

Spring Barley Varieties For 2017

Seamus Kearney

Crops Evaluation and Certification Division
Moorepark



Content

- Spring Barley Trial results.
- Spring Barley 2017 Recommended List overview.
- Malting Barley variety selection.
- Variety Characteristics.
- Malting Barley Grain Skinning Results.

Spring Barley Trials 2016

Spring Barley RL trial

- 18 varieties, 7 trial sites
- Control Varieties: **Propino** and **Mickle**.
- Mean yield of controls: 7.9 T/Ha (3.2 t/ac)
2 candidate varieties eligible for 2017 List
- Frontier/SY Taberna/Soldo/Shada/Scholar/Sienna/Olympus

Spring Barley NL1 trial (Screening new varieties)

18 Varieties, 5 trial sites

Mean yield of controls: 8.2/Ha (3.3 t/ac)

Spring Barley NL2 trial (Screening new varieties)

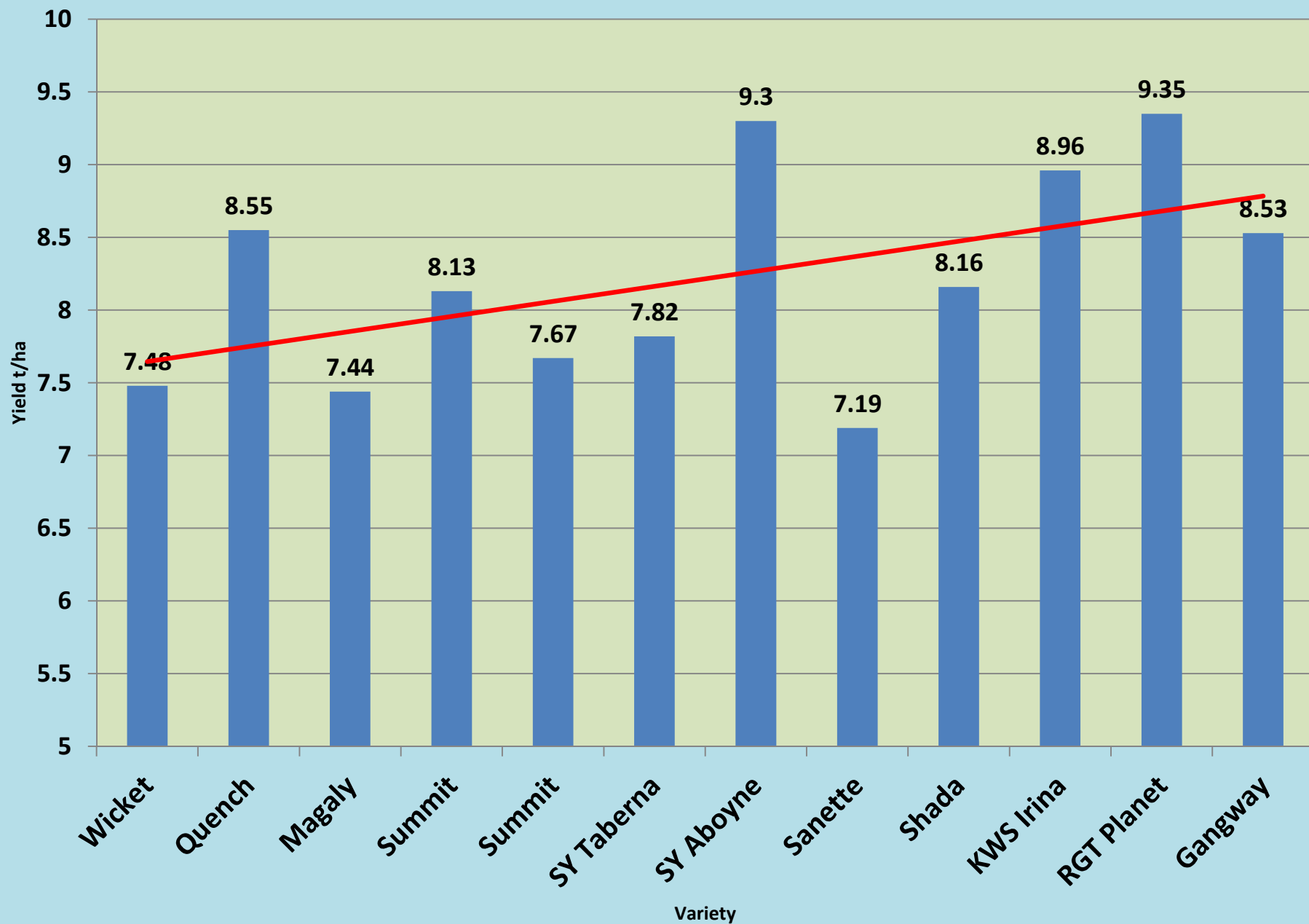
15 Varieties, 5 trial sites

Mean yield of controls: 7.8 T/Ha (3.2 t/ac)

60 Varieties (32 UK, 16 DK, 9 D, 2 Fr, 1 NL)

Highest Spring Barley Variety Yield 2005-2016

One Year Results



Spring Barley RL 2016 Yield Results

Controls: Propino & Mickle – 7.9 t/ha (3.2t/ac)

Variety	Relative Yield	Variety	Relative Yield
Propino	100	Wylanda	103
Mickle	100	Dioptric	103
KWS Irina	102	SY414-396	101
Sanette	102	Limona	102
Paustian	101	SJ148178	99
Laureate	103	Flair	102
RGT Planet	104	SY415-544	106
Hacker	103	SY414-433	100
Gangway	108	SJ148536	100

Spring Barley Recommended list 2017

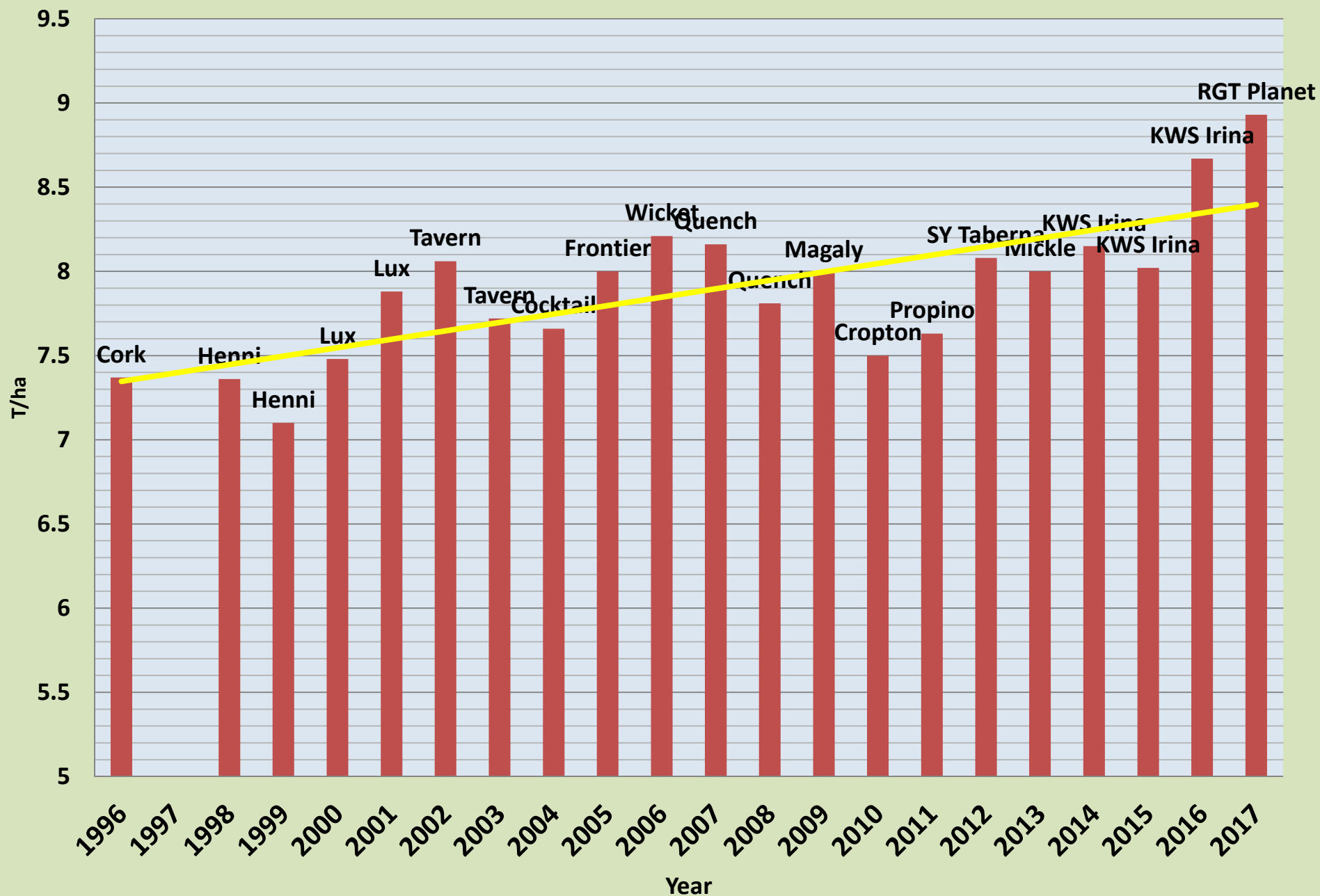
Recommended List 2016	Eligible Varieties for 2017 RL
Frontier	RGT Planet
KWS Irina	Laureate
Mickle	
Propino	
Sanette	
SY Taberna	
Paustian	
Soldo	

