



Varieties and the Marketplace

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Introduction



◆ **Spring barley**

- Malting requirements
- Grain characteristics
- Variety choice

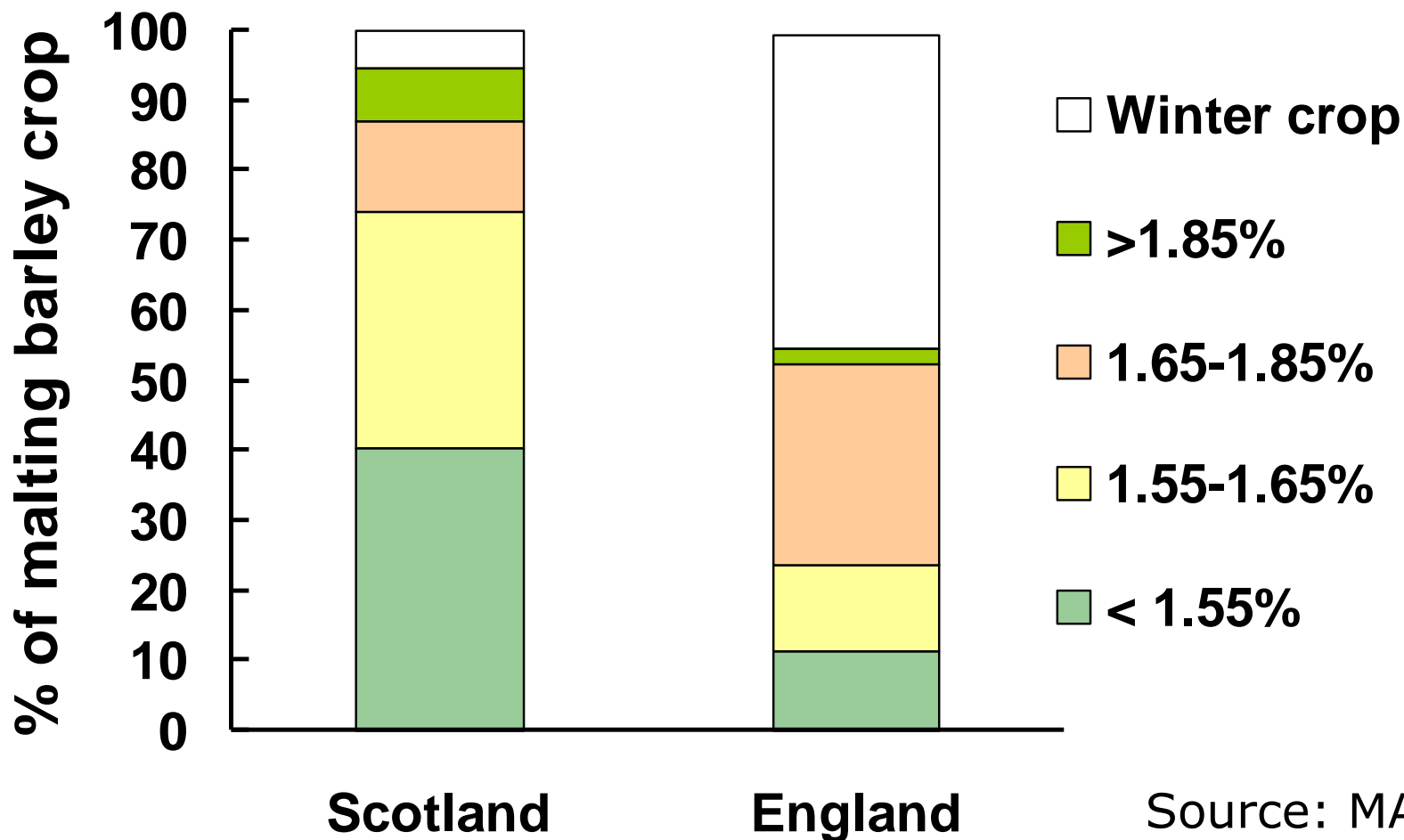
◆ **Winter wheat**

- nabim Groups
- Distilling
- Export milling wheat brands

Maltsters' nitrogen *wish-list* - from Harvest 2005

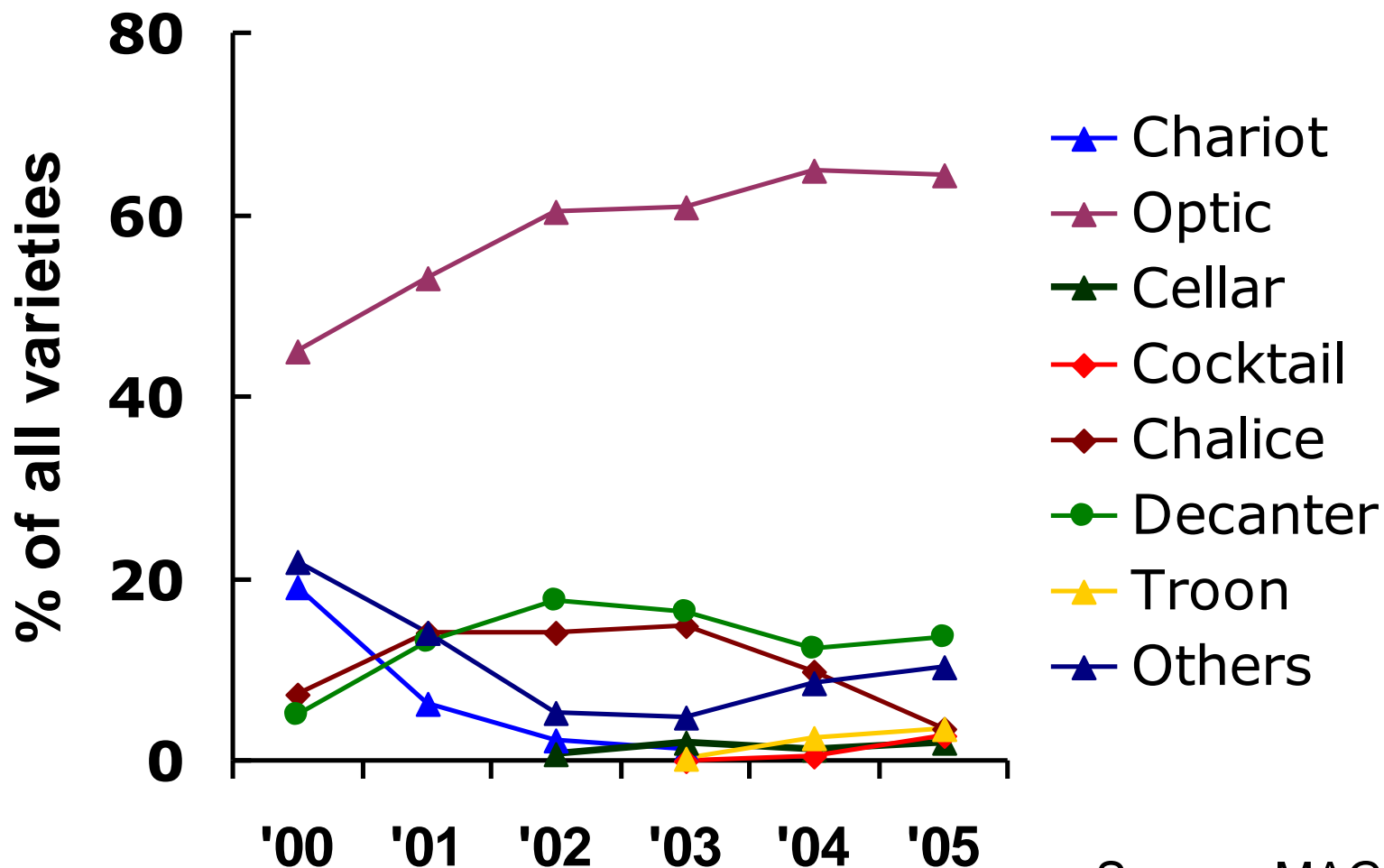


Requirements based on nitrogen bands



Source: MAGB

Varieties used by maltsters - *from Scottish crop*



Source: MAGB

Malt distilling

- ◆ Low grain nitrogen %
- ◆ High predicted spirit Yield
- ◆ High level of modification
- ◆ Low screenings
- ◆ Low GN

Grain distilling



- ◆ High grain nitrogen %
- ◆ High enzyme levels (DP and DU)
- ◆ Tendancy for high extract
- ◆ Low GN

Brewing

- ◆ High malt extract
- ◆ High level of modification
- ◆ High soluble nitrogen ratio
- ◆ High ease of filtration

What are GNs?



