

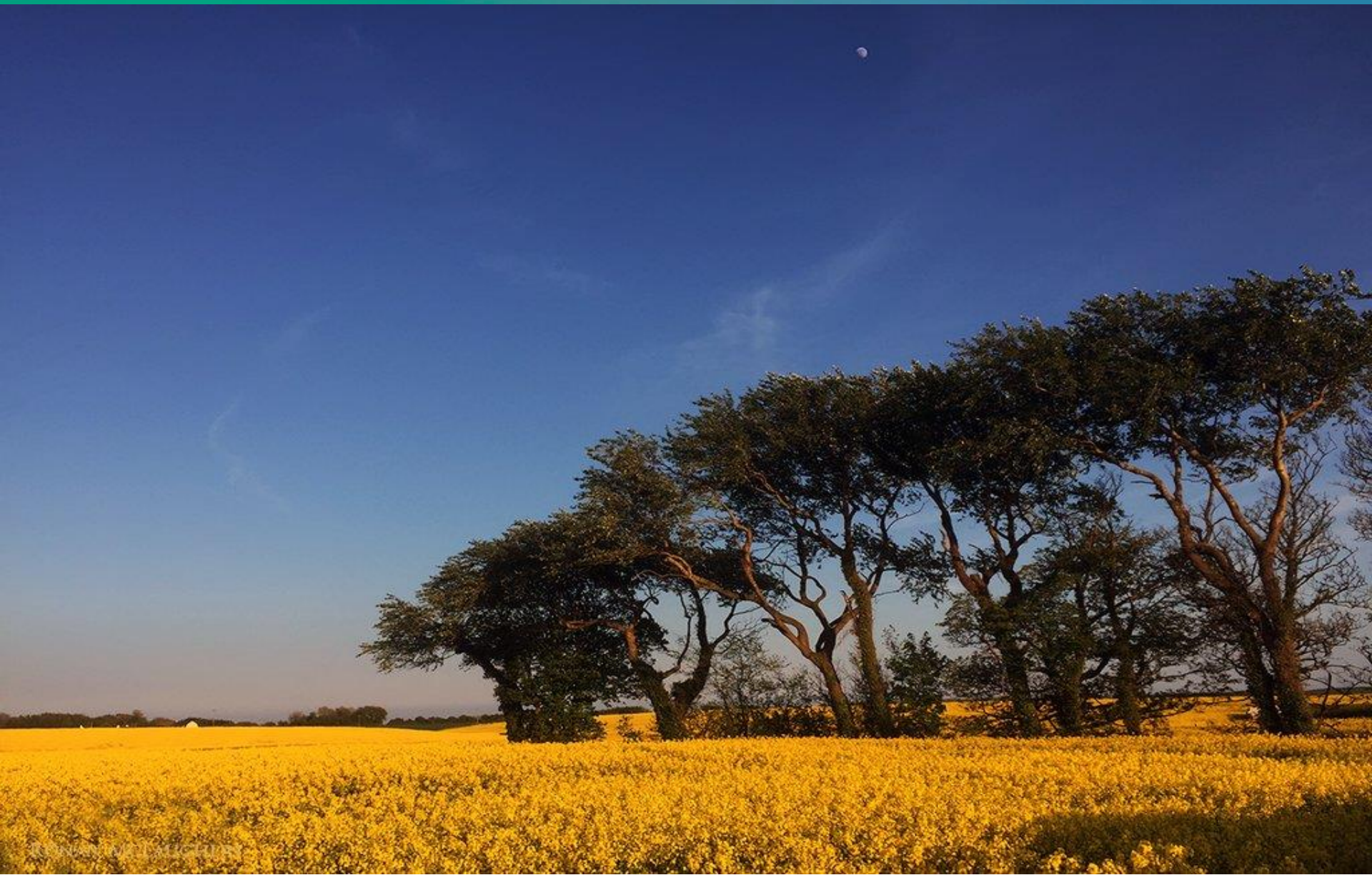
Séamus Kearney,
DAFM, Crop Variety Evaluation, Moorepark, Co. Cork



Overview

- Winter Oilseed Rape.
- Winter Wheat.
- Winter Barley.
- Winter Oats.

Winter Oilseed Rape



WOSR Recommended/National List Trial 2017

- Trialling OSR since 2006.
- Independent variety trialling under IRISH conditions.
- 5 trial sites.
- Controls: Anastasia, DK Extrovert, SY Harnas.
- Sowing rates: Conv V Hybrids.
- Double plots sown.
- One year results available immediately post harvest.
- Recommended list- post harvest 2017.
- Additional untreated plots included at DAFM Centres.



2017 WOSR RL Trials

5 sites

Location	Sowing Date	Harvest date
Backweston	24 th Aug 2016	18 th July 2017
Kildalton	30 th Aug 2016	25 th July 2017
Ballyderown	30 th Aug 2016	10 th Aug 2017
Shanagarry	29 th Aug 2016	5 th Aug 2017
Trim	26 th Aug 2016	24 th July 2017
(5 reps sown in centres)		



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

An Roinn
**Talmhaíochta,
Bia agus Mara**

2016 WOSR contrast to 2017

March 13th 2016

March 17th 2017



2017 WOSR One Year Result

Variety	Type	Trial Year	Breeder	Relative Seed Yield		
				2017 100= 4.9t/ha (1.98t/ac)	2016 100= 3.6t/ha (1.46t/ac)	2015 100= 5.0t/ha (2.02t/ac)
Alabama	H	3	Limagrain	99	100	100
Alizze	H	2	RAGT	102	97	-
Allezan	H	1	RAGT	101	-	-
Anastasia	C	4	Limagrain	100	102	107
Aquila	H	2	Limagrain	108	105	-
Architect	H	1	Limagrain	101	-	-
Dariot	H	2	DSV	104	104	-
DK Extrovert	H	3	Monsanto	98	98	97
Elgar	C	1	Elsoms	99	-	-
ESC Memento	H	1	Euralis	104	-	-
ESC 15044	H	1	Euralis	96	-	-

Variety	Type	Trial Year	Breeder	Relative Seed Yield		
				2017 100= 4.9t/ha (1.98t/ac)	2016 100= 3.6t/ha (1.46t/ac)	2015 100= 5.0t/ha (2.02t/ac)
Hasting	H	2	KWS	98	98	-
Idaho	H	1	DSV	103	-	-
INV 1030	H	2	Bayer	103	98	-
INV 1035	H	1	Bayer	103	-	-
Nikita	C	2	Limagrain	99	97	-
PT234	H	3	DuPont /Pioneer	100	97	99
PT271	H	1	DuPont /Pioneer	103	-	-
PX113	HSD	3	DuPont /Pioneer	98	95	99
PX126	HSD	1	DuPont /Pioneer	97	-	-
Skye	C	1	Elsoms	103	-	-
Sparrow	H	1	DSV	102	-	-
SY Harnas	H	3	Syngenta	102	102	97

2017 WOSR One Year Result- Sites

Variety	All Sites	Backweston	Kildalton	Moorepark	Shanagarry	Trim
Mean t/ha	4.90	4.56	4.64	5.00	5.43	4.89
Alabama	99	103	103	104	92	94
Alizze	102	111	105	96	99	99
Allezan	101	112	102	104	92	95
Anastasia	100	99	100	98	104	100
Aquila	108	112	105	113	105	105
Architect	101	112	102	104	92	94
Dariot	104	106	107	103	102	101
DK Extrovert	98	98	97	100	97	98
Elgar	99	107	99	100	97	98
ESC Memento	104	105	96	106	105	106
ESC 15044	96	103	98	98	91	92

Variety	All Sites	Backweston	Kildalton	Moorepark	Shanagarry	Trim
Mean t/ha	4.90	4.56	4.64	5.00	5.43	4.89
Hasting	98	105	101	94	95	93
Idaho	103	111	105	105	99	95
INV 1030	103	106	102	104	102	101
INV 1035	103	109	98	104	102	103
Nikita	99	94	101	96	101	101
PT234	100	102	98	103	99	98
PT271	103	107	99	108	100	102
PX113	98	95	97	101	99	95
PX126	97	99	96	99	99	94
Skye	103	112	102	106	101	94
Sparrow	102	111	101	102	100	94
SY Harnas	102	103	102	102	98	102

Vigour 2017- (23 Sept 16)

Allezan/ Harnas/ Nikita/ Anastasia



Vigour 2017

SY Harnas and Anastasia



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Bia agus
Marairíochta**

Vigour 2017

Nikita

Dariot



Vigour 2017

Anastasia

Aquila



Vigour 2017- (29 Sept 16)



Seed Germination reports 2016

Sample 9539100604784

Official Seed Testing Laboratory
DAFM Laboratories,
Backweston,
Celbridge,
Co. Kildare,
Ireland.
Tel: (01) 615 7518
Fax: (01) 615 7196
Email: seedtesting@agriculture.gov.ie

Saotharlann Anailís Siolta Oifigiúil,
Saotharlanna na Roinne Talmhalochta, Bia
& Mara,
Bhacastúin,
Cill Droichid,
Co. Cill Dara,
Éire.

ADVISORY REPORT

Barcode	9 539100 604784	Lab Id. of sample	16170532
Name & address of customer	Clodagh Whelan & Brian O Connor, Backweston, Farm, Leixlip, Co. Kildare, Ph., Email:	Reference No.	
Name of Submitter	N/A	Sample Description	Brassica napus var. napus, architect, Undressed

Test/Data/Species	% Normal Germinated Seedlings	% Hard Seeds	Pretreatment	Comments
Germination Brassica napus var. napus 16/12/2016	96	N/A	N/A	Radicle emergence at 30 Hours = 90%.

Date issued: 16/12/2016

Previous issue dates:

Signed:

Note: In the case of those species, varieties, stocks or strains of plants the seeds of which cannot be distinguished from one another by expert examination, the term purity as employed here, does not imply that the seed is genuine to name or description.

Sample 9539100603145

Official Seed Testing Laboratory
DAFM Laboratories,
Backweston,
Celbridge,
Co. Kildare,
Ireland.
Tel: (01) 615 7518
Fax: (01) 615 7196
Email: seedtesting@agriculture.gov.ie

Saotharlann Anailís Siolta Oifigiúil,
Saotharlanna na Roinne Talmhalochta, Bia
& Mara,
Bhacastúin,
Cill Droichid,
Co. Cill Dara,
Éire.

