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FAR Cultivar Evaluation

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FAR CULTIVAR EVALUATION

FOUNDATION FOR ARABLE RESEARCH

FAR

autumn sown wheat and barley 2024/2025

contents

introduction and welcome

The 2024-25 season was challenging for many growers. Almost all regions had periods of high rainfall which affected input management for some crops. Solar radiation during grain fill was below average for all regions except Southland, resulting in a later harvest than the previous two seasons for most wheat trials.

Despite the weather challenges, yields from Canterbury irrigated feed and milling wheat trials, at 13.2 t/ha and 10.7 t/ha, were similar to 4-year means respectively. Canterbury dryland feed wheat trial yields were 9.7 t/ha. This was lower than the 4-year mean of 10.5 t/ha. Dryland feed wheat was also lower than the 4-year mean in the lower North Island.

Uneven waterlogging in part of the Oreti feed wheat trial in Southland influenced yield. The affected areas have been excluded from results.

Disease ratings in many wheat cultivars changed this year, particularly for Septoria tritici blotch (STB) and Fusarium head blight (FHB).

Barley yields across all regions were higher than the 4-year mean. Scald, leaf rust and powdery mildew ratings have changed.

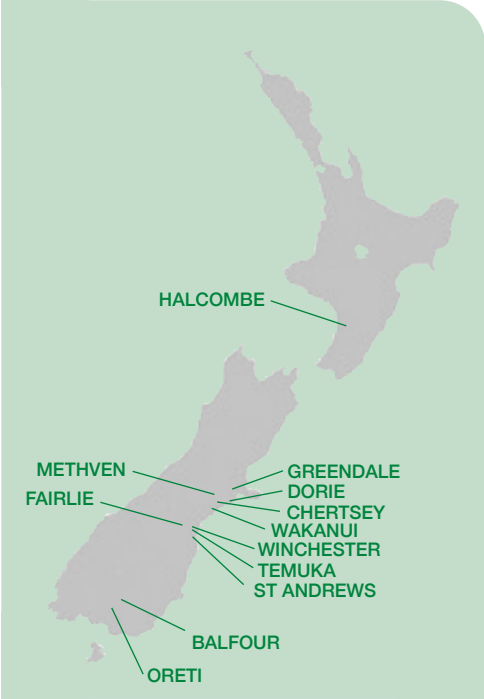
For individual cultivar disease ratings see the agronomic comments at the end of this book. To find out more about the weather at each trial location, head to the FAR website www.far.org.nz and search for Harvest Snippets 2025; these publications include monthly weather summaries across the growing season.

After many years, FAR's long-standing CPT Manager, Tabitha Amour has moved on. We would like to thank Tabitha for all her hard work in delivering the cultivar evaluation programme.

Joanne Drummond
Senior Researcher - Cereals

Jacqueline Straathof
CPT Manager

wheat - trial site details



2024/2025 trial site location map.

BALFOUR (Feed Wheat)

Crookston loam, Dryland
Trial operator: Chetan Parab,
Plant & Food Research
Host farmer: Collins Farming Ltd

After a pea crop, this dryland trial was sown on 4 April 2024 into a paddock planted with the cultivar Firelight. A total of 270 kg/ha of nitrogen (N) was applied in three separate applications, supplementing a baseline soil N level of 49 kg N/ha (0-30 cm). The trial was treated with two herbicide applications, two fungicide applications, and one plant growth regulator (PGR) treatment. Harvest took place on 17 February 2025.

CHERTSEY (Feed Wheat)

Templeton_9a.1, Dryland and Irrigated
Trial operator: NZ Arable
Host farmer: FAR Chertsey Arable Site

These trials were sown at the FAR Arable Site on 17 April 2024 following turf ryegrass. Soil N measured 38 kg/ha (0-50 cm). N fertiliser was applied as Nrich SOA and two applications of SustaiN®. The dryland trial received 156 kg N/ha, while the irrigated site received 261 kg N/ha. Both trials received four herbicide and three fungicide applications and slug bait. The plant growth regulator (PGR) Stabilan® went on both trials with Moddus Evo® added to the irrigated trial. Six applications of water totalling 155 mm were applied to the irrigated site. The dryland trial was harvested on 22 January and the irrigated trial was harvested on 14 February, 2025.

DORIE (Milling Wheat)

Templeton silt loam, Irrigated
Trial operator: Russell Kirk,
Plant & Food Research
Host farmer: Geoff Maw

Following a white clover crop, this trial was sown on 10 May 2024 into a paddock planted with the cv. Reliance. A total of 190 kg N/ha was applied through ammonium sulphate, liquid fertiliser, and three Urea applications. Crop management involved five fungicide treatments, two herbicide applications, and two plant growth regulator (PGR) treatments. Some lodging was observed. The trial was harvested on 31 January 2025.

FAIRLIE (Feed Wheat)

Claremont silt loam, Dryland
Trial operator: NZ Arable
Host farmer: Ashley Biggs

This dryland trial was sown on 4 April 2024 into a paddock previously drilled with the cv. Voltron, following a ryegrass crop. A total of 213 kg N/ha was applied through two DAP, one SOA and two Urea applications. During the growing season the crop received two herbicide treatments, three fungicide applications, two insecticide sprays, and one plant growth regulator (PGR) application. Soil N levels were not reported. The trial was harvested on 1 March 2025.

GREENDALE (Milling Wheat)

Mayfield moderately deep silt, Irrigated
Trial operator: Ashley Harrison,
PGG Wrightson Grain
Host farmer: Graeme Marshall

This irrigated trial was sown on 28 May 2024 into a paddock planted with the cv. Aston, following a white clover crop. Baseline soil N was measured at 100 kg/ha (0-60 cm), and an additional 260 kg N/ha was applied through three applications of SustaiN®. Crop management included a plant growth regulator (PGR) mix and three fungicide treatments. A total of 190 mm of irrigation was applied throughout the season. The trial was harvested on 22 February 2025.

HALCOMBE (Feed Wheat)

Marton clay loam, Dryland
Trial operator: Kevin Sinclair,
Plant & Food Research
Host farmer: James Abbiss

Following forage brassica, this dryland trial was established in a paddock sown in cv. Graham on 20 April 2024. Background soil N measured 29 kg N/ha (0-60 cm), with the trial receiving a further 147 kg N/ha, applied via two applications of SustaiN® and one application of NPKS. The trial received three herbicide and two insecticide applications, four fungicide applications plus a PGR. It was harvested harvest on 20 January 2025.

METHVEN (Feed Wheat)

Mayfield stony silt loam, Irrigated
Trial operator: Briar Kinney,
Plant Research (NZ) Ltd
Host farmer: David and Sam Grant

The trial was established into a paddock sown in cv. Graham on 6 April 2024, following linseed. Background soil N measured 14 kg N/ha (0-50 cm). Applied N totalled 265 kg N/ha via four applications of Urea. The trial received four herbicide and three fungicide applications, plus two insecticides and a PGR mix. Irrigation totalling 62 mm was applied in two passes. The trial was harvested on 7 March 2025.

METHVEN (Milling Wheat)

Templeton silt loam, Irrigated
Trial operator: Ashley Harrison,
PGG Wrightson Grain
Host farmer: Bevan Lill

The trial was established into a paddock sown in cv. Aston on 11 May 2025, following potatoes. Background soil N measured 123 kg/ha (0-60 cm). Applied N totalled 271 kg N/ha via one application of Cropmaster 15, one of Ammonium Sulphate, one of N-protect, liquid fertiliser and two applications of Urea. The trial received three herbicide and four fungicide applications, plus three insecticides and a PGR mix. Irrigation totalling 188 mm was applied in eight passes. The trial was harvested on 16 February 2025.

ORETI (Feed Wheat)

Claremont silt loam, Dryland
Trial operator: Chetan Parab,
Plant & Food Research
Host farmer: Robbie Clark

This dryland feed wheat trial was drilled on 23 April 2024 following beans. Background soil N measured 110 kg/ha (0-60 cm). The trial was harvested on 14 March 2025. No other data was recorded.

ST ANDREWS (Feed Wheat)

Claremont silt loam, Dryland
Trial operator: Russell Kirk,
Plant & Food Research
Host farmer: Richard Porter

This dryland feed wheat trial was sown on 9 April 2024 into a paddock planted with the cv. Graham, following a pea crop. Baseline soil N was measured at 54 kg/ha (0-30 cm), with a further 210 kg N/ha applied via DAP and two Urea applications. The crop received two herbicide treatments and two fungicide applications. The trial was harvested on 5 February 2025.