Agronomic & Quality Characteristics 100= 8.5t/ha (3.43t/ac)	2017 Recommended List					Provisionally Recommended
	KWS IRINA	MICKLE	PAUSTIAN	PROPINO	SANETTE	RGT PLANET
Relative Yield	103	101	101	99	102	105
Straw Height	73.6	69.9	75.2	79.1	73.5	76.3
Resistance to Lodging	7	7	6	5	6	(5)
Straw Breakdown	7	7	6	5	5	(5)
Earliness of ripening	6	7	5	6	5	(5)

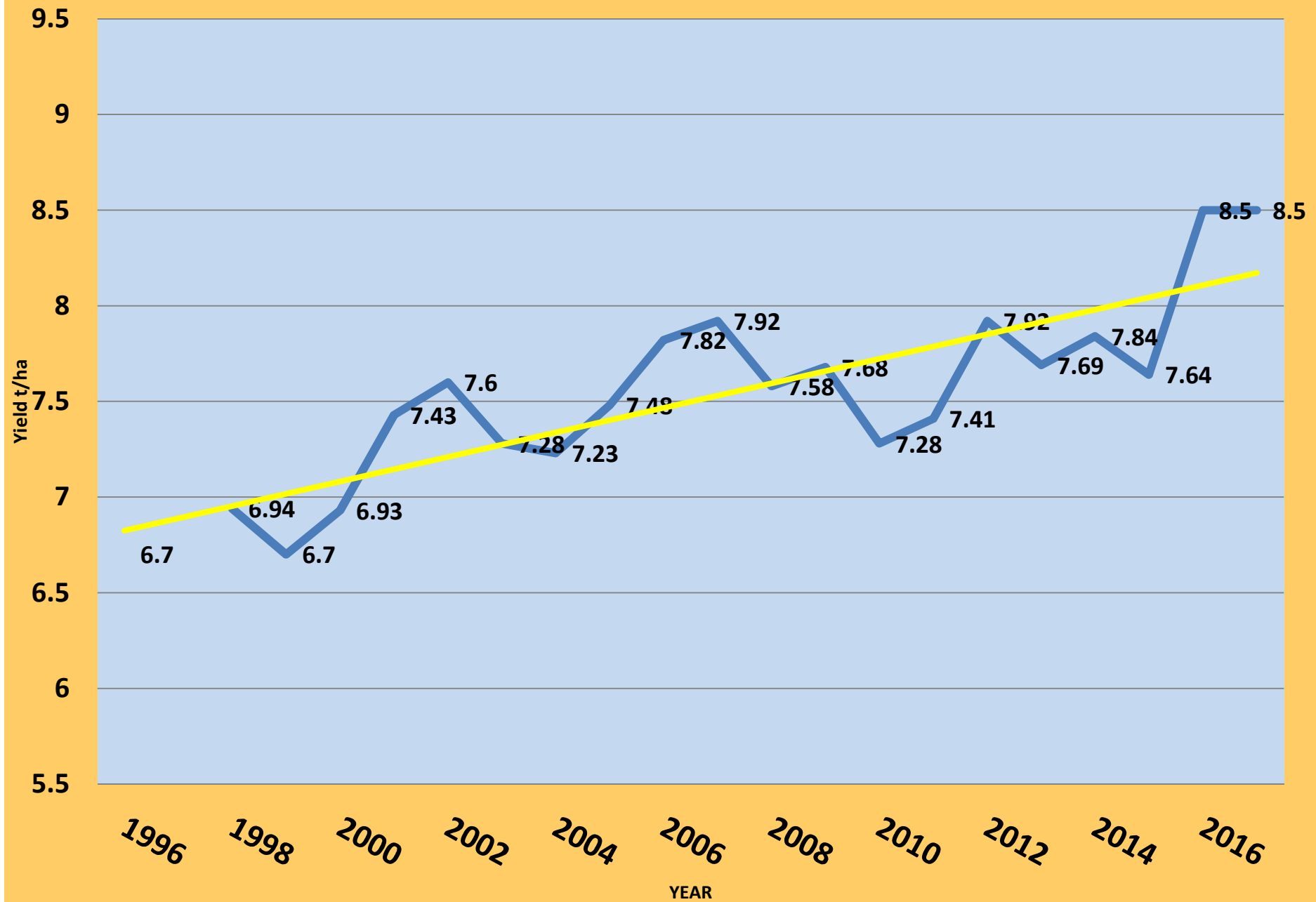
Agronomic & Quality Characteristics	Recommended					Provisionally Recommended
	KWS IRINA	MICKLE	PAUSTIAN	PROPINO	SANETTE	RGT PLANET
Mildew	8	5	8	6	8	(8)
<i>Rhynco</i>	6	7	7	6	7	(7)
B. Rust	6	5	7	5	5	(6)
N. Blotch	8	5	6	5	7	(5)
TGW*	51.9	51.4	52.1	52.4	52.0	53.4
KPH	63.5	66.2	65.9	65.6	64.7	65.1
Screenings (<2.25mm)	2.7	1.7	2.4	1.3	2.0	2.1
Year First Listed	2014	2013	2015	2011	2014	2017

Variety 3 year Trial yields.	RL Status	RL Yield 2017 (C = 8.5 t/ha)	Yield 16 (C= 7.9 t/ha) C = Propino /Mickle	Yield 15 (C= 8.9 t/ha) C = Propino /Mickle	Yield 14 (C= 8.3 t/ha) C = Propino /Quench
Propino	R	99	100	99	99
Mickle	R	101	100	101	104
KWS Irina	R	103	102	100	108
Sanette	R	102	102	101	104
Paustian	R	101	101	99	103
RGT Planet	PR	105	104	105	(107)
Laureate	(C 2017)	(104)	103	104	(104)
Hacker	(C 2018)		103	(102)	(101)
Gangway	(C 2018)		108	(104)	(103)
Wylanda	(C 2018)		103	(103)	(102)

Spring Barley RL Highest Variety Yield on list 1996-2017



Recommended List Control Yields 1996-2017



Malting Variety Selection

- All varieties submitted to DAFM have 'potential'.
- Commercial aim of breeder- Multi use varieties.
 - Pan European (Soldo ↓)
- Varieties in RL/NL programme.
- Malting Trial.
- End game: Recommended List (traditionally feed list)
- Malting Barely Descriptive List.
- Increase interest in Non GN varieties.

Malting Barley Variety Selection.

- Malting Barley Trial reinstated in 2011.
- Fills void left since Ballinacurra site closed.
- Small scale relative to past (3/4 sites).
- Constantly evolving: (3 sites/2014 Clohamon/2015 Laois)
- Useful indicator of older variety performance(Sebastian).
- Varieties that don't make RL or not being continued in RL Trial (Azalea, Overture)
- Sienna/Olympus/Laureate
- Retain varieties with strong malt merit (Micro Malt results)

Malting Barley Committee.

- All stakeholders involved meeting 3 times annually.
- 2016 trial results discussed and analysed in November.
- Some varieties being discontinued (Agent/Breeder/DAFM), others may only continue in trial based on micro malting results.
- Samples list decided from (2 sites) for Micro Malting.
- In Feb. micro malt results discussed.
- Decision taken on merit of varieties and batch brew varieties.
- Ex 2011 harvest- 400t Propino and 400t SY Taberna (100+ ac)
- Ex 2015 harvest- Sienna and Olympus
- Ex 2016 harvest- Laureate (RGT Planet fast tracked through)
- EX 2017 harvest- decision will depend on 2016 harvest micro malt results and seed availability.