ADVISORY REPORT

Barcode	9 539100 603145	Lab Id. of sample	16170500
Name & address of customer	Brian O Connor, Backweston, Farm, Leixlip, Co. Kildare, Ph., Email:	Reference No.	W0SR
Name of Submitter	N/A	Sample Description	Brassica napus var. napus, anastasia, Undressed

Test/Data/Species	% Normal Germinated Seedlings	% Hard Seeds	Pretreatment	Comments
Germination Brassica napus var. napus 08/12/2016	66	N/A	N/A	Radicle emergence at 30 Hours = 1%.

Date issued: 08/12/2016

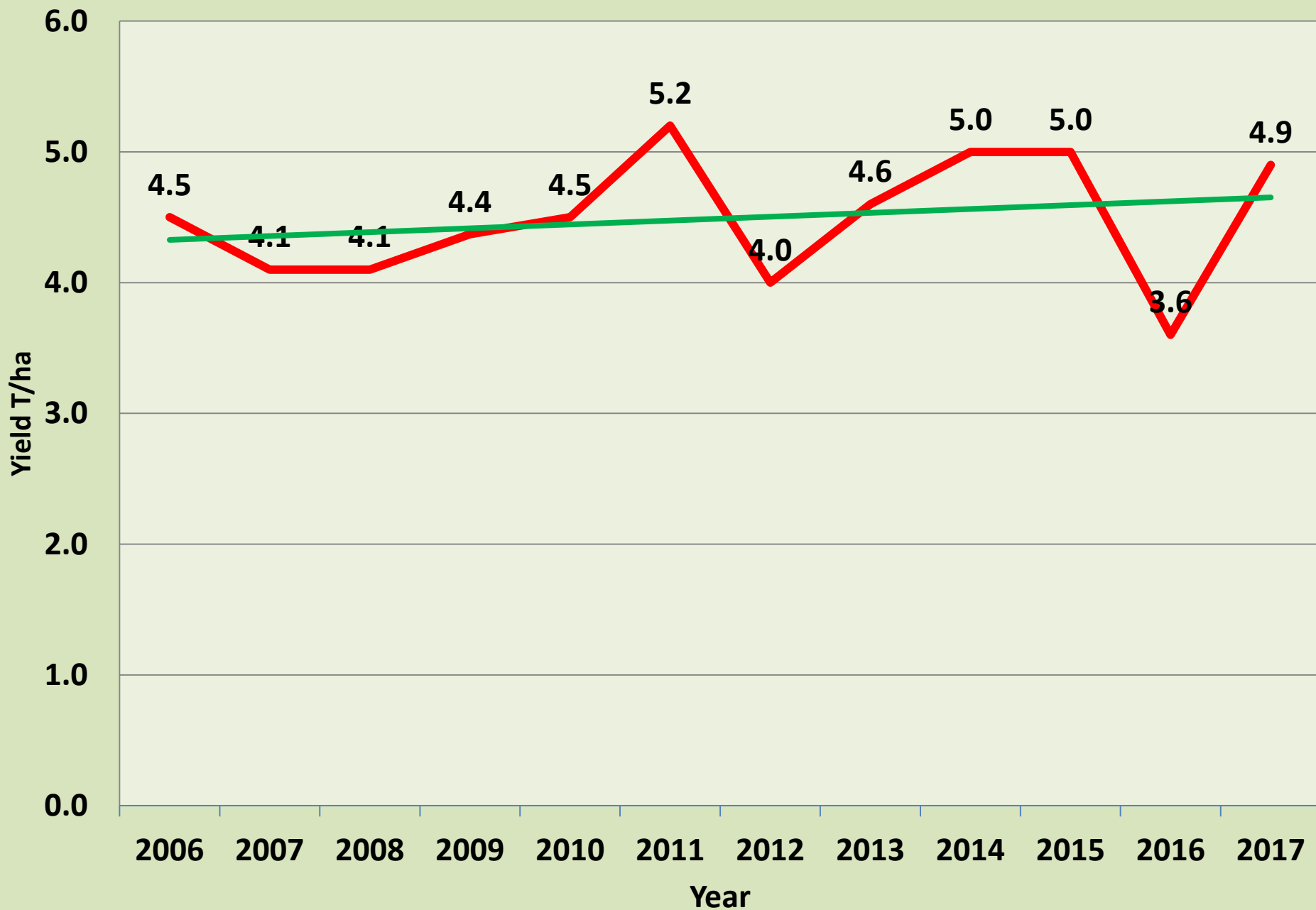
Previous issue dates:

Signed:

Note: In the case of those species, varieties, stocks or strains of plants the seeds of which cannot be distinguished from one another by expert examination, the term purity as employed here, does not imply that the seed is genuine to name or description.

	RECOMMENDED		PROVISIONALLY RECOMMENDED		
	Anastasia	Sensation	DK Extrovert	PX113	SY Harnas
100= 4.5t/ha					
Relative Seed Yield	103	97	98	97	100
Hybrid/Conventional	C	H	H	HSD	H
Oil Content	99	98	101	100	98
Glucosinolate content (µmol/g seed)	16.1	17.8	18.4	15.9	17.4
Early Vigour	(6)	(5)	(7)	(6)	(7)
Full Plant Height (cm)	138	120	137	115	129
Lodging resistance	8	8	7	8	7
Stem Stiffness	8	8	6	8	6
Earliness of flowering	(6)	(6)	(8)	(5)	(6)
Earliness of Maturity	(5)	(5)	(6)	(6)	(5)
Shedding Resistance	(7)	(6)	(8)	(6)	(7)
Light Leaf Spot Resistance	(6)	(6)	(7)	(6)	(6)
Year First Recommended	2017	2014	2017	2017	2017

Winter Oilseed Rape One Year Results 2006 - 2017



2018 WOSR RL Trials

5 sites

Location	Sowing Date
Backweston	28 th Aug 17
Kildalton	29 th Aug 17
Meath	25 th Aug 17
Moorepark	Today
Cork	1 st Sept 17
(5 reps sown in centres)	

2018 WOSR Sowing List

Variety	Type	Trial Year	Breeder	Relative Seed Yield		
				2018	2017 100= 4.90t/ha (1.98t/ac)	2016 100= 3.6t/ha (1.46t/ac)
Alizze	H	3	RAGT	Candidate	102	97
Anastasia	C	5	Limagrain		100	102
Arrow	H	1	Limagrain		-	-
Aquila	H	3	Limagrain	Candidate	108	105
Dariot	H	3	DSV	Candidate	104	104
DK Exalte	H	1	Monsanto		-	-
DK Exclaim	H	1	Monsanto		-	-
DK Expansion	H	1	Monsanto		-	-
DK Extrovert	H	4	Monsanto		98	98
Elgar	C	2	Elsoms		99	-
ESC Memento	H	2	Euralis		104	-

Variety	Type	Trial Year	Breeder	Relative Seed Yield		
				2018	2017 100= 4.90t/ha (1.98t/ac)	2016 100= 3.6t/ha (1.46t/ac)
ESC 16057	H	1	Euralis		-	-
Kielder	C	1	Elsoms		-	-
MH 15HT227	H	1	Momont		-	-
PT256	H	1	DuPont /Pioneer		-	-
PT274	H	1	DuPont /Pioneer		-	-
PX113	HSD	4	DuPont /Pioneer		98	95
PX126	HSD	2	DuPont /Pioneer		97	-
Skye	C	2	Elsoms		103	-
Sparrow	H	2	DSV		102	-
SY Harnas	H	4	Syngenta		102	102
SY Iowa	H	1	Syngenta		-	-
Temptation	H	1	DSV		-	-
Walker	H	1	NPZ		-	-
Zeland	H	1	RAGT		-	-

Pigeon grazing observations 2016



Pigeon grazing 2016



Pigeon grazing 2016



Light Leaf Spot 2016

(15% plants infected = 5% yield loss)



Lodging- Sy Harnas 2017



Lodging- Anastasia



Lodging- Extrovert



Lodging- Dariot



Lodging- DK Exential



Pod shatter 2015

DK Extrovert



Pod shatter 2015

Anastasia



Pod shatter 2015

Compass



Flowering 2017 (9th March)

Elgar

Nikita



Flowering 2017 (16th March)

Elgar

Nikita



Flowering 2017 (16th March)

