

# Cereal Varieties – Update for 2011/12

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**SAC**

# Outline

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- Harvest 2010 Report
- Yield trends in variety trials and on farm
- Market share of malting varieties
- Review of new HGCA RL and SAC variety lists
  - Spring barley
  - Winter barley
  - Winter wheat
  - Other cereals

# Harvest report – 2010



## Cereal and oilseed production, harvest 2010

	Area (ha)	Yield (t/ha)	Production (1000's t)
Spring barley	241,700	5.34	1,290
Winter barley	47,900	7.05	338
Winter wheat	111,300	8.94	994
Oats (total)	22,800	6.02	137
Cereals total	424,400	6.51	2,760
Oilseed rape	36,000	3.70	132

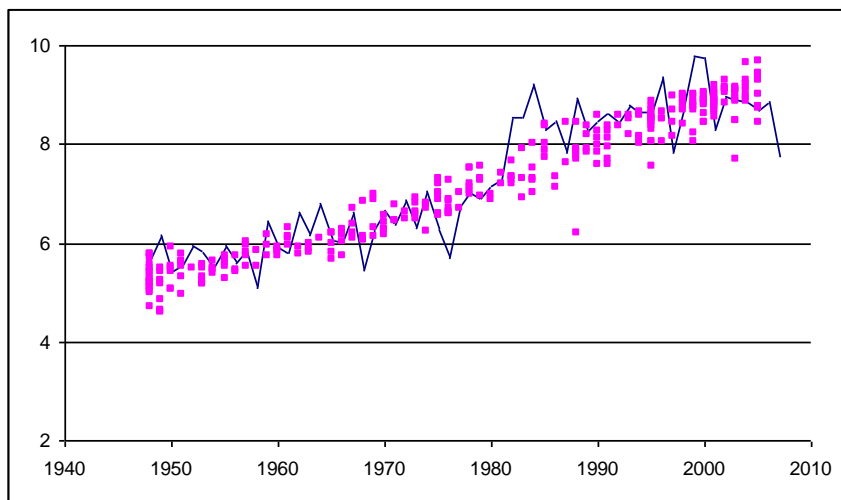
Source: Scottish Government

# Yield trends – trials *versus* farm yields

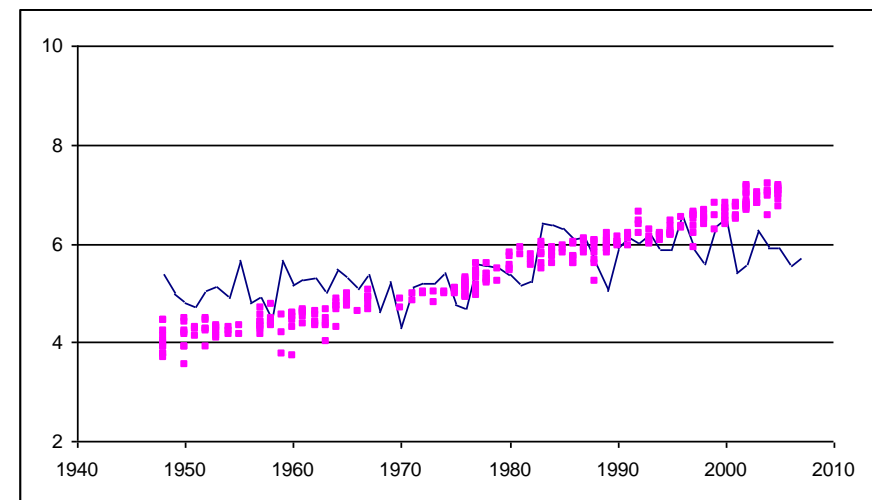


- Genetic potential *versus* yields on farm
- Interpreting trials data as genetic and environmental effects
- Study by Ian MacKay *et al.* (NIAB) into trends in UK variety trials
  - **Variety effects** and year effects