- ◆ Many plant species produce GNs
- ◆ Roles in plant defence and nitrogen storage?
- ◆ Precursor of breakdown products during malt distilling

New varieties and GN



- ◆ Distilling industry favours varieties that are low GN producers and, in the longer term, GN non-producers
- ◆ How varieties are defined:
 - ◆ Classic Low (e.g. Oxbridge)
 - ◆ Low GN producers (e.g. Optic)
 - ◆ Significant GN producers

Optic (Yield = 99)



- ◆ High spirit yield, low grain N%, good malt yield. Recognised outside of UK. A low GN producer.
- ◆ Vulnerable to both mildew (5) and *Rhynchosporium* (4). Very low untreated yield. Low TGW and moderate to high screenings.

Decanter (Yield = 97)



- ◆ Malt and grain distilling. Moderate spirit yield, moderate malt yield. Grown for both high and low grain N% markets. Classic low GN.
- ◆ High screenings risk. Mildew (9) and *Rhynchosporium* (5). Lodging (9). Good resistance to brackling (8)

Cocktail (Yield = 104)



- ◆ Good malt yield. Low grain N%. Rising market share in England. Used for brewing and distilling. A low GN producer.
- ◆ Higher screenings risk than Optic. Mildew (7), *Rhynchosporium* (5). Very good lodging resistance (9). High resistance to brackling (9)

Troon (Yield = 100)



- ◆ High spirit yield, high malt yield. For malt distilling market. Rising market share. Low screenings risk (bold grain). Moderate grain N%. Classic low GN.
- ◆ Mildew (9) and *Rhynchosporium* (4). Lodging (8).

Varieties under IoB testing for malting *[current CEL position]*



- ◆ **Oxbridge** (Distilling) *[P2]*
- ◆ **Westminster** (Brewing) *[P2]*
- ◆ **NFC Tipple** (Brewing) *[P2]*
- ◆ **Appaloosa** (Distilling) *[P1]*

Oxbridge (Yield = 105)



- ◆ Malt yield just above Cellar. Lowish grain N%. A malt distilling variety. High specific weight, and low screenings risk. Classic low GN.
- ◆ Relatively poor against mildew (7) and good against *Rhynchosporium* (7). Stiffer straw than Optic, and better against brackling (8)

Westminster (Yield = 105)



- ◆ Very high malt yield. Moderate grain N%. A brewing variety. Good specific weight and low screenings risk.
- ◆ Excellent ratings against mildew (9) and *Rhynchosporium* (8). Tallest of the SB varieties (84 cm). Not as stiff as Cocktail or NFC Tipple. Moderate resistance to brackling (7)

NFC Tipple (Yield = 107)



- ◆ Malt yield just above Optic. Low grain N%. A brewing variety. Lowish specific weight, and moderate screenings risk.
- ◆ Excellent ratings against mildew (9) and brown rust (8), though weak for *Rhynchosporium* (4). Shortest malting variety. Stiff straw and good brackling resistance (8)

Appaloosa (yield = 109)