Dariot

DK Extrovert

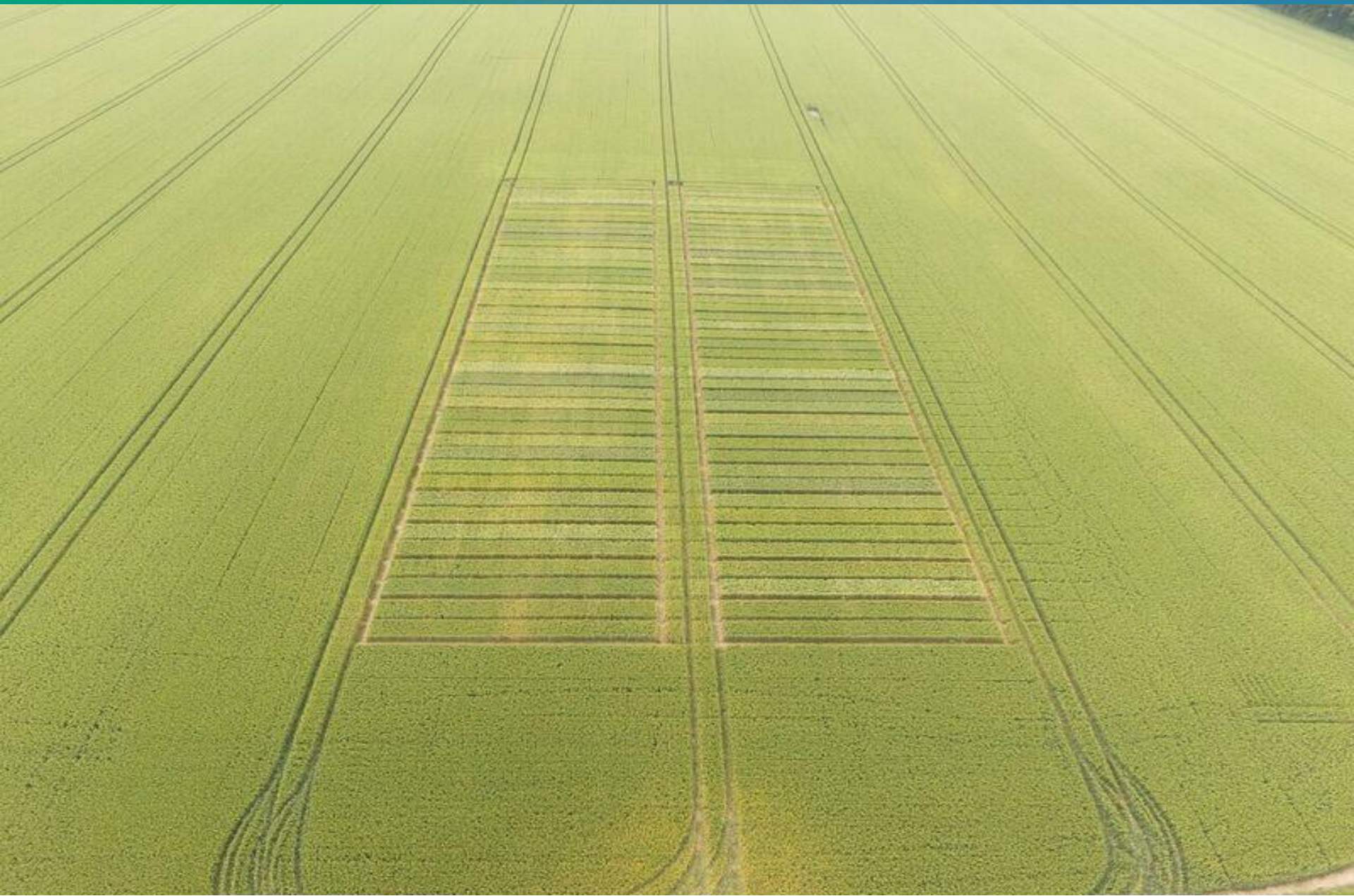


Flowering 2017 (9th March)

Extrovert and PX113



Winter Wheat



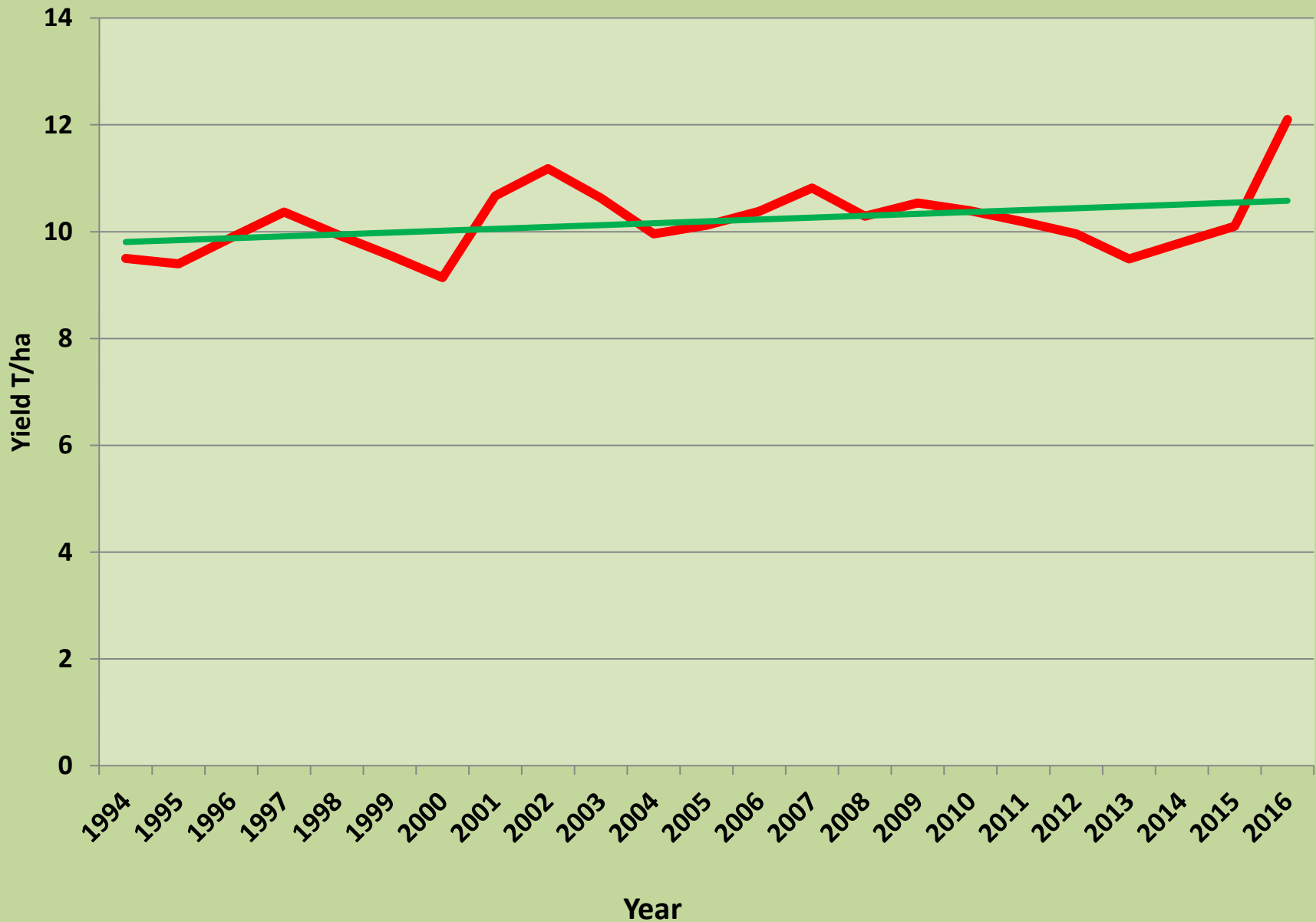
Winter Wheat

- 8 Recommended List trial sites (3 centres plus 5 farm).
- 40 varieties in 2 trials in 2017.
- Control varieties JB Diego and Avatar.
- 5 Unsprayed sites (OBS).
- 3 High Nitrogen sites (HIN).
- 3 Early sown trials.
- Continuous and rotation.
- Milling analysis.
- Speed of development.



Winter Wheat Recommended Lists

Control yields 1994-2016



Winter Wheat 2017 RL Trial

Recommended List 2017	Eligible Varieties 2017	Varieties out of trial for 2017
JB Diego ©	Torp	Monterey
Avatar ©	LG Tattoo	KWS Siskin
KWS Lumos	Bennington	KWS Crispin
KWS Lili	KWS Barny	LG Sundance
Garrus	KWS Fenway	Shabras
Rockefeller	LG Bletchley	LG Mowtown
Costello		LG Lismore
		Marston
		RGT Pembroke

Winter Wheat One year result 2017

	Mean	BN	MK	CKC	Cork	CW	LH	TY
Control mean (t/ha)	12.25	14.09	12.19	12.40	12.80	9.75	12.84	11.46
Control mean (t/ac)	4.96	5.70	4.93	5.02	5.18	3.95	5.20	4.64
JB Diego	100	100	101	102	100	96	98	100
Avatar	100	100	99	99	100	104	102	100
KWS Lumos	100	102	98	103	99	106	96	99
KWS Lili	99	102	100	98	102	100	93	99
Garrus	101	102	99	97	104	107	101	97
Rockefeller	96	98	93	99	95	100	95	93
Costello	100	101	99	100	99	102	99	97
Torp	104	100	105	102	109	109	98	105
LG Tattoo	99	103	104	100	101	96	94	96
Bennington	103	100	102	101	105	111	103	101
KWS Barny	101	100	102	98	99	108	191	102
<u>Previous Crop</u>	S Beans		OSR	WW	OSR	S. Beans	Potatoes	WO

Winter Wheat One year result 2017

	Mean	BN	MK	CKC	Cork	CW	LH	TY
Control mean (t/ha)	12.25	14.09	12.19	12.40	12.80	9.75	12.84	11.46
Control mean (t/ac)	4.96	5.70	4.93	5.02	5.18	3.95	5.20	4.64
KWS Fenway	99	100	100	93	102	101	100	95
LG Bletchley	95	94	99	99	97	81	91	98
KWS Conros	101	101	101	100	102	102	99	101
LG Panama	96	97	98	99	96	93	92	95
Savello	103	105	105	103	102	101	100	105
Reflection	99	96	99	99	100	107	97	94
KWS Talent	97	86	98	86	100	111	104	99
KWS W286	98	99	98	98	98	100	99	96
Gleam	104	104	101	103	104	113	103	102
<u>Previous Crop</u>		S. Beans	OSR	WW	OSR	S. Beans	Potatoes	WO

Winter Wheat 2017 One Year Results

Variety	Year	Seed %	Parentage	2017 100=12.25t/ha (4.96t/ac)	2016 100=11.58t/ha (4.69t/ac)	2015 100= 13.2t/ha (5.3t/ac)
JB Diego	R	39	3351b2 X STRU2374	100	99	101
Avatar	R	10	Istabraq X Lion	100	101	99
KWS Lumos	R	4	Cordiale X Dover	100	100	96
KWS Lili	R	6	KWS Horizon X CPBT W134	99	100	99
Garrus	PR	7	Lear X Oakley	101	103	100
Rockefeller	PR	2	Skalmaje X Kredo	96	103	95
Costello	PR	15	CPBT W151 X CPBT W134	100	100	99
Torp	C	8	Ambition X Symbol	104	103	(106)
LG Tattoo	C		(KWS Target X Lear) X NAWW29	99	103	(103)
Bennington	C	4	Alchemy X Battalion	103	102	(104)
KWS Barny	C	3	Esket X JB Asano	101	103	(102)

Winter Wheat 2017 One Year Results

Variety	Year	Seed %	Parentage	2017 100=12.25t/ha (4.96t/ac)	2016 100=11.58 t/ha (4.69t/ac)	2015 100= 13.2t/ha (5.3t/ac)
KWS Fenway	C		KWS W181 X Gymnast	99	101	(102)
LG Bletchley	C		(Conqueror X Huntress) X NAWW29	95	102	(99)
KWS Conros	1	1	Skalmeje X CPBT W134	101	(103)	(99)
LG Panama	1		Gravitas X Avatar	96	(103)	(99)
Savello	1		Cassius X Hereford	103	(103)	-
Reflection	1		Denman X Oakley	99	(104)	-
KWS Talent	1		Julius X WW4055	97	(102)	-
KWS W286	1		KWS W193 X KWS Gymnast	98	(102)	-
Gleam	1		KWS Kielder X Hereford	104	-	-

Treat one year results with caution!