## Wheat yields in trials



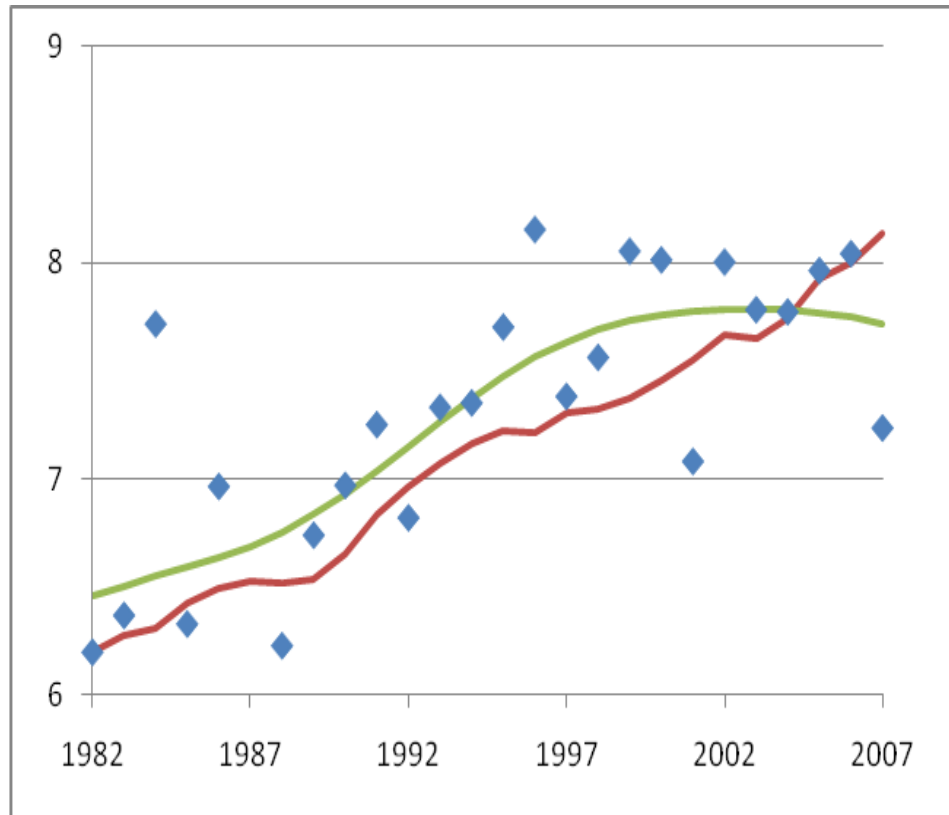
## Spring barley yields in trials



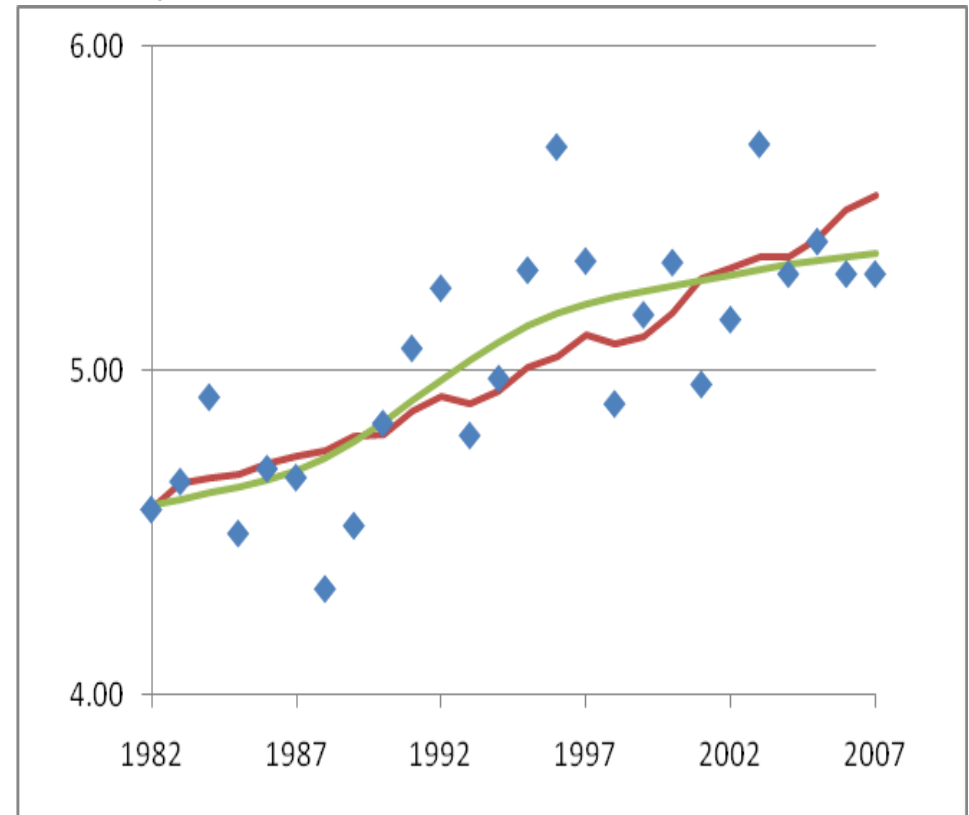
# Estimated contribution of variety improvement to national cereal yields



