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
  - 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.