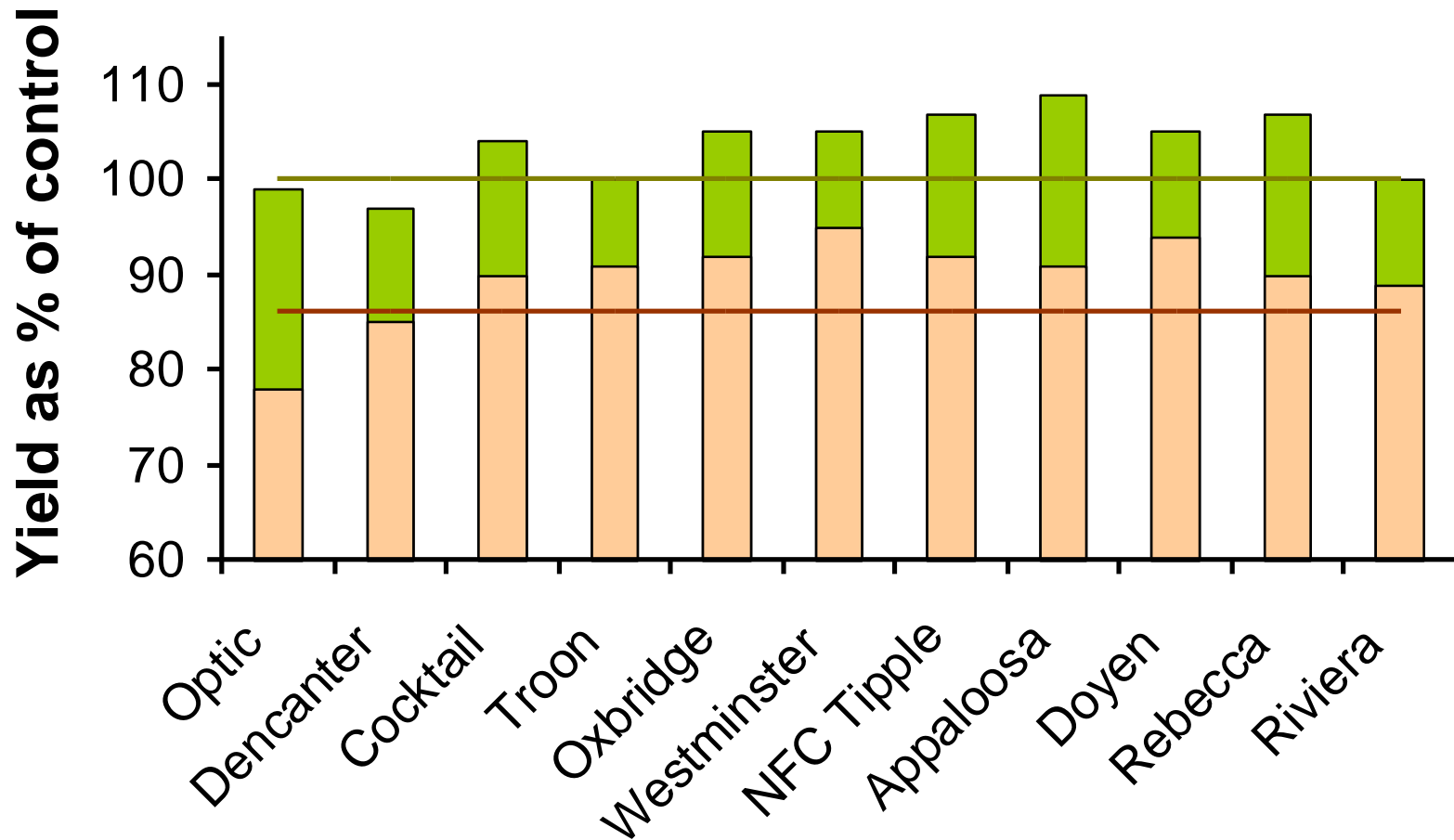


- ◆ Potential for malt distilling. Classic low GN. Similar low grain N% to Optic and Cocktail. Above average for screenings.
- ◆ Mildew (8), weak for *Rhynchosporium* (4). Similar height to Optic, but stiffer straw (9). Maturity same as Optic. Good against brackling (8).

Protecting quality - *malting quality and grain filling*

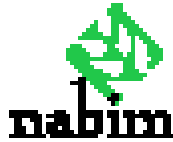


■ Yield (treated) ■ Yield (untreated)



Winter wheat

- ◆ nabim Groups



- ◆ Distilling wheats
- ◆ Export milling wheat brands

nabim Groups



◆ Group 1

- likely to gain a full premium from all millers if 13% protein, 250 Hagberg and other specifications are met.

◆ Group 2

- varieties that exhibit breadmaking potential
- some are consistent, some perform inconsistently
- others are suited to specialist flours

◆ Group 3

- soft varieties for biscuit, cake and other flours
- others are suited to specialist flours

◆ Group 4

- unlikely to attract milling premium

Distilling wheats



- ◆ Work with the Scotch Whisky Association to test new varieties
- ◆ Preferred varieties shown on the RL
- ◆ Soft-milling preferred
- ◆ Group 3 and some Group 4