TEMUKA (Feed Wheat)

Waimakariri silt loam, Irrigated
Trial operator: Matt Hicks, Cropmark Seeds
Host farmer: Ben Collis

This irrigated trial was established on 17 April 2024 into a paddock sown in cv. Kerrin, following a maize crop. Background soil N was 66 kg/ha (0-60 cm). Applied N totalled 427 kg N/ha via six applications. The trial received three herbicide, three insecticide, three fungicide and one PGR application. Lodging was recorded in most cultivars. It was harvested on 2 March 2025.

WAKANUI (Feed Wheat)

Wakanui deep silt loam, Irrigated
Trial operator: Ashley Harrison,
PGG Wrightson Grain
Host farmer: Grant Bennett

This irrigated trial was sown into a paddock of cv. Graham on 23 April 2024, following radish. Soil N measured 120 kg/ha (0-60 cm). Lodging was recorded in almost each cultivar. The trial was harvested on 17 February 2025. No further management data available.

WINCHESTER (Milling Wheat)

Lismore soil, Irrigated
Trial operator: Russell Kirk,
Plant & Food Research
Host farmer: Roger Lasham

This trial was sown on 6 May 2024 into a paddock drilled in cv. Trinity, following radish. Background soil N measured 96 kg/ha (0-60 cm) with further side-dressings of fertiliser providing another 319 kg N/ha via one Ammo 31™, three of Urea and one of N-Protect application. The trial received three herbicide and three fungicide applications along with two insecticide and two PGR applications. The trial received 20 mm irrigation in October. The trial was harvested on 26 February 2025.

Autumn Sown Wheat Agronomic Comment 2024/2025 Season

CULTIVAR	Years in CPT2 trials	Septoria tritici blotch	Stripe rust	Leaf rust	Powdery mildew		Fusarium head blight	Straw strength	Crop height	Maturity	Sprouting susceptibility
Aberdeen (CRWT267)	4	**(MRMS*)**	R	MRR	R		MRMS	Stiff	Medium	Intermediate	Moderate-high
Aston (KMW2206)	1	MSS*	MS*	MSS	R		(MSS)	Moderate	Tall	Intermediate	Low-moderate
Catherine	8	S	MRR	S	MRMS		**(S)**	Moderate	Tall	Intermediate	**Low**
Conquest	20	MS	MS	S	MS		**(MSS)**	Moderate-stiff	Medium	Early-int	Low
Discovery	12	MSS	MRMS	MR*	**(MR)**		MSS	Stiff	Tall	Intermediate	**Low-moderate**
Duchess	11	S	MR	MSS	MS		**(MSS)**	Stiff	Medium	Intermediate	Very low
Firefly	3	**(MR)***	R	MRMS*	R		MRMS	Stiff	Short	Early	Moderate
Firelight	8	**(MSS)***	MRR	**(S)**	MRMS		MS	Moderate	Medium	Intermediate	**Moderate**
Graham	9	**(MSS)***	MRR	**(S)**	MR		(MS)	Stiff	Medium	Early	**Low**
Griffin	10	MSS	MR	MS	MSS		MS	Stiff	Tall	Intermediate	**Low-moderate**
Hanson	11	S	MR	MRMS	MS		S	Stiff	Medium-tall	Intermediate	**Low-moderate**
Ignite	10	MS	MR	**(S)**	**(MS)**		MRMS	Stiff	Medium	Late	Moderate
Kerrin	6	**(S)***	R	MRMS	MRR		**(MS)**	Moderate-stiff	Medium	Intermediate	Moderate
Kinetic	3	MRMS	R	**(S)**	R		**(MS)**	Moderate	Medium	Early	Low-moderate
Reliance	13	MS	MR	S	MS		**(S)**	Moderate-stiff	Short-medium	Early-int	Low
Skybolt (KFW2102)	3	MR	R	MR*	**(MRR)**		**(MRMS)**	Stiff	Medium	Intermediate	Moderate
Starfire	14	**(S)***	**(MRR)**	MSS	(MRMS)		**(MS)**	Stiff	Medium	Intermediate	Moderate
SY Defiant	3	MRR	R	MRR	R		**(MRMS)**	Stiff	Short	Early	**Low-moderate**
SY Medea (SY115666)	3	MRMS	R	MSS	R		MRMS	Stiff	Medium	Early	**Very low**
Viceroy	15	S	MR	S*	MS		S	Stiff	Medium-tall	Intermediate	**Low**
Voltron	8	MS	MRR	MS	MS		MRMS	Moderate-stiff	Medium	Early-int	Low-moderate
Whopper	6	**(MSS*)**	MRR	(S)	MRR		**(MRMS)**	Stiff	Medium	Late	Moderate
CRWT263	4	S	R	MRMS	**(MRMS)**		**(MS)**	Moderate	Medium	Early-int	**Low**
CRWT268	2	**(MRMS*)**	R	MR	MRR		MR	Moderate-stiff	Medium	Early-int	Low-moderate
KFW2201	2	**(MRMS*)**	**(MSS)**	MSS	MS		MRMS	Stiff	Short-med	Int-late	**Low**
SY121233	1	(MS*)	R	(MSS)	(R)		MR	Moderate-stiff	Medium	Intermediate	(Low-moderate)

Scores followed by * indicate resistance is affected by pathotypes present (score is an average).

(brackets) indicate there is limited New Zealand trial data to support the current resistance rating (i.e. the cultivar has either been in trials for less than three years and/or disease pressure has been low).

Disease susceptibility scores sourced from FAR-funded Disease Nurseries at Lincoln and Palmerston North (assessments carried out by Plant & Food Research).

Sprouting susceptibility scores are an indication of susceptibility to preharvest sprouting when conditions are suitable. Data sourced from FAR-funded Sprouting Nurseries (assessments carried out by Plant & Food Research).

Bold text indicates a change in rating.

Key S = susceptible
MSS = mostly susceptible
MS = moderately susceptible
MRMS = intermediate resistance
MR = moderately resistant
MRR = mostly resistant
R = resistant

wheat - 2024/2025 yield (t/ha)

Autumn Sown FEED/BISCUIT Wheat Cultivar Evaluation 2024/2025 Season - yield, t/ha - Canterbury

CULTIVAR	Methven	Chertsey	Chertsey	Wakanui		Temuka	St Andrews	Fairlie	Cant dryland mean yield	Cant irrigated mean yield	Cant mean yield	Years in CPT2 trials (Autumn sown)
Region	Mid Canterbury	Mid Canterbury	Mid Canterbury	Mid Canterbury		South Canterbury	South Canterbury	South Canterbury				
Soil type	Mayfield stony silt loam	Templeton_9a.1	Templeton_9a.1	Wakanui deep silt loam		Waimakariri silt loam	Claremont silt loam	Claremont silt loam				
Previous crop	Linseed	Turf grass	Turf grass	Radish		Maize	Peas	Ryegrass				
Sow date	6-Apr	17-Apr	17-Apr	23-Apr		17-Apr	9-Apr	4-Apr				
Harvest date	7-Mar	22-Jan	14-Feb	17-Feb		2-Mar	5-Feb	1-Mar				
Dryland/Irrigated	Irrigated	Dryland	Irrigated	Irrigated		Irrigated	Dryland	Dryland				
Aberdeen (CRWT267)	11.8	8.0	13.2	15.7		11.0	11.1	8.9	9.3	12.9	11.4	4
Firefly [B]	11.5	8.0	**13.3**	15.9		12.9	12.1	8.8	**9.7**	**13.4**	**11.8**	3
Firelight	11.6	8.1	12.7	15.1		12.7	10.3	9.6	9.4	**13.0**	11.4	8
Graham [B, BR]	11.2	8.1	13.1	15.1		13.1	11.9	9.0	**9.7**	**13.1**	**11.6**	9
Ignite [B]	11.9	7.6	12.3	15.0		11.8	11.0	8.9	9.2	12.8	11.2	10
Kerrin	12.5	7.9	13.1	14.3		11.1	11.3	9.8	**9.7**	12.7	11.4	6
Kinetic	**13.4**	**8.4**	13.2	15.3		13.0	12.1	**10.5**	**10.3**	**13.7**	**12.3**	3
Skybolt (KFW2102)	**13.6**	8.0	13.0	**16.5**		**13.6**	11.9	**10.2**	**10.1**	**14.2**	**12.4**	3
Starfire	11.5	7.7	12.6	12.8		7.5	9.5	9.9	9.0	11.1	10.2	14
SY Defiant	12.8	7.7	12.5	16.0		**13.7**	11.8	8.9	9.5	**13.8**	**11.9**	3
Voltron [B]	12.7	**8.4**	**13.3**	14.7		11.5	12.1	9.2	**9.9**	**13.1**	**11.7**	8
Whopper [BR]	11.5	**8.2**	**13.3**	13.6		12.6	12.1	9.8	**10.0**	12.7	11.6	6
CRWT268	13.0	8.0	**13.6**	16.0		12.4	10.6	9.0	9.2	**13.7**	**11.8**	2
KFW2201	**13.4**	**8.2**	**13.3**	15.4		**13.5**	**12.4**	**10.1**	**10.2**	**13.9**	**12.3**	2
SY121233	12.3	**8.4**	13.2	15.4		12.8	**12.8**	**10.5**	**10.6**	**13.4**	**12.2**	1
Site mean yield	12.3	8.1	13.1	15.1		12.2	11.5	9.5	9.7	13.2	11.7	
P-value	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	0.043	0.002	<0.001	
LSD (p=0.05)	0.3	0.3	0.3	0.5		0.6	0.4	0.6	0.9	1.2	0.8	
CV (%)	1.8	2.5	1.7	2.5		3.4	2.5	4.1	-	-	-	

[B] Biscuit wheat, [BR] Bread wheat (treated as a feed wheat), Cant - Canterbury.