	Mean	Backweston	Cork	Louth	Tipp	Wat'd
Control mean (t/ha)	11.348	10.580	10.733	13.976	11.337	10.117
Control mean (t/ac)	4.592	4.282	4.344	5.656	4.588	4.094
Einstein	103	102	106+	102	101	107+
Cordiale	97	98	94-	98	99	93-
SJ 08-46	111	110+	122+	106+	103	118+
W 06 - 00642	107	107+	112+	104	100	110+
Crusoe	101	93-	114+	101	93-	105+
Maserati	108	99	127+	102	101	115+
Julius	106	106+	115+	100	99	112+
Ferrari	111	105	127+	106+	103	117+
KWS W187	108	107+	114+	107+	102	111+
KWS W191	105	108+	109+	104	96-	110+
KWS W192	105	104	109+	105+	96-	111+
SJ 09-61	111	112+	117+	108+	108+	112+
SJ 08-48	106	107+	113+	99	102	113+
MH 09-28	104	104	100	102	102	111+
LGW 61 (INO 7138)	105	100	111+	104	102	110+
MH 10-35	101	106+	93-	104	98	104+
NIC 07 - 4134B	110	110+	112+	109+	106+	116+
NA WW44	104	105+	112+	101	94-	112+

SJ09-61 NL1 trial 2012



Emergence Scores

KWS Talent

KWS Lumos

LG Panama



Vigour Scores



Speed of development

Avatar L2 5%

KWS Lili L3 60%



Winter Wheat Early Sown Trials

Speed Of Development

Fast	Medium	Slow
Savello	Avatar	Garrus
LG Bletchley	JB Diego	LG Tattoo
KWS Talent	Bennington	KWS Lili
KWS Lumos	Rockefeller	LG Panama
	Torp	(Grafton)
	KWS Conros	
	Costello	

Heading Scores



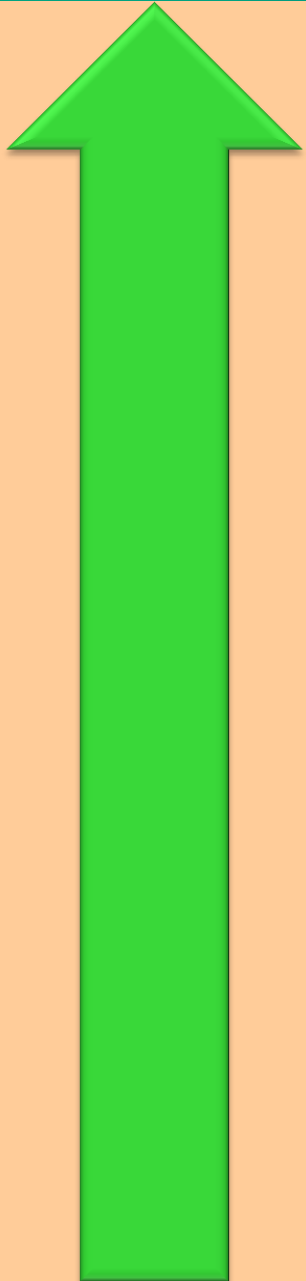
Heading Scores

Cellule

NOS509120.16



Ripening



KWS Lumos

JB Diego

Avatar

Graham

Garrus

Costello

KWS Barny

Bennington

Torp

Rockefeller

KWS Lili

KWS Conros



Ripening Scores



Ripening Scores- Cordiale



Ripening Scores- Revelation



Resistance to Septoria

High

- KWS W320
- SJL123
- Torp
- Cellule
- Rockefeller

Med

- Bennington
- LG Panama
- LG Tattoo
- Garrus
- KWS Conros
- KWS Lili

Low

- JB Diego
- Costello
- KWS Lumos
- RGT Gravity
- Avatar



Resistance to Septoria

Avatar



Resistance to Septoria

Garrus



Resistance to Septoria

Torp



Resistance to Septoria

KWS W320



Resistance to Septoria

Avatar

Bennington

JB Diego



Resistance to Mildew

High

- Costello
- Rockefeller
- Torp
- KWS Conros
- Garrus
- KWS Lili
- Bennington
- Graham