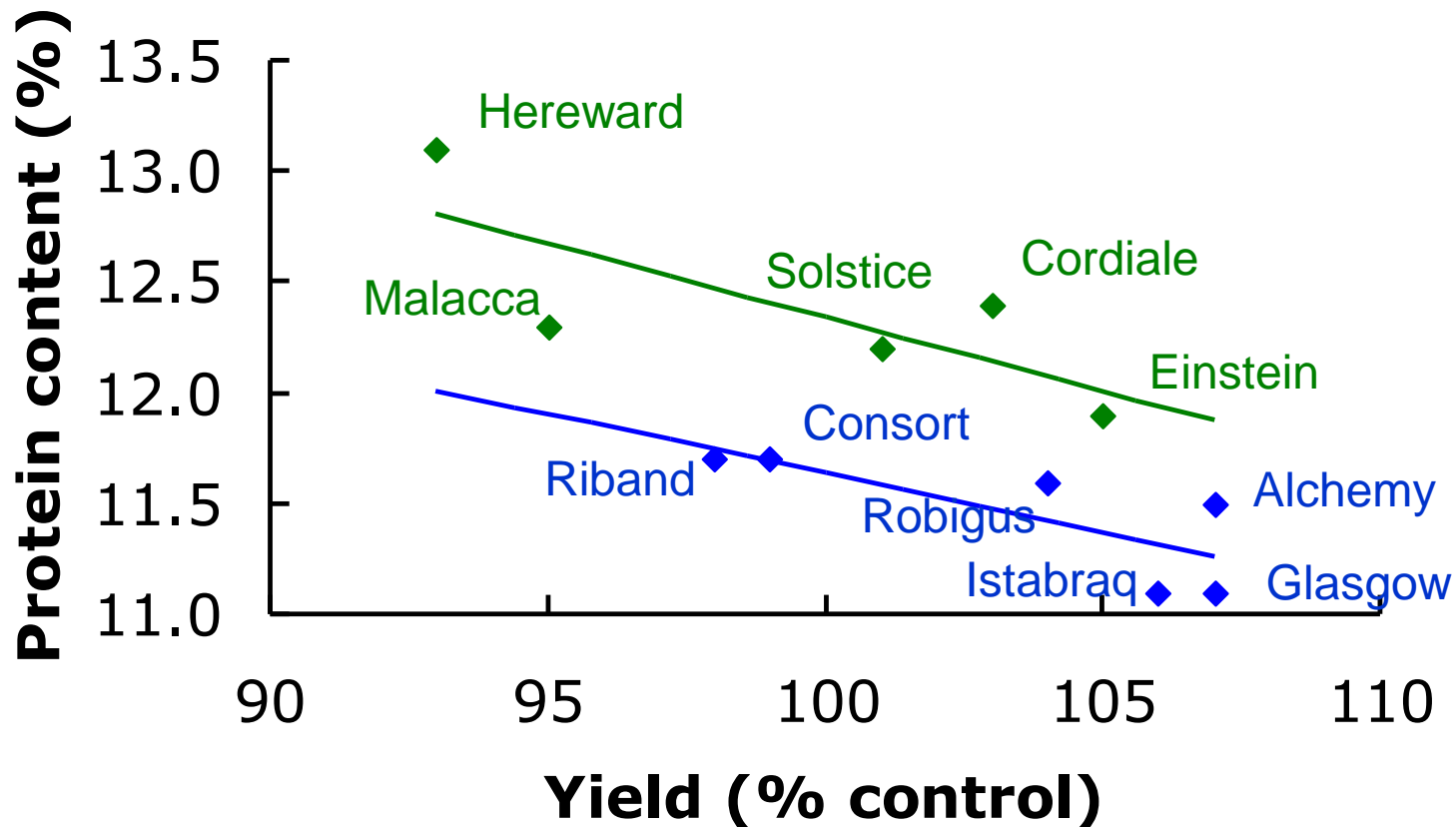
How do varieties rate for distilling?



- ◆ Good
Riband
- ◆ Medium good
Consort, Istabraq, Glasgow, Alchemy, Zebedee
- ◆ Medium
Claire, Robigus, Nijinski
- ◆ Medium-poor and Poor
Deben and Gatsby, Hyperion, Ambrosia

Yield vs protein content - *Milling and soft (distilling) wheat*

◆ Milling ◆ Soft (distilling)



Export brands



- ◆ Defined by variety and specification
- ◆ Approved varieties are blended to produce the correct specification
- ◆ Chopin alveograph values are important



Chopin Alveograph

Indicates the quality of gluten - hydrated protein.

This holds the loaf together enveloping the starch to water matrix.



Export brands

ukp - a blend of semi-hard varieties to suit both EU and non-EU bread making.

$W \geq 170$ $P/L \leq 0.9$ Protein 11% - 13%

uks - a blend of soft extensible varieties, well known throughout the EU for their biscuit making and bread blending characteristics. Useful for blending with hard high protein wheats.

$W \leq 120$ $P/L \leq 0.55$ Protein 10.5% - 11.5%

Summary



- ◆ Understand market requirements
- ◆ What is market(s) suitability?
- ◆ Does this constrain outcome?
- ◆ New varieties offer higher yield
- ◆ What about feed varieties?
- ◆ Make use of RL and recent R&D



HGCA



A helping hand at every stage of the grain chain