Annual wheat yields ◆, —  
Wheat improvement —



Annual spring barley yields ◆, —  
Barley improvement —



Source: Ian MacKay *et al.* (2010)

# Changes in maltsters intake

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- **Optic** – has maintained > 40% share in past four years
- **Decanter** – retains a small market share for grain distilling
- **Oxbridge** – had significant decline in 2010
- **Publican** – has a small share, which is expected to decline
- **Belgravia** – has developed a small share
- **Concerto** – increasing market share: a bigger impact in 2011
- **Forensic** – has developed a small market share

# IBD Approved Lists – Harvest 2011

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## Malt Distilling Use

Optic, Concerto, Belgravia, Oxbridge, Publican

## Grain Distilling Use

Belgravia, Decanter, Forensic (*New*)

## Brewing Use

Optic, Concerto, Westminster, NFC Tipple, Quench

Pearl, Flagon, Cassata

Propino (*Prov 1*), Purdey (*Prov 1*), Winsome (*Prov 1*)

# Spring barley – variety issues

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## Malting

- Market acceptance
- Yield compared to Optic and Oxbridge
- Maturity
- Pre-disposition to grain quality problems

## Feed

- Yield should be compared to Waggon
- Ease of management e.g. Westminster type
- Straw yield and maturity



# If moving into Concerto ...



- It has produced good levels of hot water extract and spirit yield in malting and distilling trials and in commercial bulks
- Yield is above Optic and Oxbridge
- Maturity – on average is later than Optic and Oxbridge
- Fairly tall – Belgravia height, with below average straw strength
- Similar to Optic in its weakness to *Rhynchosporium*

# Concerto – strengths and weaknesses



	Concerto	Optic	Oxbridge	Publican
Yield (NE)	103	97	96	102
Yield uT	94	81	87	94
Lodging	6	7	8	7
Height	77	75	73	74
Ripening	+1	0	0	+1
Brackling	7	5	8	7
Screenings (2.5mm)	3.4	5.3	3.2	3.3
Mildew	8	5	7	9
Rhynchosps'	4	4	7	8
GLA	5	6	6	5

# Spring barley – Grain distilling



	Belgravia	Forensic	Decanter
Yield (NE)	101	103	93
Yield uT	94	86	87
Lodging	7	6	8
Height	76	71	75
Ripening	+1	0	-1
Brackling	7	8	7
Mildew	9	4	9
Rhynchosps'	7	5	6
GLA	8	4	8

# Spring barley – Others / Feed



	Propino	Waggon	Westminster	Garner
Yield (NE)	107	107	99	106
Yield uT	97	94	92	96
Lodging	8	8	6	8
Height	76	73	82	73
Ripening	0	-1	+1	0
Brackling	8	8	6	8
Mildew	8	9	9	9
Rhynchosps'	7	3	8	7
GLA	6	7	8	--

# New spring barleys on the RL



	Shuffle	Moonshine		Summit
Breeder	Syn	RAGT		Syn
Yield (NE)	106	102		105
Yield uT	95	91		99
Lodging	[9]	[6]		[8]
Height	77	71		69
Ripening	+1	-1		+1
Brackling	9	7		9
Mildew	8	8		8
Rhynchosps'	6	4		7

# Winter barley

# Winter barley – two row feed



	Saffron	Retriever	KWS-Cassia	Florentine <sup>New</sup>
Yield (North)	97	108	103	103
Yield uT	81	81	85	83
Specific Wt	70.2	66.5	70.6	68.4
Lodging	8	6	8	9
Height	88	83	88	87
Ripening	0	-1	0	-1
Winter Hard	5	6	[6]	--
Mildew	3	6	5	6
Rhynchosporium	4	7	4	8
Net blotch	8	5	8	7
BaYMV	--	R	R	R