Med

- KWS Lumos
- JB Diego

Low

- KWS Barny
- Avatar
- KWS W320



Resistance to Yellow Rust

High

- Costello
- KWS Conros
- Rockefeller
- Avatar
- KWS Lumos
- Graham

Med

- Bennington
- KWS Lili
- Torp

Low

- JB Diego
- LG Tattoo
- Garrus
- KWS Barny
- Reflection



Resistance to Yellow Rust

Reflection

LG Bletchley



Resistance to Yellow Rust

Rockefeller

JB Diego



Resistance to Fusarium 2016 data

High

- Garrus
- Avatar
- Costello
- Rockefeller

Med

- Bennington
- JB Diego

Low

- KWS Lumos
- KWS Conros
- Torp
- KWS Lili



Resistance to Sprouting 2017

High

- Costello
- Cellule
- KWS Conros

Med

- KWS Lili
- KWS Lumos
- JB Diego
- Rockefeller
- Torp
- Graham
- KWS Barny

Low

- Bennington
- LG Tattoo
- Avatar
- Garrus
- LG Panama
- Savello
- Gleam
- Verso



Sprouting- Avatar 23rd Aug



Sprouting- Bennington 23rd Aug



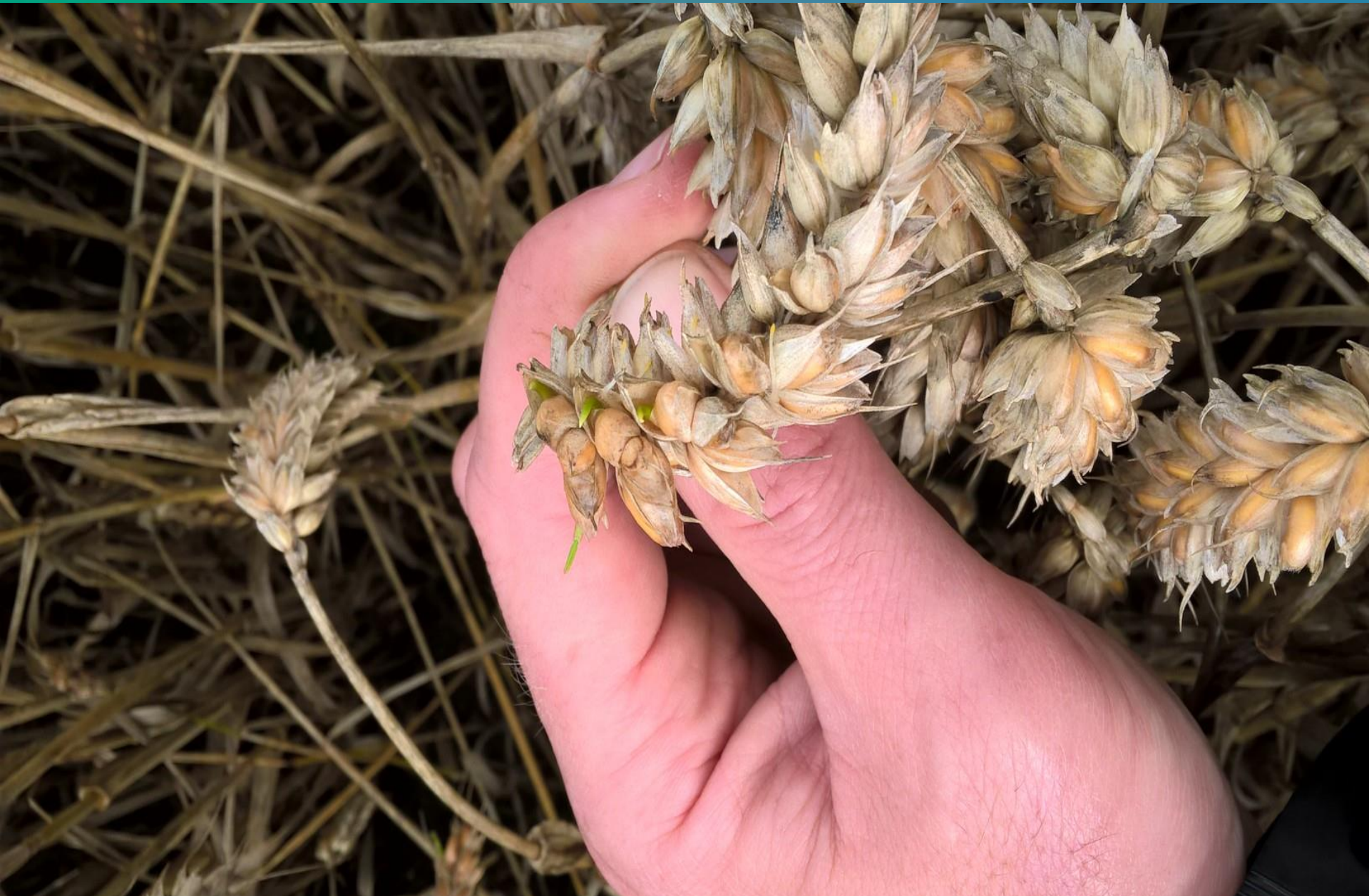
Sprouting- Savello 23rd Aug



Sprouting- Garrus 23rd Aug



Sprouting- Verso 23rd Aug



Sprouting- Glean 23rd Aug



Sprouting- Glean 23rd Aug



Resistance to Lodging

High

- KWS Lumos
- KWS Lili
- Costello
- KWS Conros

Med

- Bennington
- JB Diego
- Avatar
- Garrus
- Torp

Low

- LG Tattoo
- Rockefeller
- Savello



Resistance to Lodging

Freiston

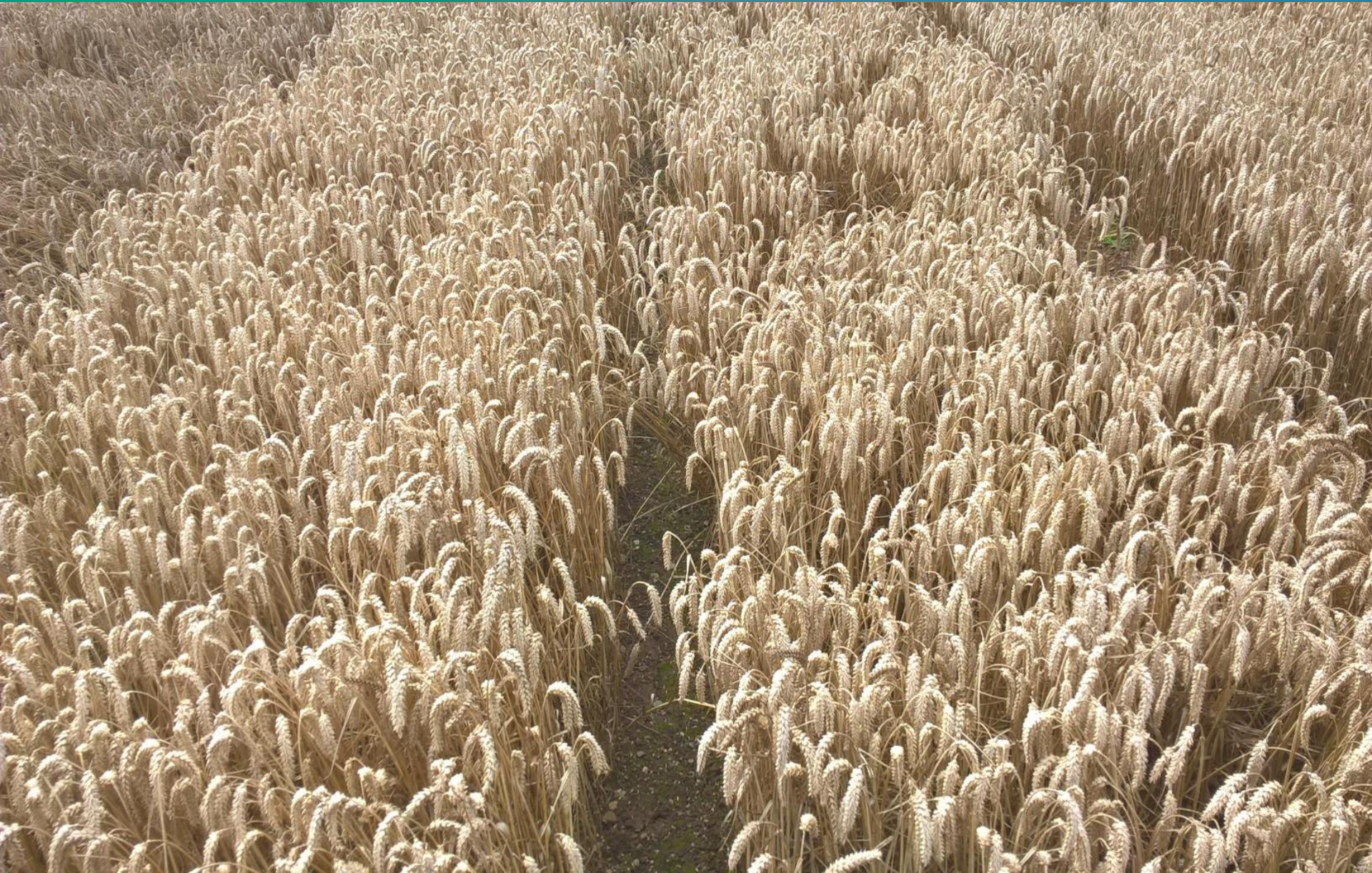
KWS Lumos



Resistance to Lodging

Bennington

Avatar



Resistance to Lodging

KWS Conros

Savello



Resistance to Lodging

LG Tattoo

KWS Lili



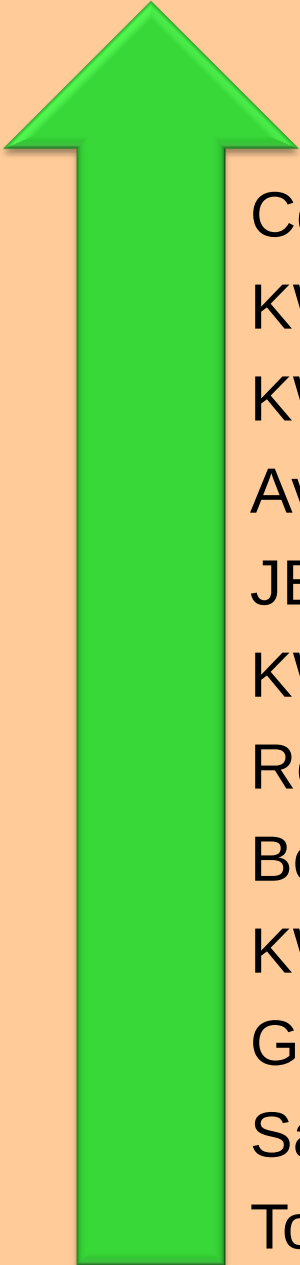
Resistance to Lodging

Elation

KWS Talent



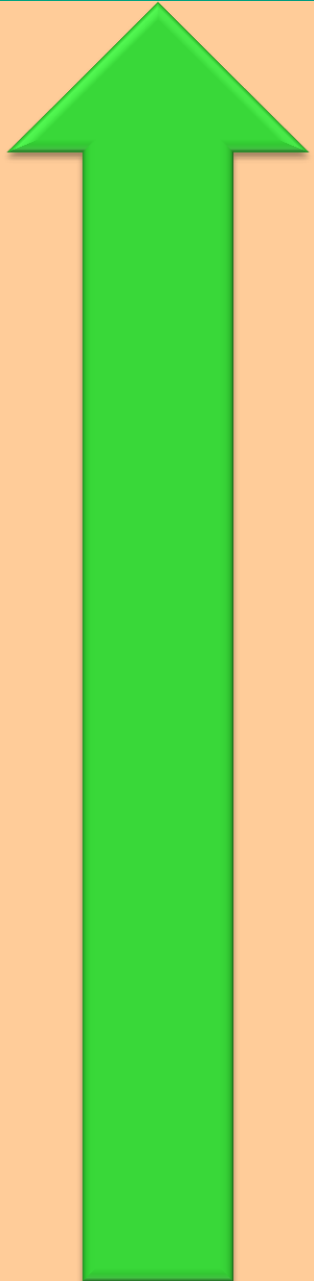
KPH 2017 (7 sites)



Costello	79.9
KWS Lumos	78.3
KWS Conros	77.9
Avatar	77.3
JB Diego	77.1
KWS Barny	77.2
Rockefeller	77.0
Bennington	76.4
KWS Lili	76.3
Garrus	75.3
Savello	74.5
Torp	73.8



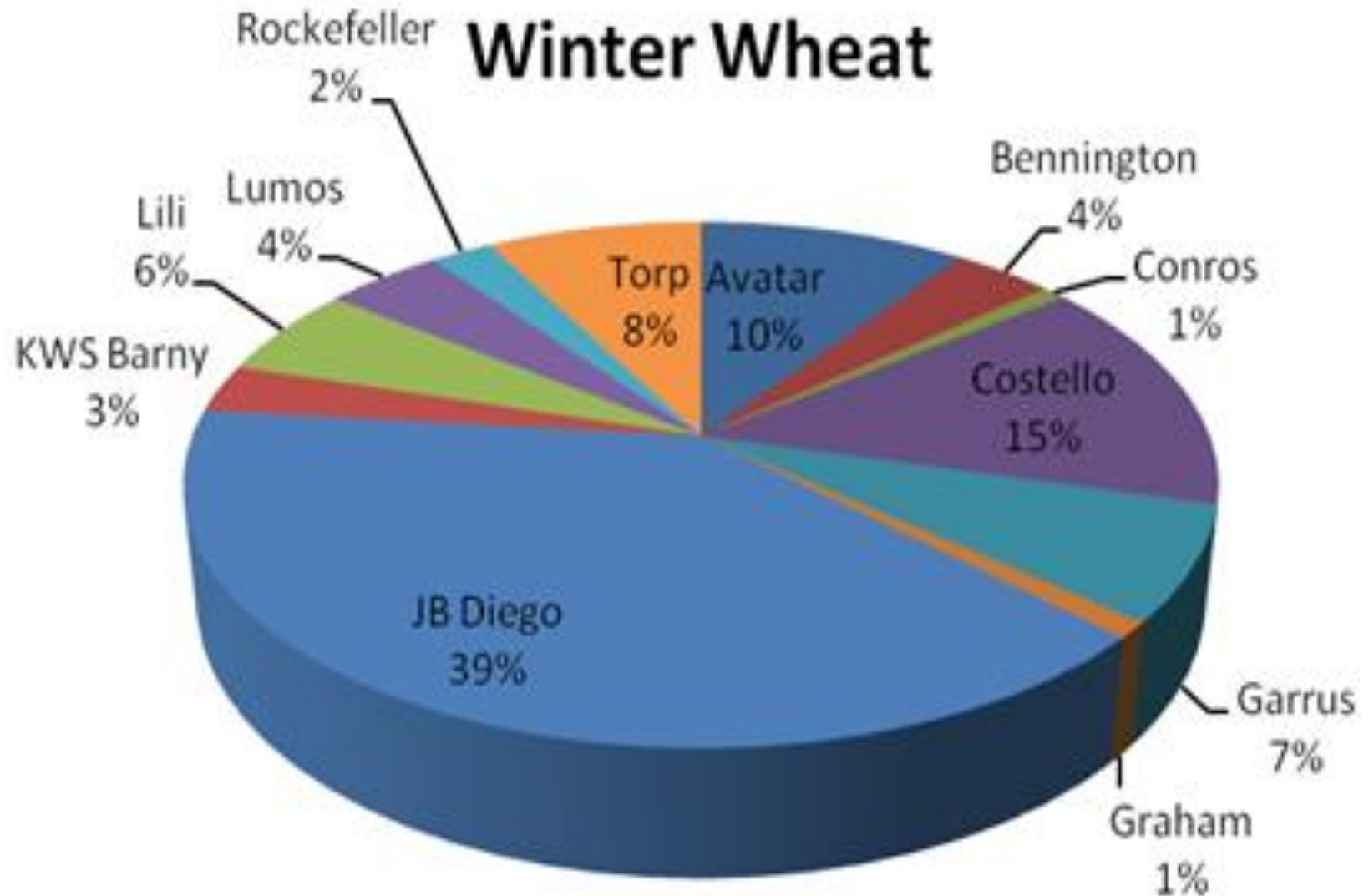
Hagberg 2015



Costello	358
KWS Lumos	352
JB Diego	346
Avatar	309
Rockefeller	307
Bennington	249
KWS Lili	220
Torp	207
Garrus	151



Seed Availability for 2017 sowing



OBS (Unsprayed) plots during season. (4 sites)



Septoria levels in OBS V RL trials- Avatar.