Bold text indicates the cultivar was amongst the highest yielding group of cultivars.

Autumn Sown FEED/BISCUIT Wheat

Cultivar Evaluation 2024/2025 Season - yield, t/ha - Southland and Southern North Island

CULTIVAR	Balfour	Oreti	Southland mean yield	Halcombe	Years in CPT2 trials (Autumn sown)
Region	Northern Southland	Central Southland		Manawatu	
Soil type	Crookston loam	Claremont silt loam		Marton clay loam	
Previous crop	Pea	Bean		Forage brassica	
Sow date	4-Apr	23-Apr		20-Apr	
Harvest date	17-Feb	14-Mar		20-Jan	
Dryland/Irrigated	Dryland	Dryland		Dryland	
Aberdeen (CRWT267)	11.6	13.3	12.4	9.3	4
Firefly [B]	11.6	12.8	12.2	8.4	3
Firelight	10.5	**13.9**	12.2	**10.0**	8
Graham [B, BR]	11.4	12.7	12.1	8.5	9
Ignite [B]	10.2	12.8	11.5	8.4	10
Kerrin	9.7	13.0	11.3	9.3	6
Kinetic	11.4	**13.9**	12.6	**10.0**	3
Skybolt (KFW2102)	11.2	13.1	12.1	**9.7**	3
Starfire	9.8	13.8	11.8	8.7	14
SY Defiant	12.1	13.3	12.7	8.7	3
Voltron [B]	11.6	13.7	12.7	9.5	8
Whopper [BR]	11.7	13.4	12.6	**10.7**	6
CRWT268	10.9	13.8	12.3	8.4	2
KFW2201	**12.7**	**14.6**	13.6	**10.2**	2
SY121233	12.2	**14.0**	13.1	**10.5**	1
Site mean yield	11.2	13.5	12.4	9.3	
P-value	<0.001	0.002	0.131	<0.001	
LSD (p=0.05)	0.3	0.7	NS	1.0	
CV (%)	1.9	3.8	-	7.8	

[B] Biscuit wheat, [BR] Bread wheat (treated as a feed wheat). Bold text indicates the cultivar was amongst the highest yielding group of cultivars.
NS, LSD not calculated as P value not significant.

Autumn Sown MILLING Wheat Cultivar Evaluation 2024/2025 Season - yield, t/ha - Canterbury

CULTIVAR	Grade	Greendale	Methven	Dorie	Winchester	Cant mean yield	Years in CPT2 trials (Autumn sown)
Region		Central Canterbury	Central Canterbury	Mid Canterbury	South Canterbury		
Soil type		Mayfield moderately deep silt	Templeton silt loam	Templeton silt loam	Lismore soil		
Previous crop		White clover	Potatoes	White clover	Radish		
Sow date		28-May	11-May	10-May	6-May		
Harvest date		22-Feb	16-Feb	31-Jan	26-Feb		
Dryland/Irrigated		Irrigated	Irrigated	Irrigated	Irrigated	Irrigated	
Hanson	Gris	9.2	10.4	9.8	10.4	10.0	11
Catherine	Med	9.9	10.7	11.0	**12.6**	**11.1**	8
Discovery	Med	**10.7**	11.7	11.8	12.1	**11.6**	12
Viceroy	Med	9.1	10.6	10.1	9.9	9.9	15
Whopper	Med	10.1	11.6	**11.9**	12.2	**11.4**	5
SY Medea (SY115666)	Med	9.9	**12.3**	**12.2**	**12.5**	**11.7**	3
CRWT263	Med	**10.4**	**11.9**	11.5	11.5	**11.3**	4
Aston (KMW2206)	Prem	**10.8**	**12.5**	11.5	11.3	**11.5**	1
Conquest	Prem	9.5	10.5	10.3	10.4	10.2	20
Duchess	Prem	9.7	10.8	11.0	10.3	10.5	11
Griffin	Prem	8.6	9.0	9.8	10.2	9.4	10
Reliance	Prem	10.2	10.7	10.1	10.7	10.4	13
Site mean yield		9.8	11.1	10.9	11.2	10.7	
P-Value		<0.001	<0.001	<0.001	<0.001	<0.001	
LSD (p=0.05)		0.6	0.6	0.4	0.5	0.7	
CV (%)		4.3	3.5	2.3	3.0	-	

Gris - Gristing, Med - Medium, Prem - Premium.
Bold text indicates the cultivar was amongst the highest yielding group of cultivars.
Grade has been provided by the breeder/agent and does not guarantee a contract will be issued for that cultivar.

wheat - 2024/2025 grain quality

Southern North Island FEED/BISCUIT Wheat Trials

CULTIVAR	T.G.W. (g)	Test Weight (kg/hl)	Protein (%) (N% x 5.7)	Screenings (%)	Falling No. (seconds)+
Aberdeen (CRWT267)	43	69	10.5	1.4	-
Firefly B	43	69	10.4	2.2	209
Firelight	41	71	10.0	1.6	-
Graham B, BR	46	71	10.8	3.6	293
Ignite B	40	72	11.0	3.1	328
Kerrin	41	73	9.6	2.8	-
Kinetic	45	74	9.8	1.8	-
Skybolt (KFW2102)	43	73	9.9	2.2	-
Starfire	34	69	10.9	2.9	-
SY Defiant	41	74	10.6	2.9	-
Voltron B	38	72	10.1	3.5	291
Whopper BR	44	78	10.3	1.3	324
CRWT268	36	69	10.4	3.9	-
KFW2201	41	71	9.5	2.2	-
SY121233	43	75	9.9	2.0	-
Site mean yield	41	72	10.2	2.5	289
P-value	-	-	-	-	-
LSD (p=0.05)	-	-	-	-	-

Single trial - no P-value or LSD available.

Canterbury FEED/BISCUIT Wheat Trials

CULTIVAR	T.G.W. (g)	Test Weight (kg/hl)	Protein (%) (N% x 5.7)	Screenings (%)	Falling No. (seconds)+
Aberdeen (CRWT267)	43	68	10.5	1.6	-
Firefly B	46	70	10.5	1.2	194
Firelight	40	69	10.3	1.8	-
Graham B, BR	45	73	9.9	0.8	288
Ignite B	41	71	10.5	1.3	313
Kerrin	42	72	9.4	2.3	-
Kinetic	46	74	9.4	1.4	-
Skybolt (KFW2102)	45	74	9.8	1.1	-
Starfire	38	72	10.7	1.7	-
SY Defiant	45	75	9.7	1.3	-
Voltron B	42	74	10.1	1.3	315
Whopper BR	42	73	10.0	0.9	325
CRWT268	41	73	10.1	1.9	-
KFW2201	44	72	9.6	1.4	-
SY121233	44	73	9.9	1.5	-
Site mean yield	43	72	10.0	1.4	287
P-value	<0.001	<0.001	<0.001	0.001	<0.001
LSD (p=0.05)	2	2	0.3	0.6	36

Averaged over seven trials. B Biscuit wheat, BR Bread wheat (treated as feed wheat), + Feed wheats not tested for falling number. The quality data for each region are also presented as a 4-year mean on the individual cultivar description pages.