2016 Micro Malting Results (RL)

Spring Irish Barley Recommended List 2016

[illegible]

2016 Micro Malting Results (NL1+2)

Variety	E EX2db	MOI	TN dry	E TSNd	E KI	DPWK dry	DU dry	E B-GLUCW	E FAN/12P	FRI	HOM
WEXFORD SB NL1 2016 (WXM NL1 16)											
28647P5	82.4	3.7	1.60	0.73	45.5	279	51.2	91	247	95.2	98.6
Propino	83.6	3.5	1.57	0.64	40.5	306	54.2	68	193	97.8	99.2
SY414-473	83.3	3.5	1.53	0.57	37.4	257	42.4	112	183	94.9	98.0
Asteroid	83.1	3.5	1.58	0.74	46.9	315	50.1	71	243	96.3	98.3
LG Diablo	83.9	3.9	1.54	0.6	39.1	267	51.4	56	192	97.1	98.4
SY415-538	83.1	3.5	1.59	0.65	41.1	338	44.8	102	209	96.5	98.7
SY415-560	82.6	3.5	1.62	0.62	38.1	226	47.5	86	197	93.7	98.3
NOS11085-83	83.6	3.5	1.67	0.75	45.1	279	53.1	86	248	94.0	96.9
WEXFORD SB NL2 2016 (WXM NL2 16)											
Variety	E EX2db	MOI	TN dry	E TSNd	E KI	DPWK dry	DU dry	E B-GLUCW	E FAN/12P	FRI	HOM
NORD14/2403	81.5	3.7	1.64	0.63	38.3	226	58.2	74	191	96.4	98.6
NOS110194-52	83.2	3.6	1.67	0.70	41.9	359	54.6	29	236	96.0	99.5
Embrace	83.1	3.5	1.57	0.65	41.6	307	57.7	32	219	98.3	99.2
Propino	82.8	3.8	1.59	0.62	38.9	323	54.6	34	193	98.6	99.6
KWS Cantton	82.6	3.5	1.55	0.63	40.4	236	38.3	71	207	98.3	99.6
Prospect	83.1	3.5	1.57	0.65	41.6	240	49.9	49	216	97.8	99.0
NOS110352-51	81.9	3.5	1.61	0.57	35.5	213	43.1	293	172	85.2	97.1

2016 Micro Malting Results (Malt+Distilling)

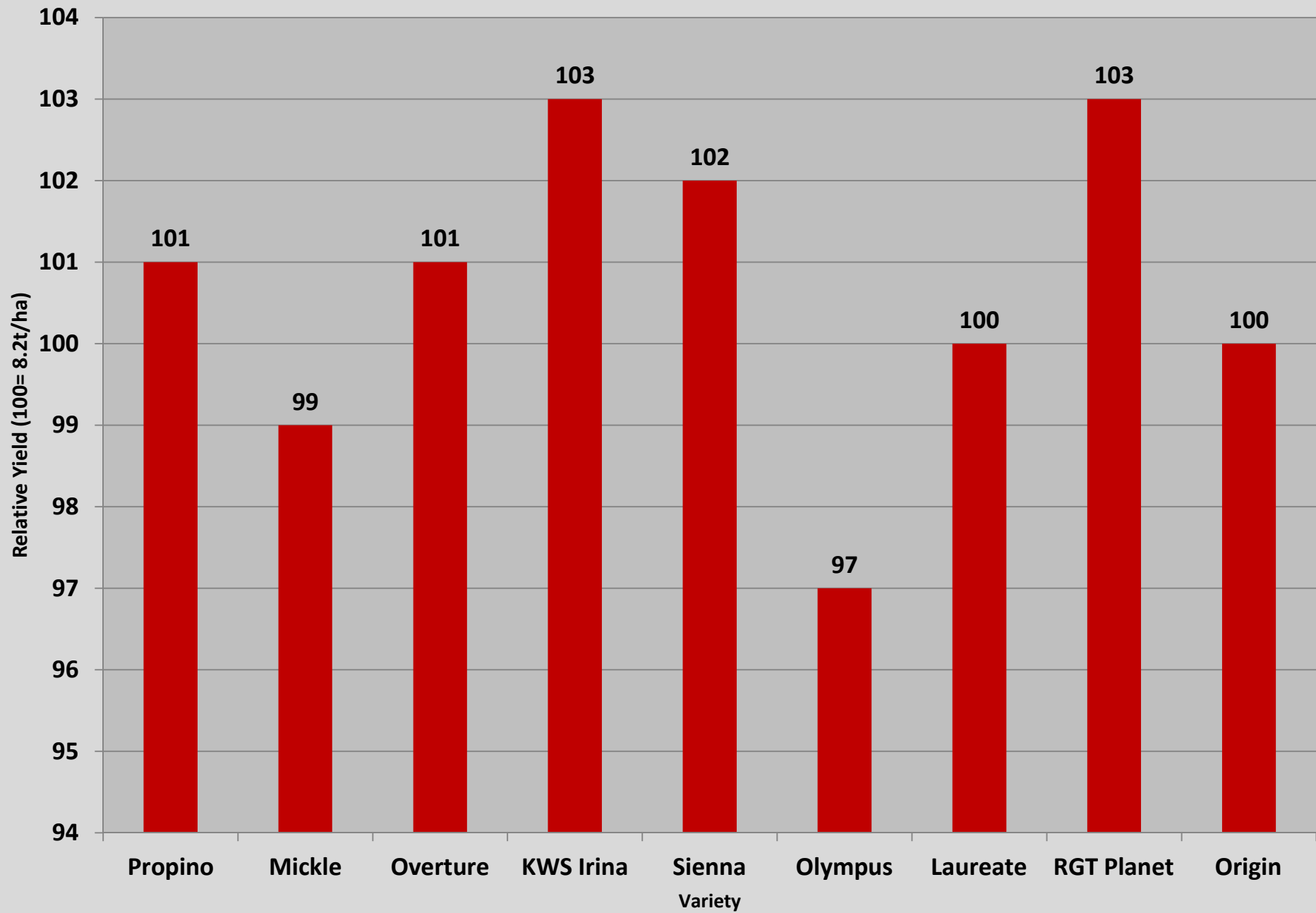
Spring Irish Barley Malting Trial 2016

Variety	E EX2db	MOI	TN dry	E TSNd	E KI	DPWK dry	DU dry	E B-GLUCW	E FAN/12P	FRI	HOM
WEXFORD MALT 2016 (WXM MALT 16)											
Propino	82.4	3.9	1.73	0.64	36.9	332	53.2	54	199	95.3	99.1
RGT Planet	83.3	3.9	1.57	0.72	45.9	318	54.8	68	239	97.4	98.9
Laureate	82.7	3.7	1.65	0.65	39.1	284	51.8	77	212	95.4	97.8
Olympus	82.3	3.5	1.65	0.55	33.6	321	45.0	112	168	92.2	98.8
LAOIS MALT 2016 (LSM MALT 16)											
Propino	84.6	3.6	1.59	0.71	44.7	286	46.9	140	215	96.3	98.5
RGT Planet	84.7	3.6	1.65	0.75	45.7	306	49.7	91	223	97.9	98.9
Laureate	85.1	3.4	1.58	0.73	46.4	282	50.9	82	229	96.7	98.2
Olympus	84.9	4.1	1.58	0.59	37.7	367	47.6	187	165	93.1	95.2