Septoria levels in OBS V RL trials- Garrus.



Treated V Untreated Variety Comparison

Moorepark Trials 2017 (Septoria)

Variety		Untreated yield relative to <u>treated</u> controls in comparable trials
JB Diego		67
Avatar		64
KWS Lumos		66
KWS Lili		71
Garrus		74
Rockefeller		69
Costello		73
Torp		93
LG Tattoo		73
Bennington		90
KWS Barny		73
KWS Conros		75
Reflection		80
Control Yields:		12.19t/ha (4.93t/ac) – OBS 7.88t/ha (3.19t/ac)

Treated V Untreated Variety Comparison

Backweston Trials 2017 (Yellow Rust)

Variety		Untreated yield relative to <u>treated</u> controls in comparable trials
JB Diego		55
Avatar		66
KWS Lumos		67
KWS Lili		63
Garrus		36
Rockefeller		84
Costello		78
Torp		68
LG Tattoo		42
Bennington		71
KWS Barny		50
KWS Conros		85
Reflection		34
Control Yields:		14.09t/ha (5.70t/ac) – OBS 8.54t/ha (3.46t/ac)

1st Wheat V Continuous Sites

Variety Yield Rating 2014-2016

Variety		1 st Wheat 19 trials (C=12.59t/ha)	Continuous Sites 7 trials (C=11.67t/ha)	
JB Diego		100	101	
Avatar		100	99	
KWS Lumos		98	97	
KWS Lili		100	100	
Monterey		99	98	
Garrus		102	101	
Rockefeller		99	98	

Winter Wheat One year Early Sown result 2016

	Mean	MK	KN	KK
Control mean (t/ha)	11.65	12.48	11.51	10.95
Control mean (t/ac)	4.71	5.05	4.66	4.43
JB Diego	100	102	99	98
Avatar	100	98	101	102
KWS Lumos	97	96	100	96
Garrus	103	102	110	95
Rockefeller	101	100	102	99
KWS Lili	102	100	105	102
KWS Crispin	97	94	99	97
KWS Siskin	99	96	99	102
Monterey	97	97	100	92
Hollywood	99	97	102	97
LG Lismore	99	96	106	96
Costello	95	95	95	96
<u>Sowing date</u>		25/09/15	18/09/15	30/09/15

Winter Wheat- Early Sown Trials Results

Variety	3 Year Yield 11.98t/ha	Yield 16 11.7t/ha	Yield 15 12.5t/ha	Yield 14 11.3t/ha
JB Diego	99	100	98	103
Avatar	101	100	102	104
KWS Lumos	98	97	98	102
Garrus	103	103	105	107
Rockefeller	100	101	98	104
KWS Lili	-	102	101	-
KWS Crispin	-	97	100	-
KWS Siskin	-	99	100	-
Monterey	-	97	99	-
Hollywood	-	99	-	-
LG Lismore	-	99	-	-
Costello	-	95	-	-