Canterbury MILLING Wheat Trials

CULTIVAR	Grade	T.G.W. (g)	Test Weight (kg/hl)	Protein (%) (N% x 5.7)	Screenings (%)	Falling No. (seconds)
Hanson	Gris	38	72	11.8	2.8	365
Catherine	Med	44	74	12.3	1.0	264
Discovery	Med	47	76	11.9	0.9	352
Viceroy	Med	40	79	12.0	1.4	388
Whopper	Med	40	73	10.1	1.1	352
SY Medea (SY115666)	Med	45	75	11.4	0.9	330
CRWT263	Med	37	76	11.5	3.0	363
Aston (KMW2206)	Prem	38	75	12.2	1.6	378
Conquest	Prem	39	78	12.9	1.7	416
Duchess	Prem	40	76	11.9	3.3	338
Griffin	Prem	37	73	11.6	1.3	341
Reliance	Prem	42	77	13.5	2.1	356
Site mean yield		41	75	11.9	1.8	353
P-Value		<0.001	<0.001	<0.001	<0.001	<0.001
LSD (p=0.05)		3	1	0.5	0.6	58

Averaged over four trials. Gris - Gristing, Med - Medium, Prem - Premium.

Southland FEED/BISCUIT Wheat Trials

CULTIVAR	T.G.W. (g)	Test Weight (kg/hl)	Protein (%) (N% x 5.7)	Screenings (%)	Falling No. (seconds)+
Aberdeen (CRWT267)	50	72	10.5	2.1	-
Firefly B	51	73	10.4	1.4	196
Firelight	43	72	9.7	2.4	-
Graham B, BR	49	76	9.7	2.1	276
Ignite B	46	76	10.5	1.7	307
Kerrin	47	74	9.6	3.6	-
Kinetic	51	77	9.8	3.6	-
Skybolt (KFW2102)	49	77	9.9	2.6	-
Starfire	45	76	10.5	2.5	-
SY Defiant	51	78	9.6	3.7	-
Voltron B	48	77	9.8	2.2	304
Whopper BR	51	78	9.8	1.9	332
CRWT268	47	76	9.9	2.8	-
KFW2201	51	76	9.9	2.8	-
SY121233	50	77	9.7	3.7	-
Site mean yield	49	75	9.9	2.6	283
P-value	0.004	0.009	0.449	0.444	0.045
LSD (p=0.05)	4	3	NS	NS	79

Averaged over two trials. B Biscuit wheat, BR Bread wheat (treated as feed wheat), + Feed wheats not tested for falling number. NS, LSD not calculated as P-value not significant. The quality data for each region are also presented as a 4-year mean on the individual cultivar description pages.

Autumn Sown FEED/BISCUIT Wheat - 4-year adjusted mean - relative yield by site

CULTIVAR	Methven	Chertsey	Chertsey	Wakanui	Temuka	St Andrews	Fairlie		Canterbury dryland relative yield	Canterbury irrigated relative yield	Canterbury mean relative yield	Balfour	Oreti	Southland mean relative yield	Feilding	Years in CPT2 trials (Autumn sown)
Region	Mid Cant	Mid Cant	Mid Cant	Mid Cant	South Cant	South Cant	South Cant					Nth Sthland	Central Sthland		Manawatu	
Dryland/Irrigated	Irrigated	Dryland	Irrigated	Irrigated	Irrigated	Dryland	Dryland					Dryland	Dryland		Dryland	
No. of trials	4	4	4	4	4	2	3		9	16	25	4	4	8	4	
Aberdeen (CRWT267)	97	**101**	**101**	99	97	98	98		99	99	99	**103**	**100**	**102**	100	4
Firefly [B]	96	98	**100**	**103**	**105**	**102**	95		99	101	100	102	**101**	102	94	3
Firelight	97	**104**	**103**	100	**104**	96	103		100	101	101	101	**106**	**103**	99	8
Graham [B, BR]	97	98	96	100	101	101	100		100	99	99	101	99	100	98	9
Ignite [B]	96	95	94	95	91	92	91		92	94	93	92	92	92	94	10
Kerrin	96	99	98	95	88	95	98		97	94	95	90	90	90	96	6
Kinetic	**107**	**100**	**102**	**105**	**106**	**104**	106		**104**	**105**	**104**	101	**103**	**102**	106	3
Skybolt (KFW2102)	**108**	**102**	**103**	**106**	**107**	**102**	104		**103**	**106**	**105**	100	100	100	105	3
Starfire	93	95	93	87	75	84	93		90	87	88	90	92	91	93	14
SY Defiant	103	97	**99**	**106**	**108**	102	101		100	**104**	103	**105**	99	**102**	99	3
Voltron [B]	100	**104**	**100**	95	99	**104**	100		**102**	98	100	99	**103**	101	99	8
Whopper [BR]	97	**101**	**101**	96	**104**	**104**	102		**102**	99	100	100	**104**	**102**	104	6
CRWT268	104	**99**	**104**	**103**	100	96	95		97	103	100	98	**101**	100	96	2
KFW2201	**110**	**103**	**105**	**108**	**111**	**109**	105		**106**	**109**	**108**	**109**	**107**	**108**	105	2
SY121233	(100)	**(104)**	**(102)**	(102)	**(105)**	**(110)**	(109)		**(108)**	(102)	**(104)**	**(108)**	**(105)**	**(106)**	(112)	1
Site mean yield (t/ha)	12.6	8.8	12.0	15.3	11.9	12.2	11.2		10.5	13.0	12.0	11.6	10.9	11.2	9.8	
P-value	<0.001	0.007	0.011	<0.001	<0.001	0.002	0.344		0.001	<0.001	<0.001	<0.001	0.004	<0.001	0.155	
LSD (estab. cv) (p=0.05)	4	5	6	6	8	8	NS		6	6	4	5	7	6	NS	
LSD (new vs estab.) (p=0.05)	7	7	10	9	13	10	NS		9	8	6	8	11	8	NS	

[B] Biscuit wheat, [BR] Bread wheat (treated as a feed wheat).
- Cultivar has not been in trials at this location.
No trial results from Fairlie 2023-24 (data is a 3-year mean) and St Andrews from 2021-22 and 2022-23 (data is a 2-year mean).
LSD (estab. cv) is for comparing two "established" cultivars (that have both been in all trials).
LSD (new vs estab.) is for comparing a "new" (first year) cultivar with an "established" cultivar.
NS, LSD not calculated as P-value not significant.

Bold text indicates the cultivar was amongst the highest yielding group of cultivars (based on estab. cv LSD).
Figures in brackets are less robust as they are only based on one year of data.

Autumn Sown MILLING Wheat 4-year adjusted mean - relative yield by site - Canterbury

CULTIVAR	Grade	Greendale	Methven	Dorie	Winchester	Canterbury irrigated mean yield	Years in FAR trials (Autumn sown)
Region		Central Canterbury	Mid Canterbury	Mid Canterbury	South Canterbury		
Dryland/Irrigated		Irrigated	Irrigated	Irrigated	Irrigated		
No. of trials		4	3	4	3	14	
Hanson	Gris	100	96	98	96	97	11
Catherine	Med	103	103	103	**109**	**105**	8
Discovery	Med	105	99	103	**105**	**103**	12
Viceroy	Med	95	97	94	91	94	15
Whopper	Med	102	104	**110**	**111**	**107**	5
SY Medea (SY115666)	Med	103	108	**107**	**108**	**106**	3
CRWT263	Med	98	105	102	95	100	4
Aston (KMW2206)	Prem	(110)	(112)	**(105)**	(101)	**(107)**	1
Conquest	Prem	99	93	91	96	95	20
Duchess	Prem	96	97	96	94	96	11
Griffin	Prem	91	92	98	98	95	10
Reliance	Prem	99	93	94	98	96	13
Site mean yield (t/ha)		10.0	11.2	11.6	11.2	11.0	
P-value		0.715	0.105	<0.001	<0.001	<0.001	
LSD (estab. cv) (p=0.05)		NS	NS	6	7	6	
LSD (new vs estab.) (p=0.05)		NS	NS	9	10	8	

Gris - Gristing, Med - Medium, Prem - Premium.
Grade has been provided by the breeder/agent and does not guarantee that a contract will be issued for that cultivar.
No trials in Methven in 2023-24 or in Winchester in 2021-22 (data is a 3-year mean).
LSD (estab. cv) is for comparing two "established" cultivars (that have both been in all trials).
LSD (new vs estab.) is for comparing a "new" (first year) cultivar with an "established" cultivar.
NS, LSD not calculated as P-value not significant.
Bold text indicates the cultivar was amongst the highest yielding group of cultivars (based on estab. cv LSD).
Figures in brackets are less robust as they are only based on one year of data.