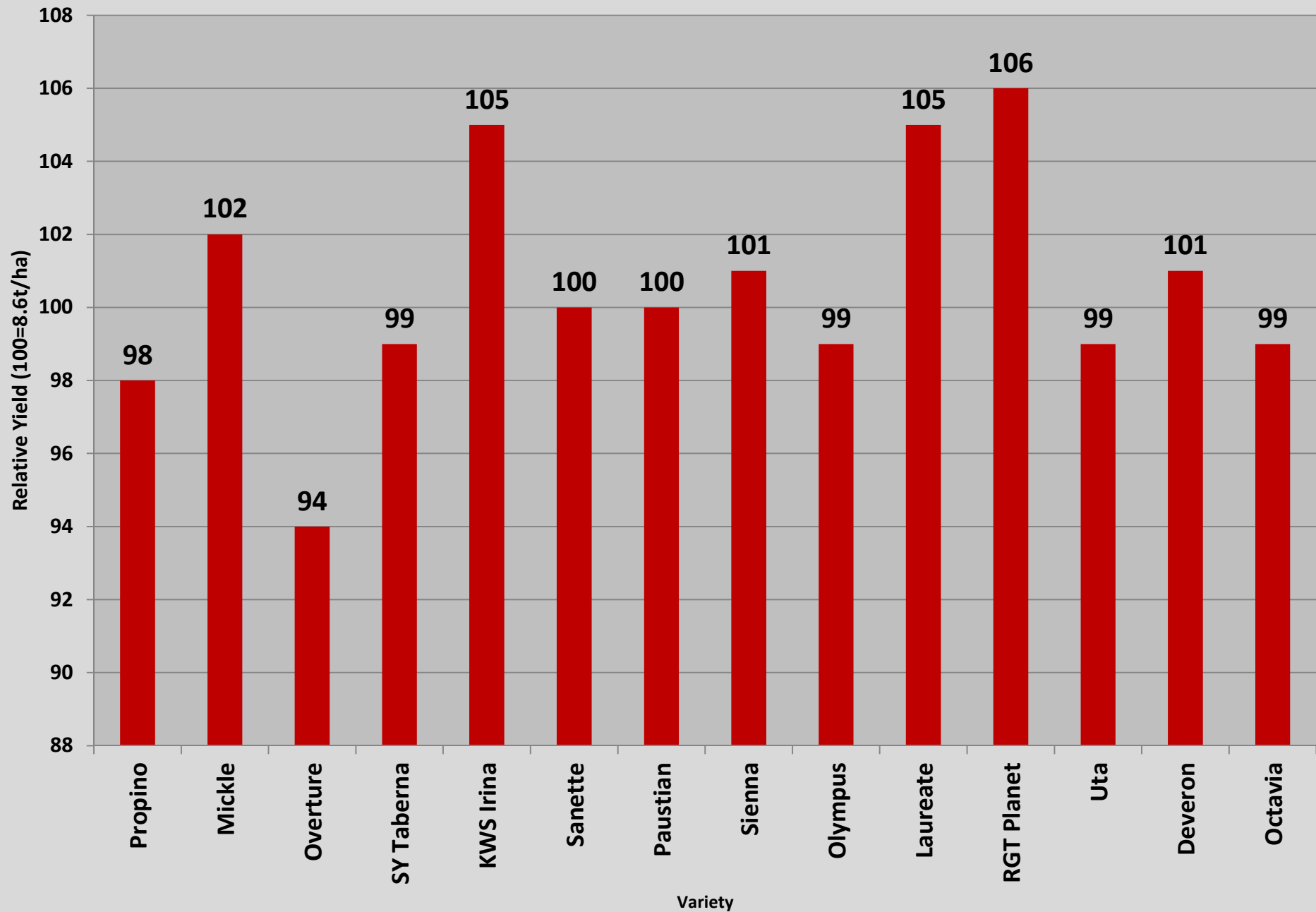
Spring Irish Barley - Distilling Programme 2016

Variety	I EX2db	MOI	TN dry	I TSNd	SNR	DPWK dry	DU dry	I B-GLUCW	I FAN/12P	FRI	HOM	PSY2db
LAOIS DISTILLING 2016 (LSM D 16)												
Laureate	327	4.7	1.51	0.62	40.8	318	62.2	137	203	97.0	98.4	435
Olympus	323	4.4	1.43	0.50	35.3	413	50.3	120	168	96.1	97.4	441
RGT Planet	323	4.3	1.42	0.62	43.8	324	54.7	68	209	98.4	99.1	436

Malting Trial Result 2016



Malting Trial Result 2015



Agronomic & Quality Characteristics 100= 8.5t/ha (3.43t/ac)	MALTING BARLEY VARIETIES 2017					
	KWS IRINA	LAUREATE*	OLYMPUS	OVERTURE	PROPINO	RGT PLANET*
Relative Yield	104	102	98	97	100	104
Straw Height	73.0	72.9	76.1	77.3	81.5	76.1
Resistance to Lodging	7	(4)	5	5	5	(5)
Straw Breakdown	7	(4)	3	5	5	(5)
Earliness of ripening	6	(5)	5	6	6	(5)

Agronomic & Quality Characteristics	MALTING BARLEY VARIETIES 2017					
	KWS IRINA	LAUREATE*	OLYMPUS	OVERTURE	PROPINO	RGT PLANET*
Mildew	8	(8)	8	8	6	(8)
<i>Rhynco</i>	6	(7)	7	6	6	(7)
B. Rust	6	(7)	7	6	5	(6)
N. Blotch	8	(8)	7	7	5	(5)
TGW*	51.2	51.9	48.4	49.7	53.6	53.4
KPH	64.0	63.9	64.1	65.8	66.3	65.5
Screenings (<2.25mm)	2.0	2.0	2.6	1.7	1.1	1.7
Years in Malting Trial	4	2*	3	5	6	2*

Malting Barley 2017

- 6 varieties on descriptive list 2017
- Other potential varieties: Sienna, Gangway, Wylanda, Dioptric etc.
- Discontinued: KWS Irina, SY Taberna
- Malting intentions for 2016:
 - ☐ MCI: Propino, RGT Planet
 - ☐ Boortmalt: RGT Planet, Laureate, Propino, Olympus.
 - ☐ Acceptance/Rejection criteria? KWS Irina...
 - ☐ Skinning criteria...

Resistance to Mildew

High

- Laureate
- KWS Irina
- Sanette
- Paustian
- RGT Planet
- Hacker
- Gangway
- Olympus
- Sienna
- Overture

Med

- Wylanda

Low

- Mickle
- Propino
- Frontier



Resistance to Rhyncho

High

- Laureate
- Paustian
- Sanette
- KWS Canton

Med

- Gangway
- Hacker
- Overture
- RGT Planet
- Olympus
- Sienna
- SY415-544

Low

- KWS Irina
- Propino
- Frontier



Resistance to Net Blotch

High

- KWS Irina
- Laureate
- Sanette
- Gangway
- Limona
- SY415-544
- KWS Cantton

Med

- Olympus
- Paustian
- Overture
- Dioptric
- Hacker

Low

- RGT Planet
- Wylanda
- Propino
- Mickle



Resistance to Lodging

High

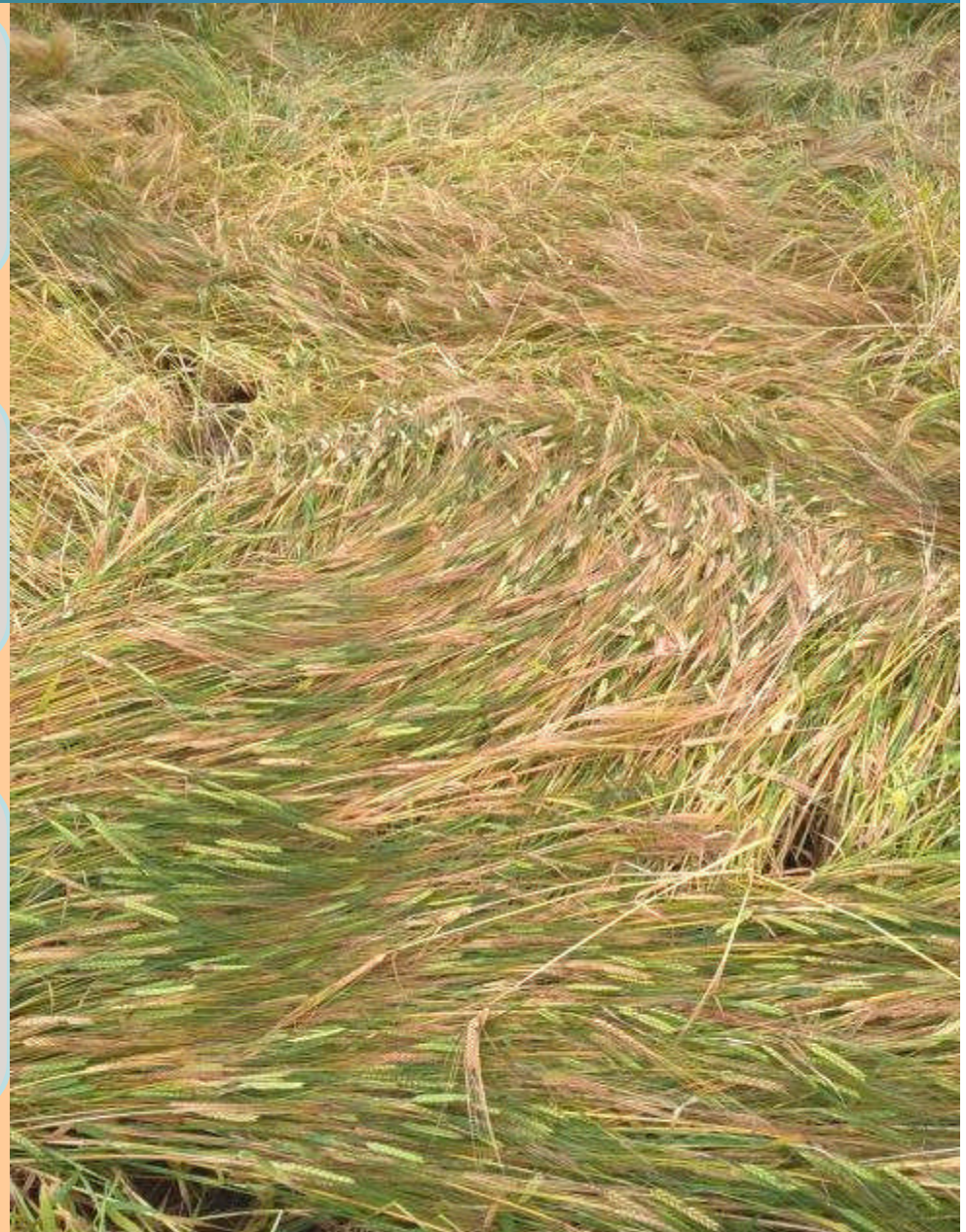
- Mickle
- KWS Irina
- Hacker
- Gangway
- Paustian