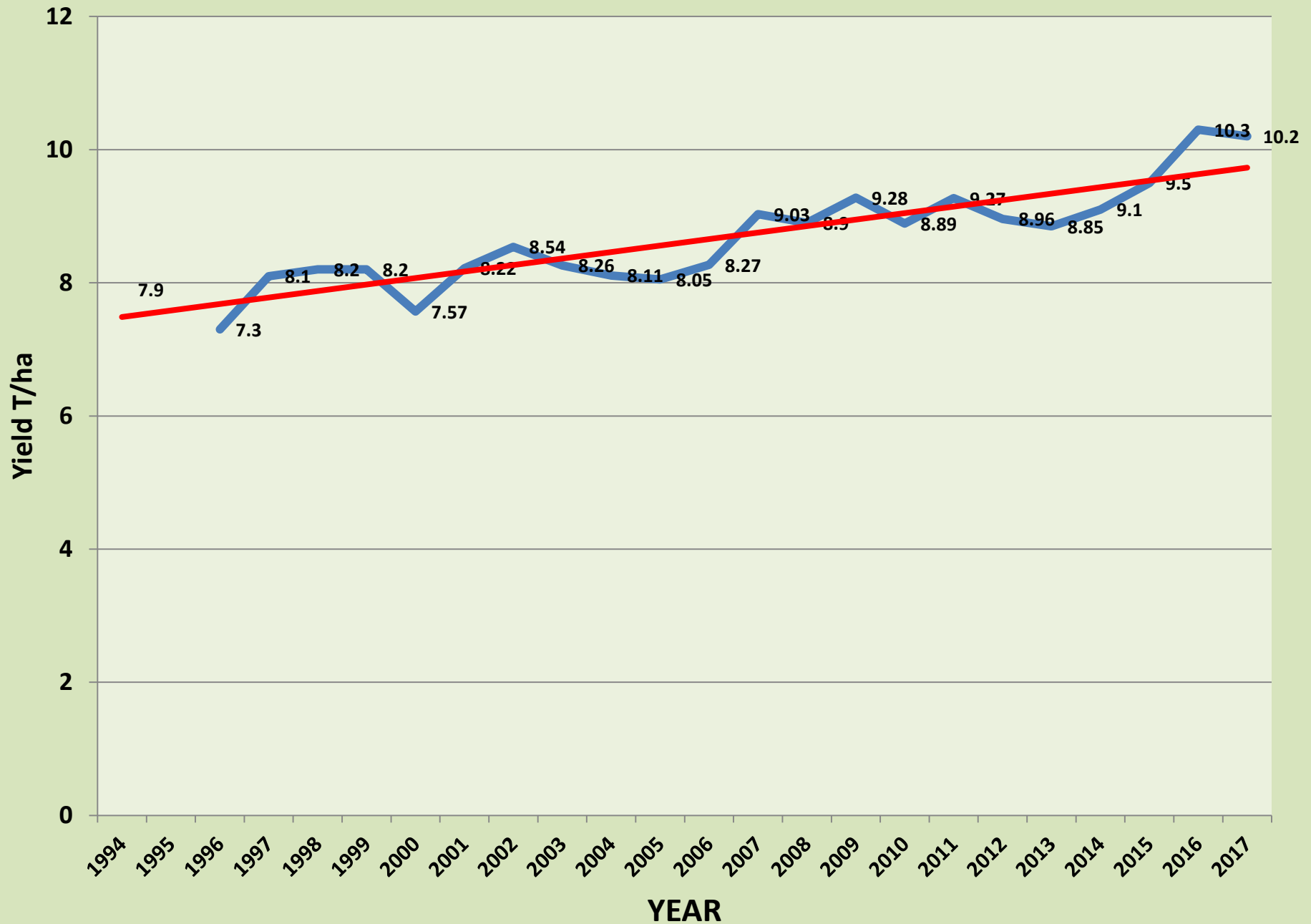
Winter Barley 2017



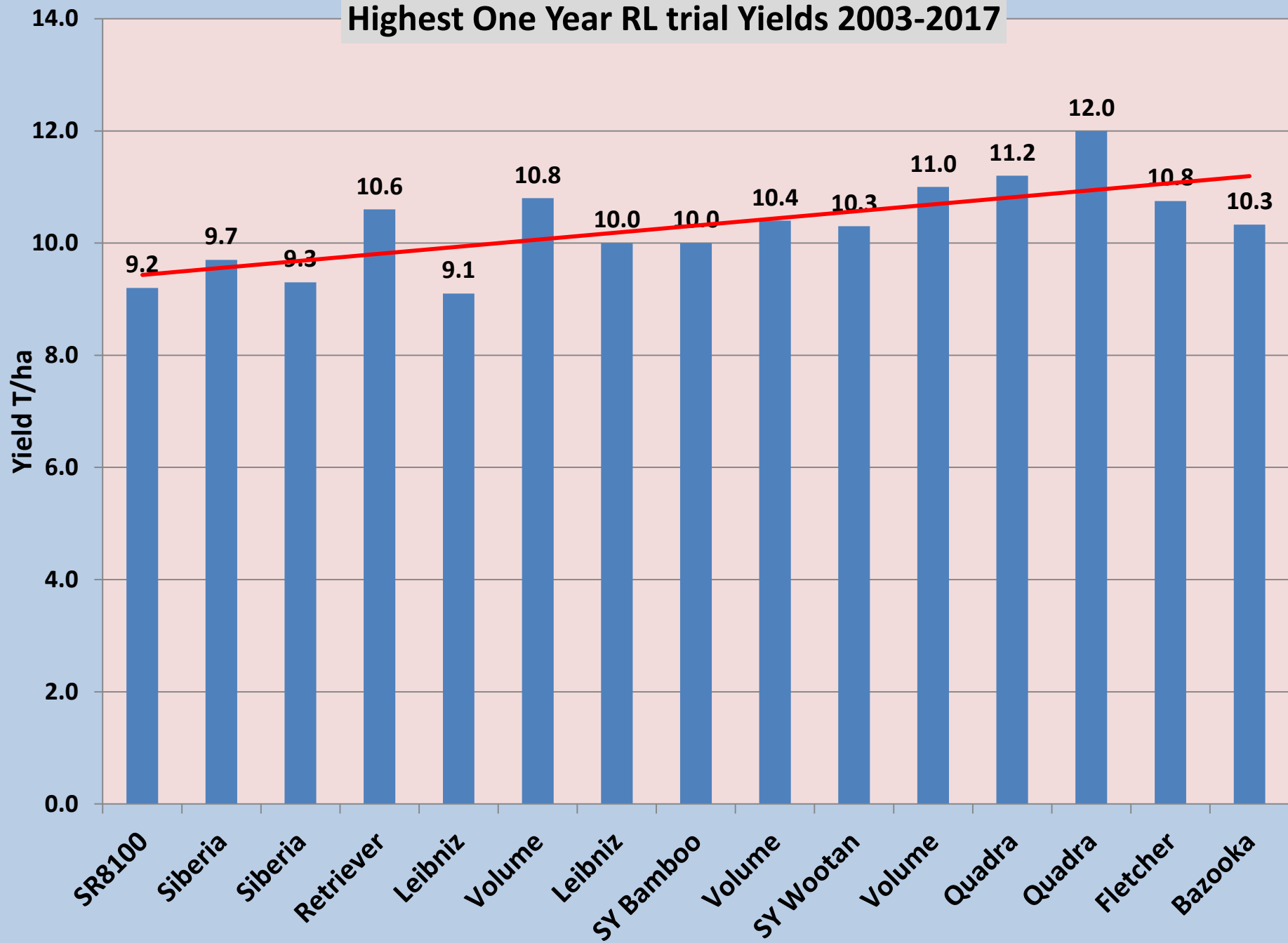
Winter Barley 2017

- 17 varieties in RL trial.
(15 in NL trial)
- 7 main trial sites.
- 4 OBS sites.
- 3 HIN sites.
- Control varieties Leibniz, Cassia, KWS Tower.
- New Hybrid trial for sowing 2017.

Winter Barley RL control yields 1994-2017



Highest One Year RL trial Yields 2003-2017



2017 WB RL Trials

Recommended List varieties 2017	Candidates varieties for 2018	Out of trial in 2017
Leibniz ©	KWS Kosmos	Fletcher
KWS Cassia ©	Funky	Amistar
KWS Tower ©	KWS Astaire	Trooper
Volume (R)		KWS Orwell
Quadra (R)		Casino
KWS Infinity (R)		Companion



Winter Barley One year result 2017

	Mean	BN	MK	Meath	Offaly	W'ford	Cork
Control mean (t/ha)	9.22	11.73	9.50	8.87	8.66	8.35	8.19
Control mean (t/ac)	3.73	4.75	3.84	3.59	3.50	3.38	3.31
Leibniz	104	102	102	105	105	104	106
KWS Cassia	97	96	99	94	98	96	96
KWS Tower	100	102	100	100	97	100	98
Volume	107	98	109	103	107	110	116
Quadra	109	101	111	106	108	117	117
KWS Infinity	102	102	106	95	97	111	104
KWS Kosmos	106	101	103	104	106	118	108
Funky	104	103	106	91	102	118	107
KWS Astaire	104	97	102	101	103	124	104
<u>Previous Crop</u>		S. Beans	WW	WB	WB	WB	SB

Winter Barley One year result 2017

	Mean	BN	MK	Meath	Offaly	W'ford	Cork
Control mean (t/ha)	9.22	11.73	9.50	8.87	8.66	8.35	8.19
Control mean (t/ac)	3.73	4.75	3.84	3.59	3.50	3.38	3.31
KWS Carbis	100	97	104	98	101	100	100
KWS Carneval	98	100	96	92	103	97	98
Pixel	110	108	114	98	106	124	110
Momento	102	99	102	100	104	102	104
Belfry	111	103	109	108	113	120	118
Bazooka	112	106	110	113	110	120	115
Sunningdale	110	101	110	110	109	119	116
KW 6-471	108	103	110	104	109	116	107
<u>Previous Crop</u>		S. Beans	WW	WB	WB	WB	SB

Winter Barley RL One Year Result 2017

Variety	Year	Seed %	Ear	Parentage	2017 (100= 9.22t/ha)	2016 (100= 9.8t/ha)	2015 (100= 10.7t/ha)
Leibniz	R		6R	LP 6-936 X BCym5	104	104	102
KWS Cassia	R	25		(Eden X Carat) X Saffron	97	98	98
KWS Tower	R	30		Saffron X Retriever	100	98	105
Volume	R		6RH	F1 Hybrid	107	108	109
Quadra	R	8	6RH	F1 Hybrid	109	105	112
KWS Infinity	R	19		KWS Cassia X Retriever	102	99	102
KWS Kosmos	C	6	6R	G1530/06 X KWS Meridian	106	107	111
Funky	C		6R	Gigga X KWS Meridian	104	99	(111)
KWS Astaire	C		6R	(Saturn X KWS Meridian) X LP 6-855	104	108	(102)

Winter Barley RL One Year Result 2017

Variety	Year	Seed %	Ear	Parentage	2017 (100= 9.22t/ha)	2016 (100= 9.8t/ha)	2015 (100= 10.7t/ha)
KWS Carbis	2			KWS Tower X KWS Cassia	100	100	(105)
KWS Carneval	2	5		(Florentine X California) X KWS Glacier	98	101	-
Pixel	1		6R	Etincel X (Henriette X Limpid)	110	(105)	-
Momento	1			(Basilic X KWS Cassia)	102	(101)	-
Belfry	1	1	6RH	(F1 Hybrid)	111	(113)	-
Bazooka	1	5	6RH	(F1 Hybrid)	112	(114)	-
Sunningdale	1		6RH	(F1 Hybrid)	110	(111)	-
KWS6-471	1		6R	(LP-6-826 X KWS Meridian) X KW 6- 059	108	(109)	-

Volume V KWS Cassia yields 2010-2017

Volume V KWS Cassia:
8 years average = 1.02t/ha

2017-	0.93t/ha
2016-	0.98t/ha
2015-	1.17t/ha
2014-	0.92t/ha
2013-	1.16t/ha
2012-	0.86t/ha
2011-	1.26t/ha
2010-	0.88t/ha



Quadra V KWS Tower yields 2013-2017

Quadra V KWS Tower:
5 years average = 0.75t/ha

2017-	0.83t/ha
2016-	0.69t/ha
2015-	0.74t/ha
2014-	0.71t/ha
2013-	0.78t/ha



KPH 2017

High

• Libra	71.0*
• Momento	70.9
• KWS Cassia	70.0
• Funky	69.0
• Belfry	69.1

Med

• KWS Carneval	68.8
• Bazooka	68.8
• Quadra	68.8
• Pixel	68.5
• Sunningdale	68.5
• KWS Infinity	68.1
• Volume	67.4
• KWS Tower	67.1

Low

• KWS Kosmos	66.4
• Leibniz	66.3
• KWS 6-471	66.2
• KWS Astaire	65.6



TGW 2017

High

- KWS Tower 58.2
- KWS Infinity 57.3
- KWS Carneval 56.6
- KWS Cassia 56.6

Med

- Momento 55.8
- KWS Astaire 53.5
- KWS 6-471 53.3
- KWS Kosmos 51.6
- Leibniz 51.4

Low

- Pixel 49.7
- Belfry 49.6
- Sunningdale 49.1
- Bazooka 48.8
- Quadra 48.7
- Volume 44.7



Resistance to Lodging

High

- KWS Cassia
- KWS Infinity
- KWS Tower
- Quadra
- Belfry
- Bazooka
- Pixel
- KWS Carneval
- KWS Astaire

Med

- Leibniz
- KWS Kosmos
- Funky

Low

- Volume
- Momento



Resistance to Lodging

Volume

Bazooka



Resistance to Lodging

Belfry

KWS Infinity



Resistance to Brackling

High

- KWS Cassia
- KWS Carneval
- Momento

Med

- KWS Infinity
- Quadra
- Belfry
- Bazooka
- KWS Astaire
- KWS Tower

Low

- KWS Kosmos
- KW 6-471
- Leibniz
- Sunningdale
- Funky
- Volume
- Pixel



Resistance to Brackling

Quadra

Volume



Resistance to Brackling

Pixel

Bazooka



Resistance to Brackling

Funky

KWS Astaire



Resistance to Mildew

High

- KWS Kosmos
- KWS Astaire
- Leibniz

Med

- Pixel
- KWS Tower
- Quadra
- Belfry
- Funky
- Bazooka

Low

- KWS Cassia
- KWS Infinity
- KWS Carneval
- Momento
- Volume
- KWS Carbis
- Libra



Mildew season

KWS Infinity, 29 Dec 16



Resistance to Mildew

KWS Cassia



Resistance to Mildew

Bazooka



Resistance to Mildew

Belfry



Resistance to Mildew

KWS Kosmos



Resistance to Brown Rust

High

- KWS Cassia
- KWS Carneval
- KWS Infinity
- Bazooka

Med

- KWS Tower
- Volume
- Quadra
- Belfry
- KWS Kosmos
- Funky
- KWS Astaire

Low

- Leibniz



Resistance to Rhynchosporium

High

- Quadra
- Volume
- Bazooka
- Belfry
- KWS Kosmos
- Leibniz
- Sunningdale
- Pixel