Autumn Sown Wheat - plant counts 2024/2025 season

Canterbury FEED/BISCUIT Wheat Trials

(target plant population for April and May sown = 150 plants/m²)

CULTIVAR	Plants/m²
Aberdeen (CRWT267)	149
Firefly [B]	140
Firelight	145
Graham [B, BR]	150
Ignite [B]	151
Kerrin	150
Kinetic	136
Skybolt (KFW2102)	156
Starfire	148
SY Defiant	149
Voltron [B]	146
Whopper [BR]	146
CRWT268	151
KFW2201	143
SY121233	149
Site mean yield	147
P-value	<0.001
LSD (p=0.05)	7.8

Mean of seven sites (no result from Fairlie). [B] Biscuit wheat, [BR] Bread wheat (treated as a feed wheat).

Canterbury MILLING Wheat Trials

(target plant population for May sowing = 125-175 plants/m²)

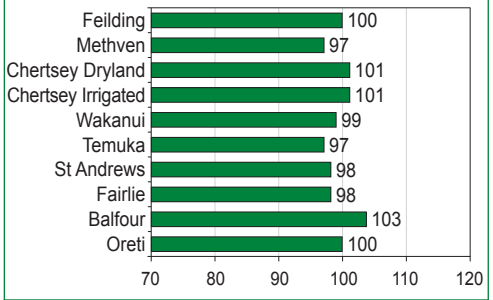
CULTIVAR	Grade	Plants/m²
Hanson	Gris	124
Catherine	Med	179
Discovery	Med	192
Viceroy	Med	125
Whopper	Med	189
SY Medea (SY115666)	Med	184
CRWT263	Med	201
Aston (KMW2206)	Prem	194
Conquest	Prem	174
Duchess	Prem	199
Griffin	Prem	160
Reliance	Prem	173
Site mean yield		174
P-value		<0.001
LSD (p=0.05)		29

Mean of four sites.

ABERDEEN (CRWT267)[PVR] YEAR 4

Mostly average yielding feed wheat cultivar. Has some degree of resistance to the common diseases. A medium height stiff-strawed variety, with intermediate maturity and a moderate to high sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	99
Irrigated sites (4-year)	99

DISEASE RESISTANCE	
Septoria tritici blotch	Intermediate resistance**
Stripe rust	Resistant
Leaf rust	Mostly resistant
Powdery mildew	Resistant
Fusarium head blight	Intermediate resistance

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium
Maturity	Intermediate
Sprouting risk	Moderate-high

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	44	48	49
Test weight (kg/hl)	67	70	69
Protein (%) (N% x 5.7)	11.0	10.4	9.9
Falling number (sec)	-	-	-
Screenings (%)	0.8	0.9	1.1

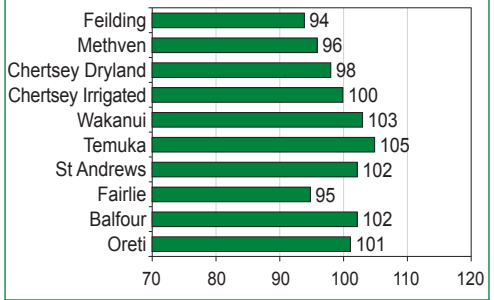
END USE	
	Feed

BACKGROUND	
Breeder	Sejet
Licensee	Plant and Food Research Ltd
Agent	Luisetti Seeds

FIREFLY (CK25) YEAR 3

Firefly is a biscuit and feed wheat, producing yields ranging from below average to above average. Has some level of resistance to the common diseases. A short, stiff-strawed variety with early maturity. Produces lower falling numbers, with a moderate risk of sprouting.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)**



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	99
Irrigated sites (4-year)	101

DISEASE RESISTANCE	
Septoria tritici blotch	Moderately resistant**
Stripe rust	Resistant
Leaf rust	Intermediate resistance**
Powdery mildew	Resistant
Fusarium head blight	Intermediate resistance

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Short
Maturity	Early
Sprouting risk	Moderate

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	45	51	51
Test weight (kg/hl)	66	72	71
Protein (%) (N% x 5.7)	10.7	10.5	9.8
Falling number (sec)	276	230	243
Screenings (%)	1.0	0.6	0.6

END USE	
	Feed/Biscuit

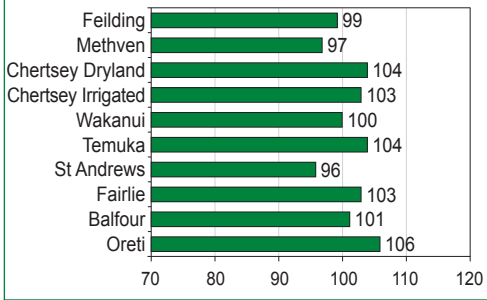
BACKGROUND	
Breeder	KWS, UK
Agent	Carrfields Grain & Seed

Yields are relative to other feed/biscuit wheats only. *St Andrews is a 2-year mean (no data from 2021-22 and 2022-23). Fairlie is a 3-year mean (no data from 2023-24). ** Resistance is affected by pathotypes present (score is an average) *** First year 2022-23.

FIRELIGHT[PVR] YEAR 8

Firelight is a mostly average to above average feed wheat. Shows some resistance to stripe rust and powdery mildew, has susceptibility to the other common diseases. A medium height cultivar with moderate sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	100
Irrigated sites (4-year)	101

DISEASE RESISTANCE	
Septoria tritici blotch	Mostly susceptible**
Stripe rust	Mostly resistant
Leaf rust	Susceptible**
Powdery mildew	Intermediate resistance
Fusarium head blight	Moderately susceptible

FIELD CHARACTERISTICS	
Straw strength	Moderate
Crop height	Medium
Maturity	Intermediate
Sprouting risk	Moderate

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	42	46	46
Test weight (kg/hl)	68	71	70
Protein (%) (N% x 5.7)	10.2	9.9	9.4
Falling number (sec)	-	-	-
Screenings (%)	1.1	1.2	1.2

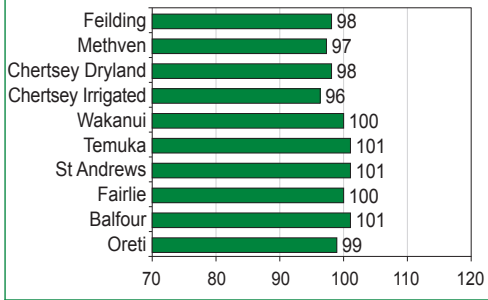
END USE	
	Feed

BACKGROUND	
Breeder	Limagrain Europe S.A.
Agent	PGG Wrightson Grain

GRAHAM[PVR] YEAR 9

Graham is a below average yielding feed, biscuit and bread variety. Has some resistance to stripe rust and powdery mildew, but a degree of susceptibility to other common wheat diseases. An early maturing, stiff-strawed variety with low sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	100
Irrigated sites (4-year)	99

DISEASE RESISTANCE	
Septoria tritici blotch	Mostly susceptible**
Stripe rust	Mostly resistant
Leaf rust	Susceptible
Powdery mildew	Moderately resistant
Fusarium head blight	Moderately susceptible

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium
Maturity	Early
Sprouting risk	Low

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	45	49	49
Test weight (kg/hl)	71	74	73
Protein (%) (N% x 5.7)	10.9	9.9	9.2
Falling number (sec)	323	314	316
Screenings (%)	1.6	0.7	1.0

END USE	
	Feed/Milling

BACKGROUND	
Breeder	Syngenta
Licensee	Cropmark Seeds
Agent	Advance Agriculture, Cates, PGG Wrightson Grain

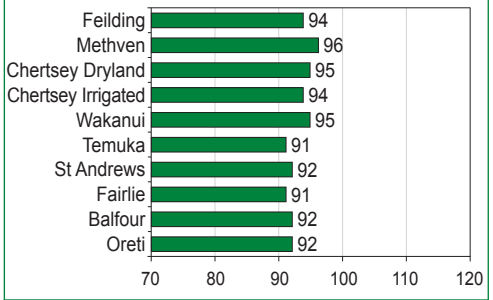
Yields are relative to other feed/biscuit wheats only. * No trial results from Balfour in 2020-21 and Fairlie 2023-24 so data are 3-year means. St Andrews is a 1-year mean (no data from 2020-21 to 2022-23). ** Resistance is affected by pathotypes present (score is an average).