Med

- KWS Canton
- Wylanda
- SY415-544
- Sanette
- Propino

Low

- RGT Planet
- Sienna
- Overture
- Olympus
- Laureate
- Dioptric



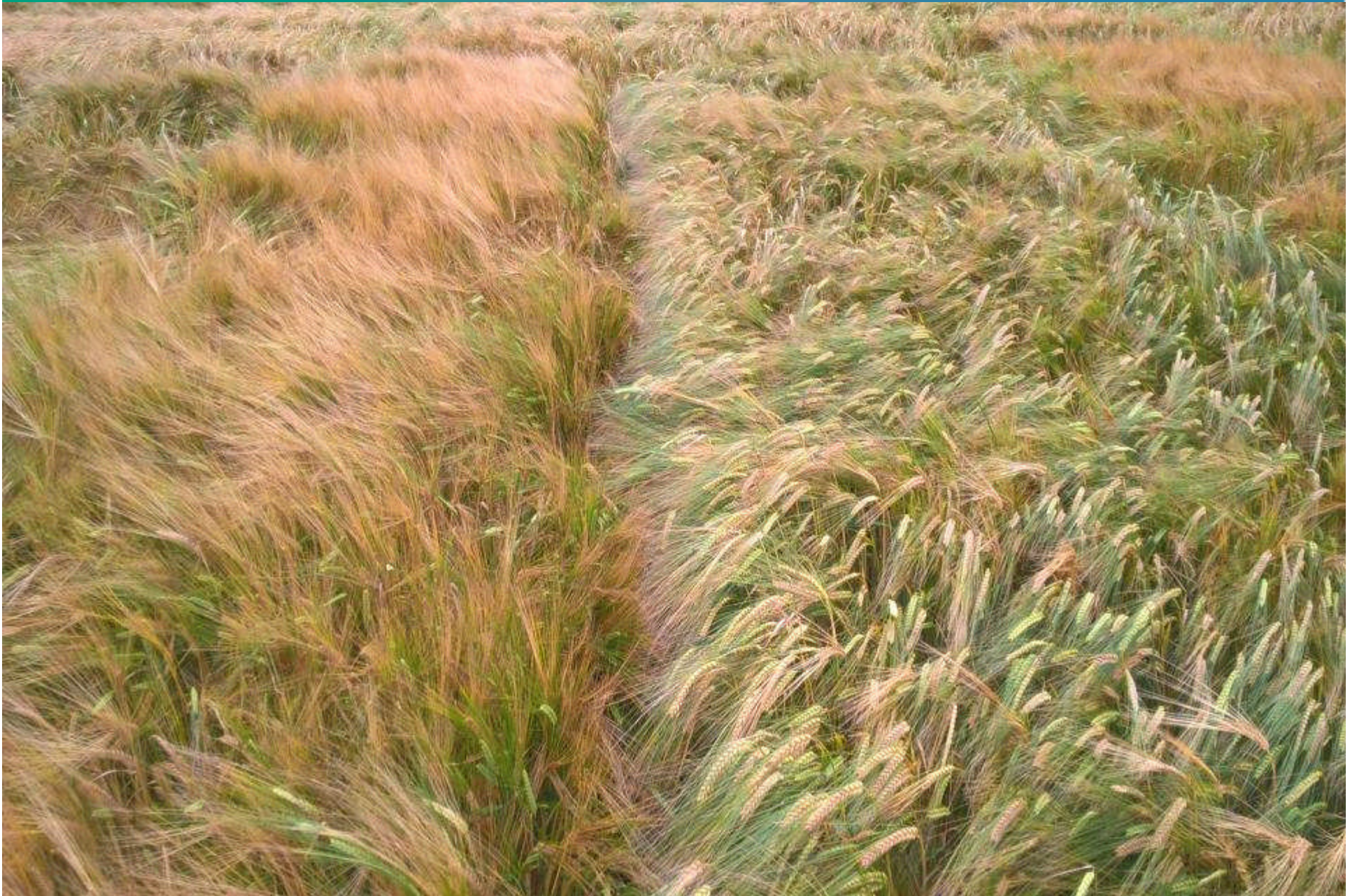
KWS IRINA

MICKLE



HACKER

GANGWAY



LAUREATE

RGT PLANET



OLYMPUS

PROPINO



Resistance to Brackling

High

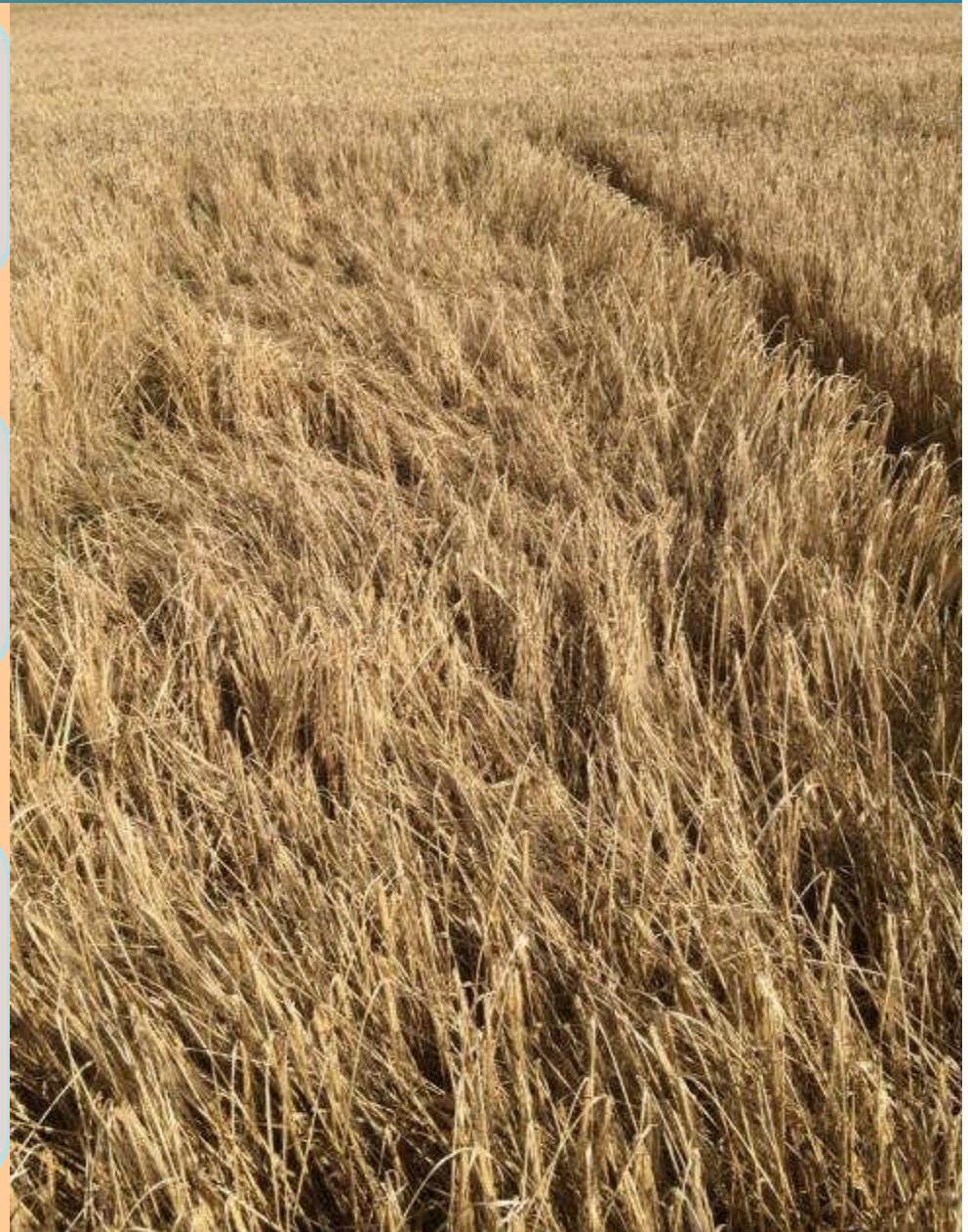
- Mickle
- KWS Irina
- Hacker
- Limona

Med

- Paustian
- RGT Planet
- SY415-544
- Gangway
- KWS Cantton

Low

- Sienna
- Propino
- Overture
- Sanette
- Laureate
- Olympus



Brackling- Mickie



KWS Irina



Sienna



Olympus



Oct 4, 2016



Resistance to Fusarium

High

Med

Low

- KWS Cantton
- Sienna
- Paustian
- Limona
- KWS Irina
- Propino
- Gangway
- Olympus
- RGT Planet
- Overture
- Laureate