# Winter barley – six rows



	Sequel	Volume \$		Escadre <sup>New</sup>	Element <sup>New \$</sup>
Yield (North)	102	112		106	112
Yield uT	81	91		87	87
Specific Wt	69.3	68.7		69.7	68.2
Lodging	6	6		6	6
Height	102	101		98	103
Ripening	-2	-2		-2	-3
Winter Hard	6	6		--	--
Mildew	6	7		5	6
Rhynchossp	8	8		8	7
Net blotch	7	7		8	7
BaYMV	R	R		R	R



# Winter barley – malting



- Scottish market at approximately 60,000 tonnes
- **Pearl** still dominates Scottish intake (< 1/3 of English intake)
- **Cassata** is close to 15% of Scottish market share
- For others (e.g. **Winsome**) must wait for a market to develop

# Winter wheat

# Wheat – New distilling varieties\*



	Viscount	Alchemy	Beluga		Denman*	Gravitas*
Yield (North)	104	99	104		[103]	[103]
Yield uT	88	86	84		90	90
Distilling	good	medium	good		good	medium
Lodging +/- PGR	7 / 7	7 / 7	9 / 8		5 / 7	5 / 7
Height	84	95	82		86	92
Ripening	+1	+2	0		0	+2
Sprouting	4	6	[4]		--	--
Mildew	7	7	5		6	6
Yellow rust	5	9	9		7	7
<i>Septoria tritici</i>	5	7	5		6	7
Eyespot	6	6	7		6	6

# Wheat – New biscuit making varieties\*



	Robigus	Claire	Invicta		Tuxedo *	KWS-Target *
Yield (North)	101	98	100		[101]	[101]
Yield uT	74	80	87		88	86
Distilling	medium	medium	medium		medium	poor
Lodging +/- PGR	7 / 7	7 / 7	7 / 8		7 / 8	8 / 8
Height	90	91	93		86	86
Ripening	+2	0	+3		+2	+1
Sprouting	5	5	[6]		--	--
Mildew	6	4	6		6	6
Yellow rust	2	9	8		9	8
<i>Septoria tritici</i>	6	6	6		7	6
Eyespot	5	6	5		6	7

# Wheat – hard endosperm varieties



	Solstice	Cordiale	Einstein		Oakley	Grafton
Yield (North)	95	96	99		106	102
Yield uT	79	81	83		80	88
Use	nabim 1	nabim 2	nabim 2		feed	feed
Lodging +/- PGR	8 / 8	8 / 8	6 / 7		7 / 7	9 / 9
Height	96	82	88		87	79
Ripening	0	-3	0		+1	-2
Sprouting	7	6	6		6	5
Mildew	4	6	6		6	7
Yellow rust	4	6	6		2	8
<i>Septoria tritici</i>	5	5	5		5	6
Eyespot	5	5	6		4	7@

# Winter wheat – other new varieties



- **KWS-Podium** – a new milling variety. Promising quality, but wait to see how it progresses commercially. No significant agronomic weaknesses
- **Stigg** – a new feed variety. Excellent disease resistance (= a yield penalty). A specialist variety; potential for reducing inputs
- **Cocoon** – a soft milling variety and **KWS-Santiago** – a new feed variety does not meet the requirements for Scottish growers

# Other cereals



- Two new spring wheat varieties
  - **Mulika** in nabim Group 1
  - **CPBT W166** (proposed name KWS-Willow) in nabim Group 2
  - Both look promising for yield and quality, but need more time to evaluate market potential
- Two new spring oats
  - **Canyon** is high yielding with moderate kernel content
  - **Rozmar** has lower yield and kernel content than Canyon
- No new winter oats

# Summary



- Increase in Concerto for malt distilling, still a key role for Optic
- Several varieties for grain distilling inc. Belgravia and Forensic
- New feed varieties – compare with Waggon or Westminster
- A choice of new winter barley varieties
- Ease into new winter wheats – compare with best in Groups 3 & 4
- Spring wheat and oats – wait and see



# Thank you

**HGCA – variety trials and research**

**RERAD – WP and LINK research**

**BBSRC – LINK research**

**SAC colleagues and Ian Mackay (NIAB)**