IGNITE PVR

YEAR 10

Ignite is a feed and biscuit cultivar that produces below average yields. Has some resistance to stripe rust and FHB, but shows a level of susceptibility to other common wheat diseases. A medium height plant with a stiff straw and moderate sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	92
Irrigated sites (4-year)	94

DISEASE RESISTANCE	
Septoria tritici blotch	Moderately susceptible
Stripe rust	Moderately resistant
Leaf rust	Susceptible
Powdery mildew	Moderately susceptible**
Fusarium head blight	Intermediate resistance

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium
Maturity	Late
Sprouting risk	Moderate

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	41	45	46
Test weight (kg/hl)	70	73	73
Protein (%) (N% x 5.7)	11.0	10.5	10.0
Falling number (sec)	353	323	338
Screenings (%)	1.3	0.7	0.8

END USE	
	Feed/Biscuit

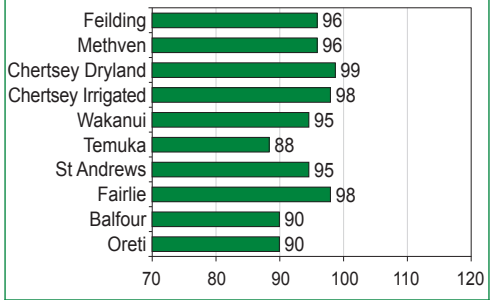
BACKGROUND	
Breeder	Limagrain Europe S.A.
Agent	PGG Wrightson Grain

KERRIN

YEAR 6

Kerrin is a feed wheat producing below average yields. Has some level of resistance to most of the common diseases, but shows a level of susceptibility to some STB pathotypes and FHB. A medium height cultivar with a moderate to stiff straw and intermediate maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	97
Irrigated sites (4-year)	94

DISEASE RESISTANCE	
Septoria tritici blotch	Susceptible**
Stripe rust	Resistant
Leaf rust	Intermediate resistance
Powdery mildew	Mostly resistant
Fusarium head blight	Moderately susceptible

FIELD CHARACTERISTICS	
Straw strength	Moderate-stiff
Crop height	Medium
Maturity	Intermediate
Sprouting risk	Moderate

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	41	45	47
Test weight (kg/hl)	70	73	72
Protein (%) (N% x 5.7)	9.7	9.5	9.0
Falling number (sec)	-	-	-
Screenings (%)	1.7	1.7	2.0

END USE	
	Feed

BACKGROUND	
Breeder	KWS, UK
Agent	Carrfields Grain & Seed

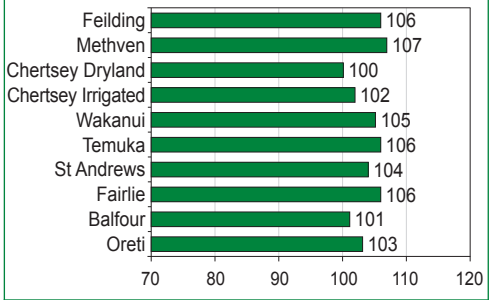
Yields are relative to other feed/biscuit wheats only. * No trial results from Balfour in 2020-21 and Fairlie 2023-24 so data are 3-year means. St Andrews is a 1-year mean (no data from 2020-21 to 2022-23). ** Resistance is affected by pathotypes present (score is an average).

KINETIC (CK130)

YEAR 3

A predominantly above average to high yielding feed cultivar. Has a level of resistance to most of the common diseases, except for leaf rust and FHB. A medium height cultivar with moderate straw strength.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	104
Irrigated sites (4-year)	105

DISEASE RESISTANCE	
Septoria tritici blotch	Intermediate resistance
Stripe rust	Resistant
Leaf rust	Susceptible
Powdery mildew	Resistant
Fusarium head blight	Moderately susceptible

FIELD CHARACTERISTICS	
Straw strength	Moderate
Crop height	Medium
Maturity	Early
Sprouting risk	Low-moderate

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	46	50	51
Test weight (kg/hl)	71	75	75
Protein (%) (N% x 5.7)	9.6	9.7	9.0
Falling number (sec)	-	-	-
Screenings (%)	0.8	0.8	1.6

END USE	
	Feed

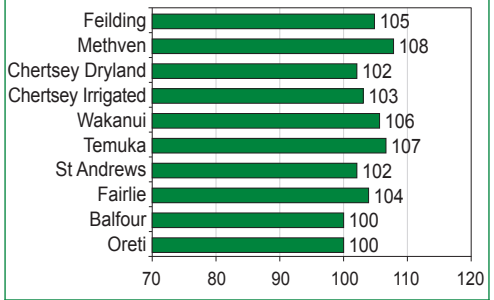
BACKGROUND	
Breeder	KWS, UK
Agent	Carrfields Grain & Seed

SKYBOLT (KFW2102) PVR

YEAR 3

Mostly above average to high yielding feed variety. Performs well on irrigated and dryland sites in Canterbury and the southern North Island dryland site. Good levels of resistance to common diseases. A medium height cultivar with a stiff straw and intermediate maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	103
Irrigated sites (4-year)	106

DISEASE RESISTANCE	
Septoria tritici blotch	Moderately resistant
Stripe rust	Resistant
Leaf rust	Moderately resistant**
Powdery mildew	Mostly resistant
Fusarium head blight	Intermediate resistance

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium
Maturity	Intermediate
Sprouting risk	Moderate

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	43	50	49
Test weight (kg/hl)	71	75	74
Protein (%) (N% x 5.7)	9.9	9.9	9.3
Falling number (sec)	-	-	-
Screenings (%)	1.0	0.6	1.2

END USE	
	Feed

BACKGROUND	
Breeder	Limagrain Europe S.A.
Agent	PGG Wrightson Grain

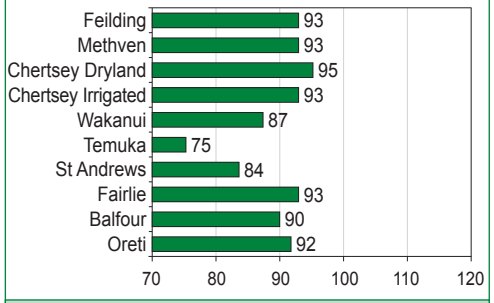
Yields are relative to other feed/biscuit wheats only. * third year in CPT 2, 3-year mean, part from Fairlie (no data 2023-24) and St Andrews is (no data from 22-23) so are a 2-year mean** Resistance is affected by pathotypes present (score is an average).

STARFIRE PVR

YEAR 14

A below average feed cultivar as a first wheat. Mostly resistant to stripe rust and intermediate resistance against powdery mildew, but shows varying levels of susceptibility to other common wheat diseases. A stiff-strawed variety with intermediate maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	90
Irrigated sites (4-year)	87

DISEASE RESISTANCE	
Septoria tritici blotch	Susceptible**
Stripe rust	Mostly resistant
Leaf rust	Mostly susceptible
Powdery mildew	Intermediate resistance
Fusarium head blight	Moderately susceptible

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium
Maturity	Intermediate
Sprouting risk	Moderate

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	36	42	43
Test weight (kg/hl)	68	74	73
Protein (%) (N% x 5.7)	11.2	10.6	10.0
Falling number (sec)	-	-	-
Screenings (%)	1.5	1.2	1.3

END USE	
	Feed

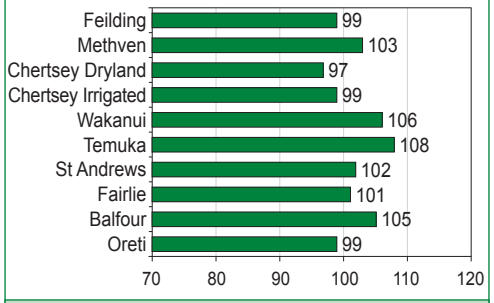
BACKGROUND	
Breeder	Limagrain Europe S.A.
Agent	PGG Wrightson Grain

SY DEFIANT PVR

YEAR 3

Average to high yielding feed variety, depending on location. Good levels of resistance to the common diseases. A short cultivar with a stiff straw and early maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)**



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	100
Irrigated sites (4-year)	104

DISEASE RESISTANCE	
Septoria tritici blotch	Mostly resistant
Stripe rust	Resistant
Leaf rust	Mostly resistant
Powdery mildew	Resistant
Fusarium head blight	Intermediate resistance

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Short
Maturity	Early
Sprouting risk	Low-moderate

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	43	50	51
Test weight (kg/hl)	71	77	75
Protein (%) (N% x 5.7)	10.0	9.8	9.0
Falling number (sec)	-	-	-
Screenings (%)	1.3	0.9	2.0

END USE	
	Feed

BACKGROUND	
Breeder	Syngenta
Licensee	Cropmark Seeds
Agent	Advance Agriculture, Cates

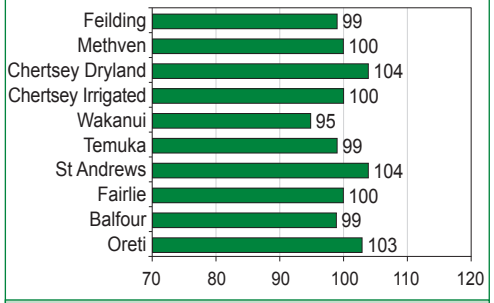
Yields are relative to other feed/biscuit wheats only. * St Andrews is a 2-year mean (no data from 2022-21 and 2022-23). Fairlie is a 3-year mean (no data from 2023-24). ** Resistance is affected by pathotypes present (score is an average). *** First year 2022-23.