- Hacker
- Mickle
- Sanette
- Dioptric



Resistance to BYDV

Paustian

KWS Irina

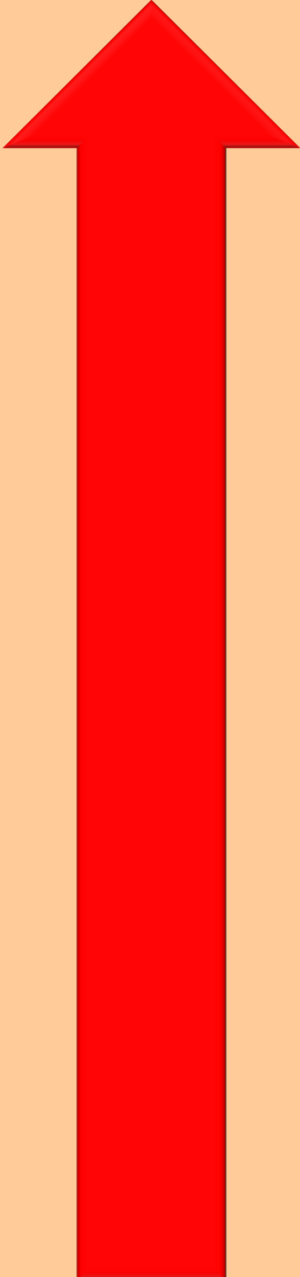


Resistance to Ramularia

Laureate KWS Irina Paustian



Screenings Summary 2016



Olympus	2.9
Sienna	2.8
KWS Irina	2.4
Laureate	2.3
RGT Planet	2.0
Mickle	2.0
Wylanda	1.9
Overture	1.7
Paustian	1.6
Sanette	1.6
Hacker	1.6
Gangway	1.2
Propino	1.1



KPH Summary 2016

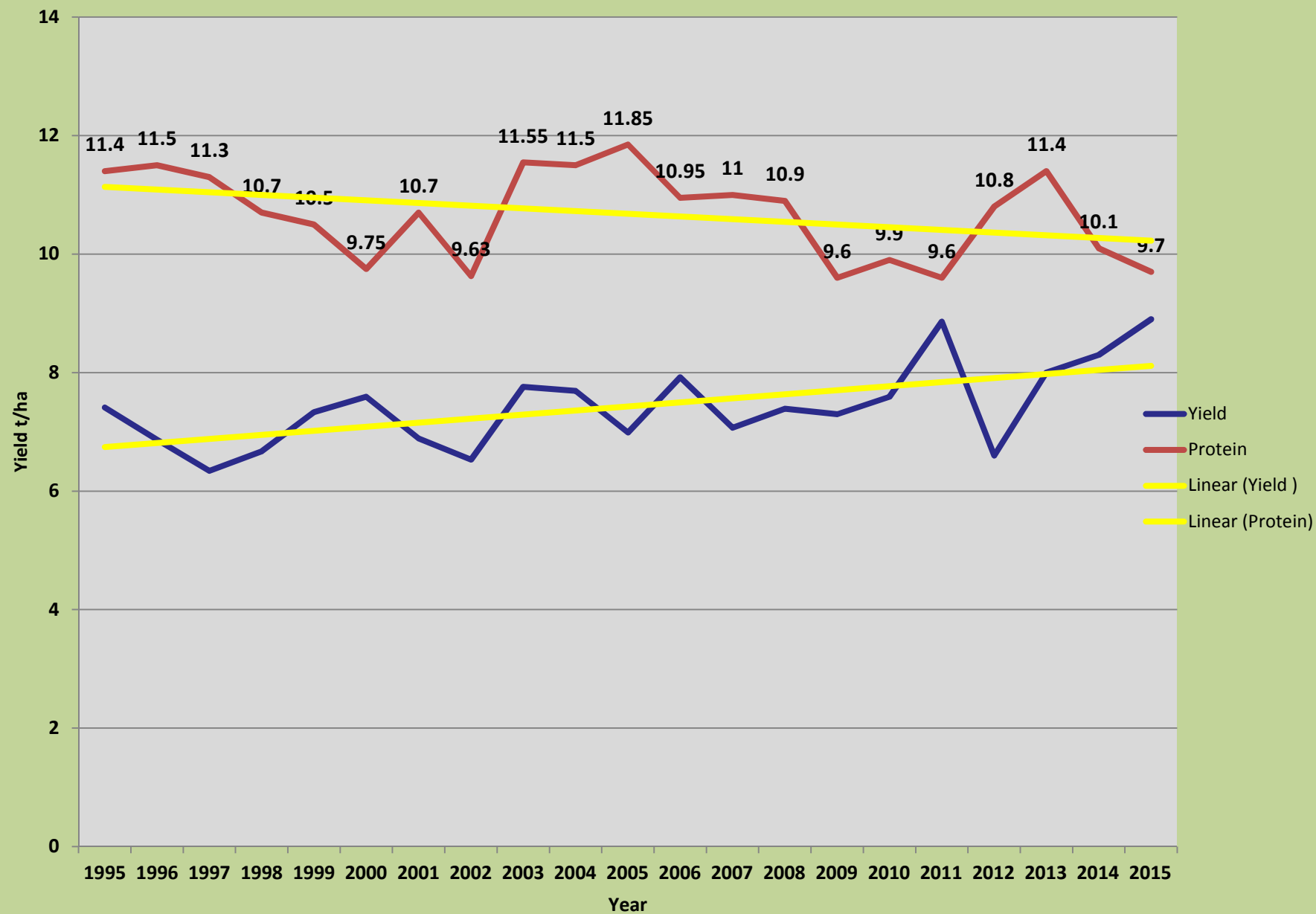


Sienna	67.4
Gangway	65.5
Hacker	65.0
Propino	65.1
Paustian	65.0
Mickle	64.8
Overture	64.7
RGT Planet	63.9
Wylanda	63.5
Laureate	62.3
KWS Irina	62.2
Olympus	62.2



Spring Barley Protein and Yield Trends 1995-2015

One year Results



Malting V Distilling Trial 2016

Variety	t/ha	t/ac	Relative yield
PROPINO	8.44	3.42	101
MICKLE	8.25	3.34	99
OVERTURE	8.56	3.46	103
KWS IRINA	8.68	3.51	104
SIENNA	8.86	3.59	106
OLYMPUS	8.48	3.43	102
LAUREATE	8.73	3.53	105
RGT PLANET	9.08	3.67	109
		<u>100= 8.3t/ha (3.4t/ac)</u>	
KPH: 64.2 Protein: 10.9			

Variety	t/ha	t/ac	Relative yield
PROPINO	8.08	3.27	101
MICKLE	7.94	3.21	99
OVERTURE	8.30	3.36	104
KWS IRINA	8.59	3.47	107
SIENNA	8.57	3.47	107
OLYMPUS	8.45	3.42	106
LAUREATE	8.80	3.56	110
RGT PLANET	8.78	3.55	110
		<u>100= 8.0t/ha (3.2t/ac)</u>	
KPH: 63.4 Protein: 9.9			

Malting V Distilling Trial 2015

Variety	t/ha	t/ac	Relative yield	Variety	t/ha	t/ac	Relative yield
PROPINO	9.30	3.76	97	PROPINO	8.74	3.54	98
MICKLE	9.83	3.98	103	MICKLE	9.03	3.65	102
OVERTURE	9.50	3.84	99	OVERTURE	8.86	3.58	100
SY TABERNA	9.43	3.82	99	SY TABERNA	8.31	3.36	94
KWS IRINA	9.98	4.04	104	KWS IRINA	9.16	3.71	103
SANETTE	9.71	3.93	101	SANETTE	8.90	3.60	100
PAUSTIAN	9.91	4.01	104	PAUSTIAN	8.91	3.61	100
		<u>100= 9.56t/ha</u>	<u>(3.87t/ac)</u>			<u>100= 8.89t/ha</u>	<u>(3.60t/ac)</u>
KPH: 69.5 Protein: 9.2				KPH: 67.6 Protein: 8.3			

Grain Skinning

- Malting Barley defect.
- Husk partially or completely detached.
- Causes variability in germination.
- Allows infection in exposed grain.
- Affects malt colour – ‘3’ required for Lager.
- Varietal effects: Scottish survey.
- Handling effects.
- Agronomy effects.