Med

- KWS Infinity
- Momento
- KWS Carneval
- KWS Tower

Low

- KWS Cassia
- KWS Carbis

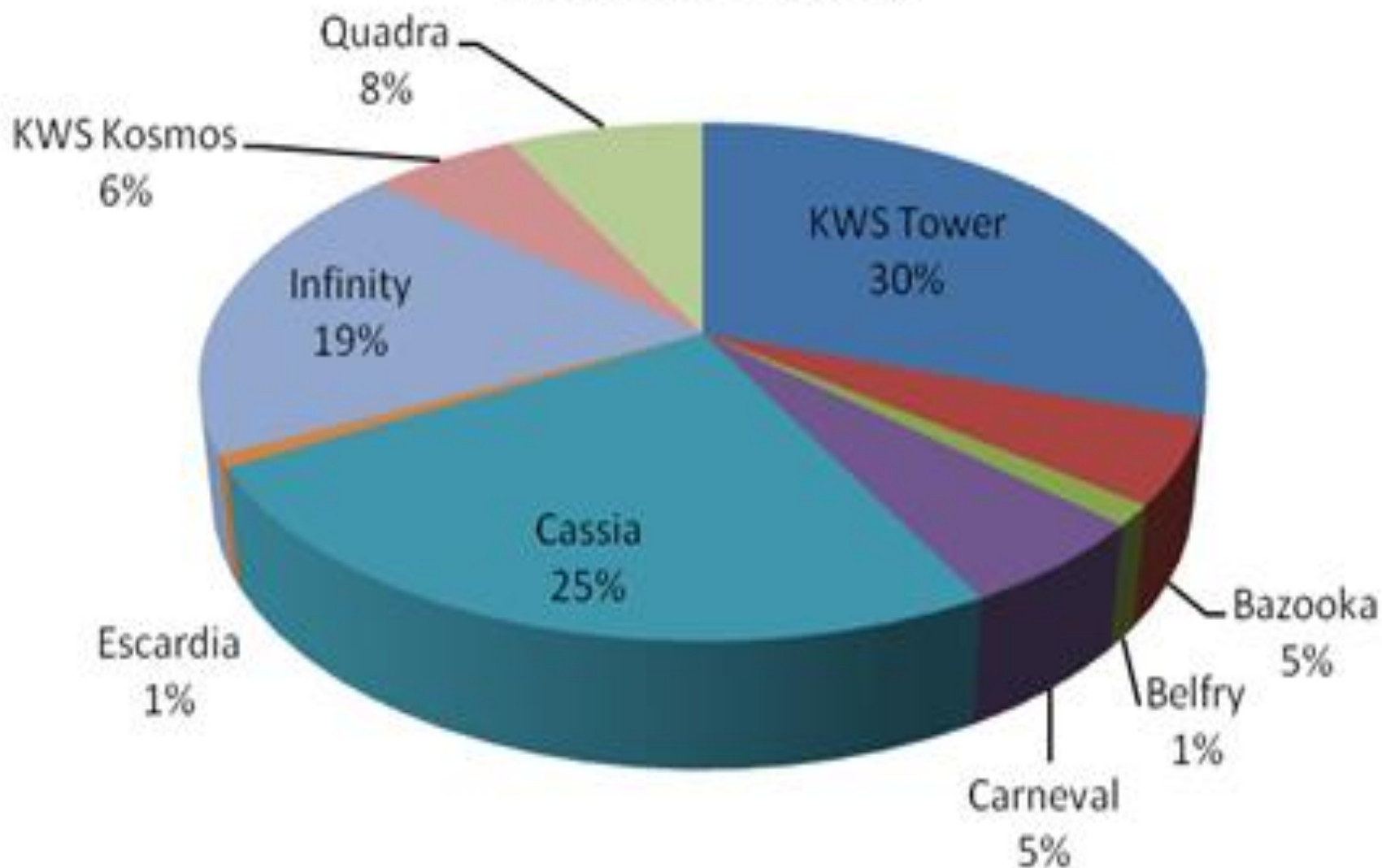


Treated V Untreated Variety Comparison from comparable trials 2016

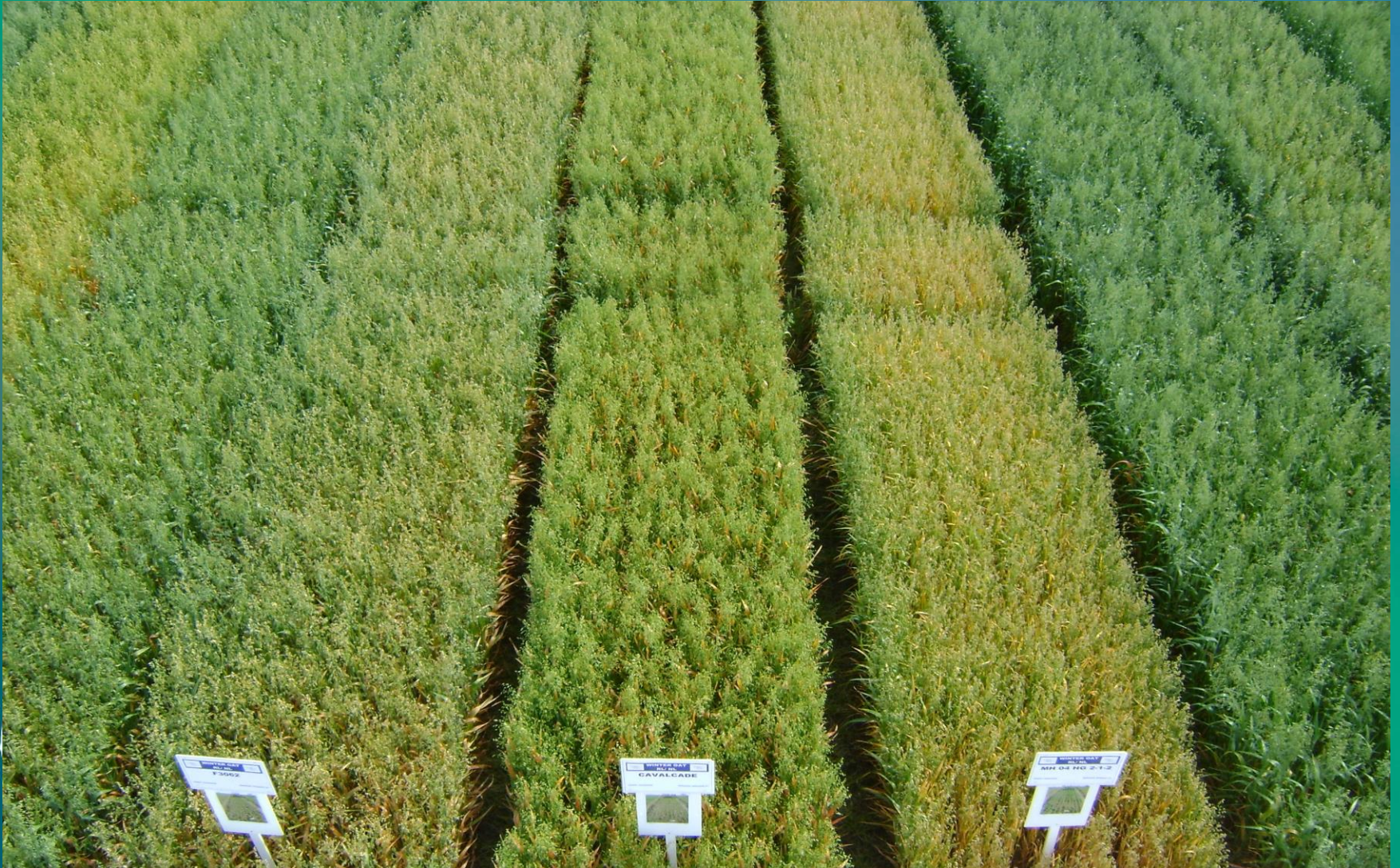
Variety		Untreated yield relative to <u>treated</u> controls in comparable trials
Leibniz		56
KWS Cassia		74
KWS Tower		61
Volume		77
Quadra		76
KWS Infinity		75
Trooper		85
KWS Kosmos		84
KWS B112		70
KWS B119		72
Control Yields:		10.11t/ha (4.09t/ac)

Seed Availability for 2017 sowing

Winter Barley



Winter Oats



Winter Oat Trials

- Combined RL/NL Trial.
- 10 varieties in trial in 2017.
- 8 Spring and 2 true Winter varieties.
- Barra on list RL since 1986.
- 5 Main trial sites.
- 4 OBS sites.
- 3 HIN sites.

Winter Oat RL/NL trial 2017

One Year Result

Variety	S/W	Breeder	2017 100=9.41t/ha (3.81t/ac)	2016 100=9.46t/ha (3.83t/ac)	2015 100=9.9t/ha (4.0t/ac)
Barra	S	SW Seeds	96	99	96
Husky	S	Nordsaat	105	101	104
Keely	S	Nordsaat	98	102	102
Avanti	S	SW Lantmannen	104	104	108
Montrose	S	SW Lantmannen	101	105	106

Winter Oat RL/NL trial 2017

One Year Result

Variety	S/W	Breeder	2017 100=9.41t/ha (3.81t/ac)	2016 100=9.46t/ha (3.83t/ac)	2015 100=9.9t/ha (4.0t/ac)
RGT Victorious	W	RAGT	94	103	-
Delfin	S	Nordsaat	111	109	-
WPB Isabel	S	Wiersum	101	-	-
RGT Southwark	W	RAGT	95	104	-
NORD 12-325	S	Nordsaat	103	-	-

Winter Oat RL/NL trial 2017- Grain quality

Variety	S/W	Breeder	2017 100=9.41t/ha (3.81t/ac)	2017 KPH	2017 KERNAL %
Barra	S	SW Seeds	96	58.6	77.1
Husky	S	Nordsaat	105	58.0	77.4
Keely	S	Nordsaat	98	58.1	77.6
Avanti	S	SW Lantmannen	104	56.9	76.2
Montrose	S	SW Lantmannen	101	56.5	76.1

Winter Oat RL/NL trial 2017- Grain quality

Variety	S/W	Breeder	2017 100=9.41t/ha (3.81t/ac)	2017 KPH	2017 KERNAL %
RGT Victorious	W	RAGT	94	54.8	75.2
Delfin	S	Nordsaat	111	56.2	74.6
WPB Isabel	S	Wiersum	101	60.2	79.1
RGT Southwark	W	RAGT	95	57.3	77.1
NORD 12-325	S	Nordsaat	103	55.8	74.9

Brackling 2017

Barra



WPB Isabel



Brackling 2017

Husky



Keely



Winter Oats RL/NL

Winter Hardiness

Barra spring 2011



Husky spring 2011



Winter Oats RL/NL

Winter Hardiness

Circle spring 2011



MH HG 2-1-2 spring 2011



Barra



Husky



Circle



MH HG 2-1-2