VOLTRON PVR

YEAR 8

Voltron is a feed and biscuit wheat producing mostly average to above average yields. Moderately susceptible to STB, leaf rust and powdery mildew. A medium height cultivar with low to moderate sprouting risk. It does not require vernalisation and therefore has a wide sowing window, from early April to late August.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	102
Irrigated sites (4-year)	98

DISEASE RESISTANCE	
Septoria tritici blotch	Moderately susceptible
Stripe rust	Mostly resistant
Leaf rust	Moderately susceptible
Powdery mildew	Moderately susceptible
Fusarium head blight	Intermediate resistance

FIELD CHARACTERISTICS	
Straw strength	Moderate-stiff
Crop height	Medium
Maturity	Early-intermediate
Sprouting risk	Low-moderate

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	40	45	46
Test weight (kg/hl)	70	75	74
Protein (%) (N% x 5.7)	10.5	10.1	9.5
Falling number (sec)	312	330	313
Screenings (%)	1.7	0.8	1.1

END USE	
	Feed/Biscuit

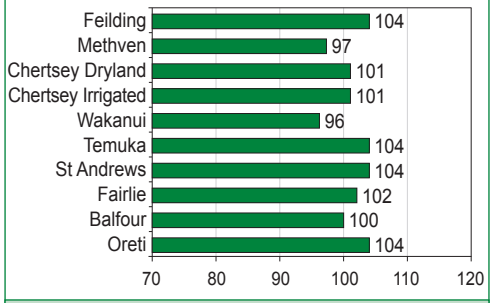
BACKGROUND	
Breeder	Limagrain Europe S.A.
Agent	PGG Wrightson Grain

WHOPPER PVR

YEAR 6

A mostly average to above average yielding feed and milling variety. Has good resistance to some common diseases, but a level of susceptibility to leaf rust and STB. A medium height, stiff-strawed variety with late maturity and moderate sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	102
Irrigated sites (4-year)	99

DISEASE RESISTANCE	
Septoria tritici blotch	Mostly susceptible**
Stripe rust	Mostly resistant
Leaf rust	Susceptible
Powdery mildew	Mostly resistant
Fusarium head blight	Intermediate resistance

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium
Maturity	Late
Sprouting risk	Moderate

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	45	46	51
Test weight (kg/hl)	74	75	75
Protein (%) (N% x 5.7)	10.3	10.1	9.4
Falling number (sec)	367	351	374
Screenings (%)	0.7	0.6	0.8

END USE	
	Feed/Milling

BACKGROUND	
Breeder	Sejet
Licensee	Plant and Food Research Ltd
Agent	Luisetti Seeds

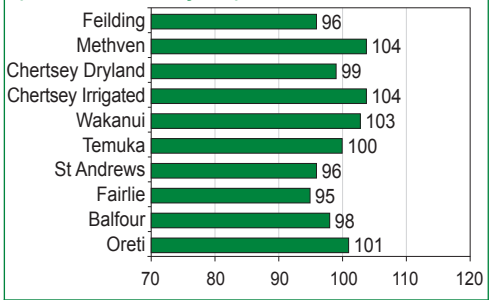
Yields are relative to other feed/biscuit wheats only. * St Andrews is a 2-year mean (no data from 2021-22 and 2022-23). Fairlie is a 3-year mean (no data from 2023-24). ** Resistance is affected by pathotypes present (score is an average).

CRWT268

YEAR 2

Variable yielding feed wheat cultivar depending on location. Has a degree of resistance to all the common diseases. A medium height moderate to stiff-strawed variety, with early to intermediate maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	97
Irrigated sites (4-year)	103

DISEASE RESISTANCE	
Septoria tritici blotch	Intermediate resistance**
Stripe rust	Resistant
Leaf rust	Moderately resistant
Powdery mildew	Mostly resistant
Fusarium head blight	Moderately resistant

FIELD CHARACTERISTICS	
Straw strength	Moderate-stiff
Crop height	Medium
Maturity	Early-intermediate
Sprouting risk	Low-moderate

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	38	45	47
Test weight (kg/hl)	67	74	73
Protein (%) (N% x 5.7)	10.6	10.1	9.5
Falling number (sec)	-	-	-
Screenings (%)	2.1	1.4	1.4

END USE	
	Feed

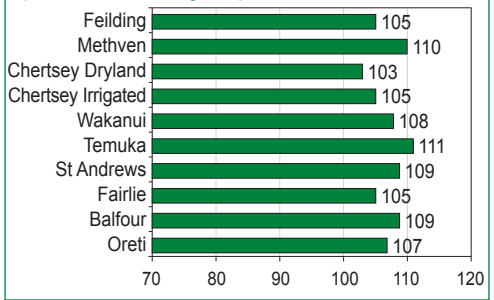
BACKGROUND	
Breeder	Plant and Food Research Ltd
Agent	Luisetti Seeds

KFW2201

YEAR 2

Above average to high yielding feed variety. Has intermediate resistance to STB and FHB, but various levels of susceptibility to other common wheat diseases. A short to medium height cultivar with a stiff straw and intermediate to late maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	106
Irrigated sites (4-year)	109

DISEASE RESISTANCE	
Septoria tritici blotch	Intermediate resistance**
Stripe rust	Mostly susceptible
Leaf rust	Mostly susceptible
Powdery mildew	Moderately susceptible
Fusarium head blight	Intermediate resistance

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Short-medium
Maturity	Intermediate-late
Sprouting risk	Low

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	42	49	51
Test weight (kg/hl)	70	74	72
Protein (%) (N% x 5.7)	9.6	9.7	9.3
Falling number (sec)	292	274	265
Screenings (%)	1.1	0.9	1.4

END USE	
	Feed

BACKGROUND	
Breeder	Limagrain Europe S.A.
Agent	PGG Wrightson Grain

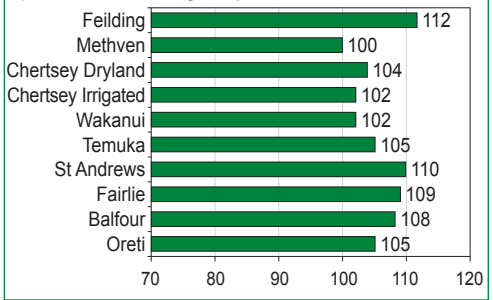
Yields are relative to other feed/biscuit wheats only. * Second year in CPT2. 2-year mean, part from Fairly (no results 2023/24) so is a 1-year mean. ** Resistance is affected by pathotypes present (score is an average).

SY121233

YEAR 1

Above average to high yielding feed variety. Excellent performer on dryland sites in Canterbury and the southern North Island dryland site. Some resistance to stripe rust, powdery mildew and FHB, but a degree of susceptibility to STB and leaf rust. A short to medium height cultivar with a stiff straw and intermediate to late maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	108
Irrigated sites (4-year)	102

DISEASE RESISTANCE	
Septoria tritici blotch	Moderately susceptible**
Stripe rust	Resistant
Leaf rust	Mostly susceptible
Powdery mildew	Resistant
Fusarium head blight	Moderately resistant

FIELD CHARACTERISTICS	
Straw strength	Moderate-stiff
Crop height	Medium
Maturity	Intermediate
Sprouting risk	Low-moderate

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	44	49	50
Test weight (kg/hl)	73	75	74
Protein (%) (N% x 5.7)	10.0	9.9	9.1
Falling number (sec)	-	-	-
Screenings (%)	0.7	1.0	2.4

END USE	
	Feed

BACKGROUND	
Breeder	Syngenta
Licensee	Cropmark
Agent	Not assigned yet

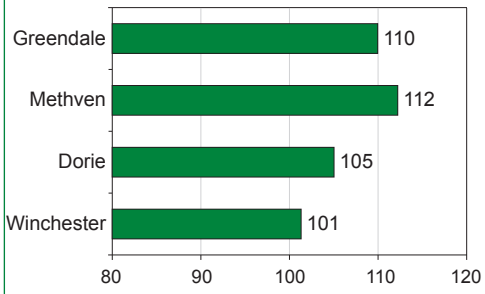
Yields are relative to other feed/biscuit wheats only. *First year in CPT, 1 year mean. ** Resistance is affected by pathotypes present (score is an average).