Assessing grain skinning

Subjective, poor years (2012 and 2015) have many grains with **loose husks**



Grain skinning 2012: 2 scores

Variety		Grain skinning
Frontier		5
Quench		6
Cropton		4
Propino		4
SY Taberna		5
Overture		6
Mickle		5
Shada		7
KWS Irina		7
Soldo		6
Sanette		5



Department of
**Agriculture,
Food and the Marine**

An Roinn
**Talmhaíochta,
Bia agus Mara**

Grain Skinning MCI 2016



Assessing Grain Skinning

<20% Husk loss:



Assessing Grain Skinning

≥20% Husk loss:



Assessing Grain Skinning

≥20% Husk loss:



Assessing Grain Skinning

≥50% Husk loss:



Assessing Grain Skinning

100% Husk loss:

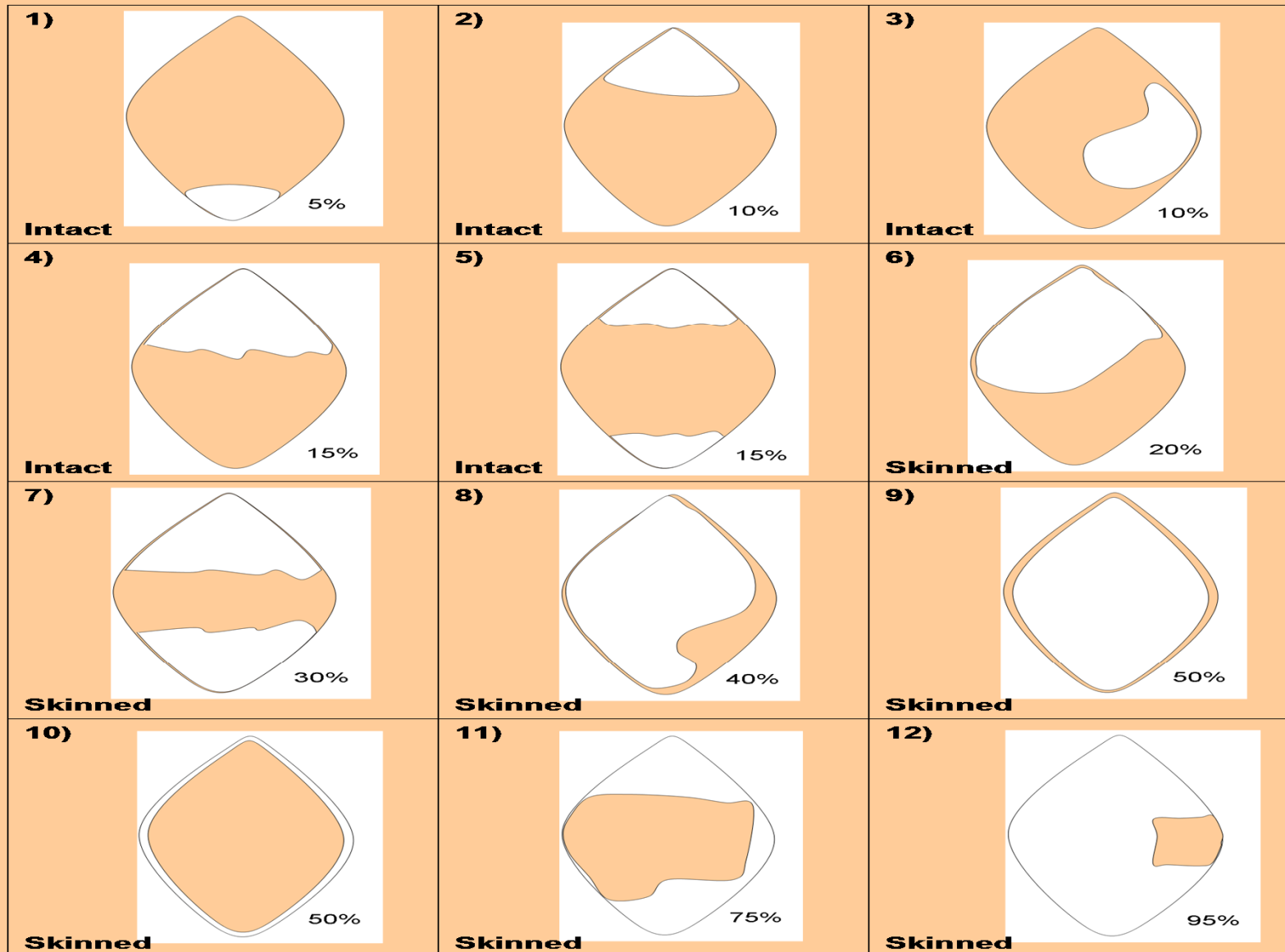


Assessing Grain Skinning

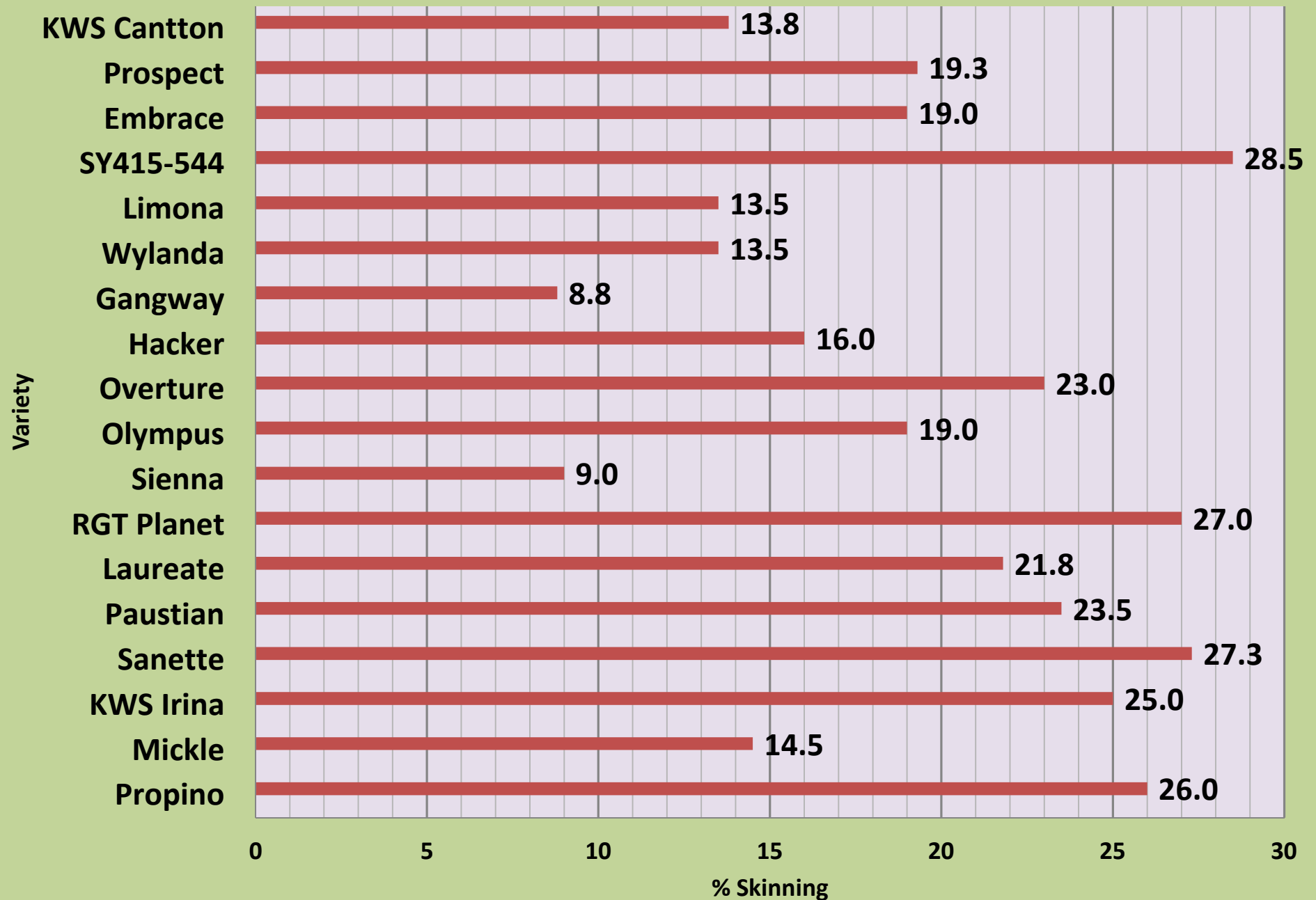
Husk present, but loose:



