Bruichladdich single malt made from 2007 crop of Orkney-grown Bere (Bere Barley 2008)
  - Further annual releases will follow as each vintage matures

2015 Bere Harvest

Benefits From The Bere Supply Chain

- Produces a unique, high-value product for the distillery because of
  - **Bere**
  - **Marketing benefits of a joint Orkney & Islay product.**
- Provides income for Orkney growers and contractors
- Has strengthened the conservation of Bere:
  - **(Area grown, seed stocks)**
  - **Raised profile of Bere nationally and internationally**
- Demonstrates that landraces still have commercial relevance in 21st C.
- Provides a model for conservation of other landraces.