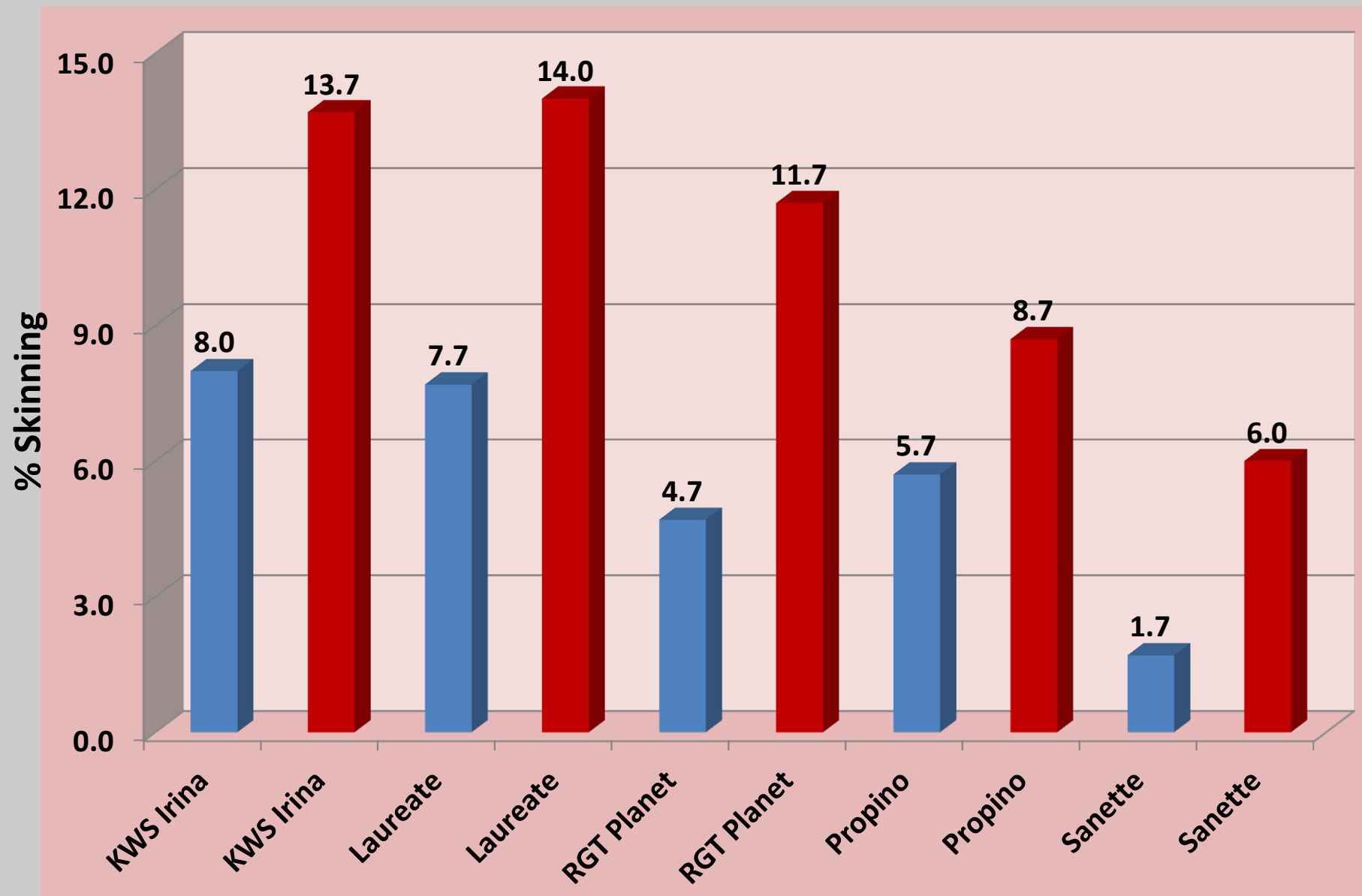
Assessing Grain Skinning



% Skinning East Cork/North Cork 2016 (>5% threshold)



SRUC Harvest date effect on % skinning (>20% threshold)

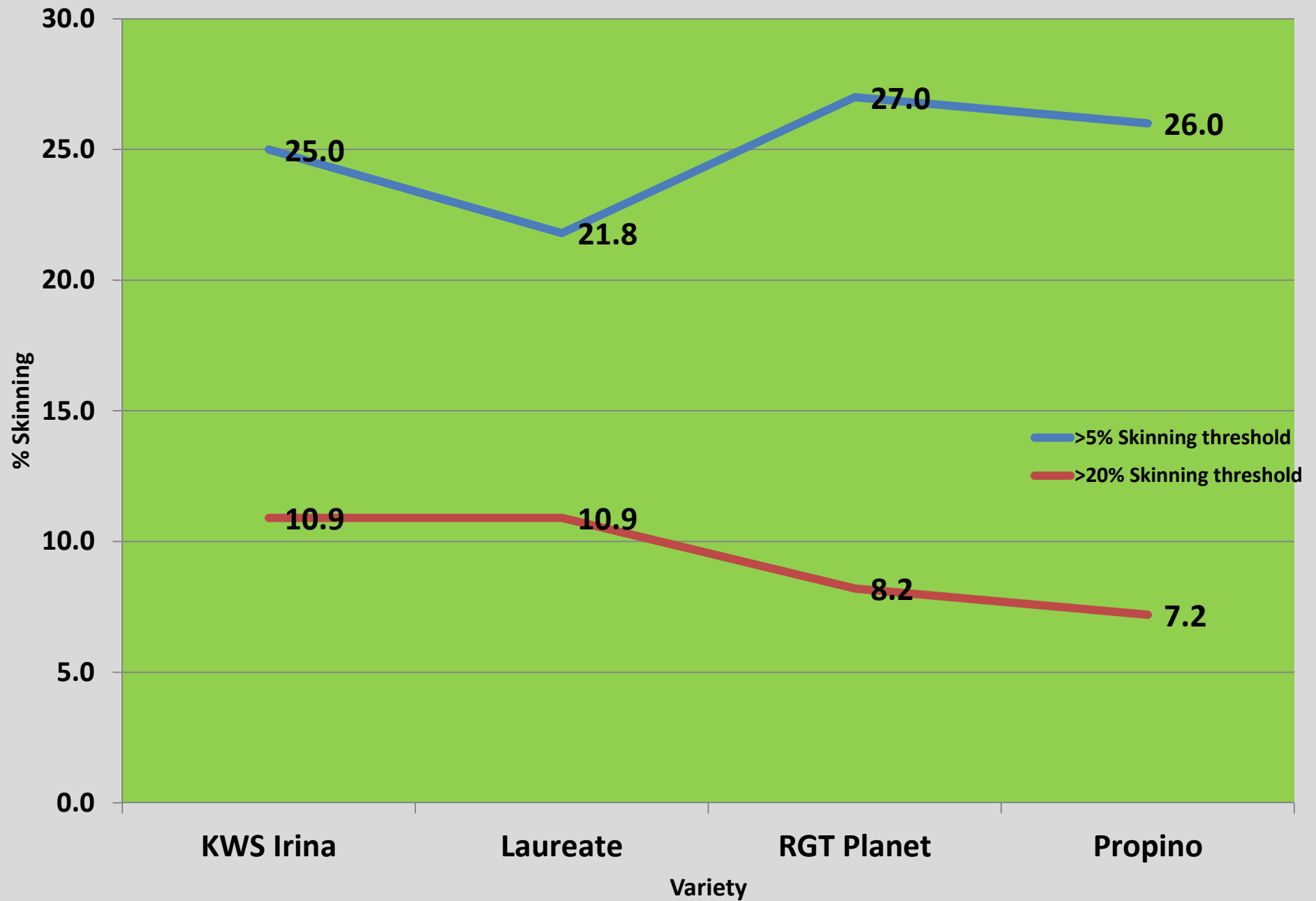


Variety

Harvested 29 Aug

Harvested 04 Oct

Implications of 'skinning thresholds'



In conclusion

- Good suite of malting barley varieties.
- Beware of weaknesses.
- Increased interest in Non GN distilling varieties.
- Reflected in continuing tweaks to DAFM trial system-Scope for expansion of distilling trials?
- First year of dedicated Distilling Micro Malt results from harvest 16 trial.
- DAFM strive to ensure a fit for purpose trial system, adapting to changing trends, for the benefit of the agricultural sector as a whole in Ireland.

- THANK YOU FOR YOUR ATTENTION
- Spring Cereal Lists are available to download on DAFM website under Publications
www.agriculture.gov.ie