Aston (KMW2206) PVR

YEAR 1

Above average to high yielding premium grade milling wheat with good falling number. A degree of susceptibility to most diseases but resistant to powdery mildew. A tall cultivar with moderate straw strength and low to moderate sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Septoria tritici blotch	Mostly susceptible**
Stripe rust	Moderately susceptible**
Leaf rust	Mostly susceptible
Powdery mildew	Resistance
Fusarium head blight	Mostly susceptible

FIELD CHARACTERISTICS	
Straw strength	Moderate
Crop height	Tall
Maturity	Intermediate
Sprouting risk	Low-moderate

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	42
Test weight (kg/hl)	77
Protein (%) (N% x 5.7)	12.6
Falling number (sec)	397
Screenings (%)	0.8

END USE	Premium grade milling

BACKGROUND	
Breeder	PGG Wrightson Grain
Agent	Not yet assigned

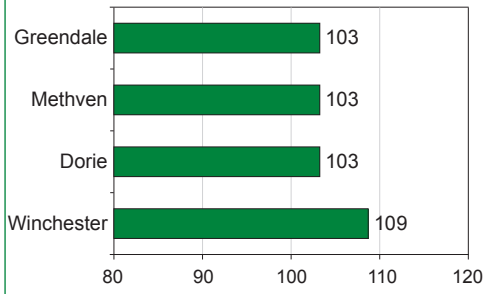
Yields are relative to other milling wheats only. * First year in CPT2, 1-year mean ** Resistance is affected by pathotypes present (score is an average).

CATHERINE PVR

YEAR 8

Above average to high yielding medium grade milling wheat with lower falling number. Susceptible to leaf rust, STB and FHB but with varying degrees of resistance to other diseases. A tall cultivar with moderate straw strength and low sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Septoria tritici blotch	Susceptible
Stripe rust	Mostly resistant
Leaf rust	Susceptible
Powdery mildew	Intermediate resistance
Fusarium head blight	Susceptible

FIELD CHARACTERISTICS	
Straw strength	Moderate
Crop height	Tall
Maturity	Intermediate
Sprouting risk	Low

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	50
Test weight (kg/hl)	76
Protein (%) (N% x 5.7)	12.2
Falling number (sec)	299
Screenings (%)	0.7

END USE	Medium grade milling

BACKGROUND	
Breeder	Plant & Food Research
Agent	Luisetti Seeds

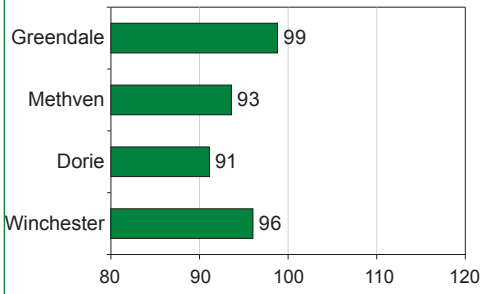
Yields are relative to other milling wheats only. * 3-year means for Winchester (no data for 2021-22) and Methven (no data for 2023-24).

CONQUEST PVR

YEAR 20

Below average yielding premium milling cultivar with high protein content and falling number. Has a degree of susceptibility to all common diseases, especially leaf rust. Medium height with a moderate to stiff straw and good sprouting resistance.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Septoria tritici blotch	Moderately susceptible
Stripe rust	Moderately susceptible
Leaf rust	Susceptible
Powdery mildew	Moderately susceptible
Fusarium head blight	Mostly susceptible

FIELD CHARACTERISTICS	
Straw strength	Moderate-stiff
Crop height	Medium
Maturity	Early-intermediate
Sprouting risk	Low

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	43
Test weight (kg/hl)	80
Protein (%) (N% x 5.7)	13.6
Falling number (sec)	415
Screenings (%)	0.8

END USE	Premium milling

BACKGROUND	
Breeder	Plant & Food Research
Agent	Luisetti Seeds

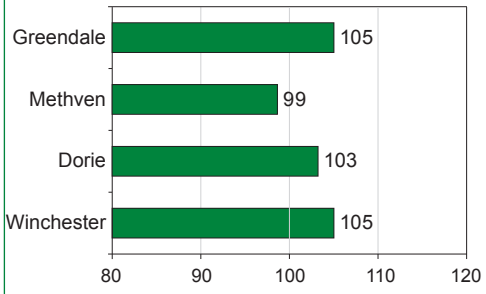
Yields are relative to other milling wheats only. * 3-year means for Winchester (no data for 2021-22) and Methven (no data for 2023-24).

DISCOVERY PVR

YEAR 12

An average to above average yielding medium grade milling wheat with good grain weights and falling number. Mostly susceptible to STB and FHB but has a range of resistance to other diseases. Cv. Discovery is susceptible to lodging and shattering and will benefit from a strong PGR programme.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Septoria tritici blotch	Mostly susceptible
Stripe rust	Intermediate resistance
Leaf rust	Moderately resistant**
Powdery mildew	Moderately resistant
Fusarium head blight	Mostly susceptible

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Tall
Maturity	Intermediate
Sprouting risk	Low-moderate

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	51
Test weight (kg/hl)	78
Protein (%) (N% x 5.7)	12.0
Falling number (sec)	372
Screenings (%)	0.5

END USE	Medium grade milling

BACKGROUND	
Breeder	Limagrain Europe S.A.
Agent	PGG Wrightson Grain

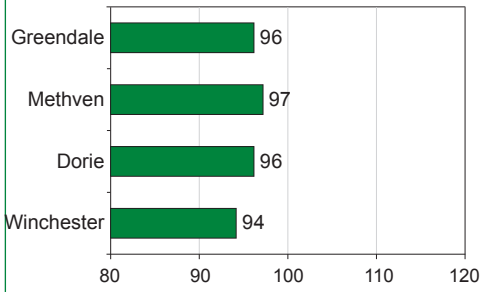
Yields are relative to other milling wheats only. * 3-year means for Winchester (no data for 2021-22) and Methven (no data for 2023-24). ** Resistance is affected by pathotypes present (score is an average).

DUCHESS PVR

YEAR 11

A premium milling cultivar with average yields compared to the other premium varieties. Cv. Duchess shows some susceptibility to most diseases with the exception of stripe rust. This stiff strawed cultivar has intermediate maturity and has a very low sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Septoria tritici blotch	Susceptible
Stripe rust	Moderately resistant
Leaf rust	Mostly susceptible
Powdery mildew	Moderately susceptible
Fusarium head blight	Mostly susceptible

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium
Maturity	Intermediate
Sprouting risk	Very low

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	43
Test weight (kg/hl)	78
Protein (%) (N% x 5.7)	12.6
Falling number (sec)	365
Screenings (%)	2.0

END USE	Premium milling

BACKGROUND	
Breeder	Plant & Food Research
Agent	Luisetti Seeds

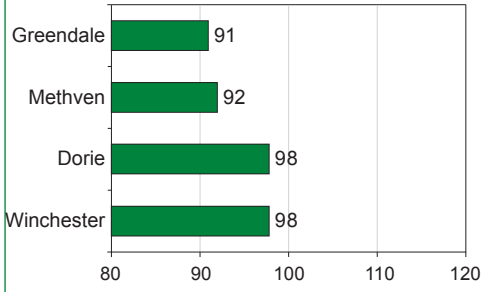
Yields are relative to other milling wheats only. * 3-year means for Winchester (no data for 2021-22) and Methven (no data for 2023-24).

GRIFFIN PVR

YEAR 10

A premium milling wheat with below average to average yields relative to other premium varieties, with lower protein and a good falling number. Moderately resistant to stripe rust, but a degree of susceptibility to other common wheat diseases, particularly STB and powdery mildew. A tall stiff-strawed variety with intermediate maturity and low to moderate sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Septoria tritici blotch	Mostly susceptible
Stripe rust	Moderately resistant
Leaf rust	Moderately susceptible
Powdery mildew	Mostly susceptible
Fusarium head blight	Moderately susceptible

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Tall
Maturity	Intermediate
Sprouting risk	Low-moderate

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	44
Test weight (kg/hl)	77
Protein (%) (N% x 5.7)	12.4
Falling number (sec)	377
Screenings (%)	0.8

END USE	Premium milling

BACKGROUND	
Breeder	Plant & Food Research
Agent	Luisetti Seeds

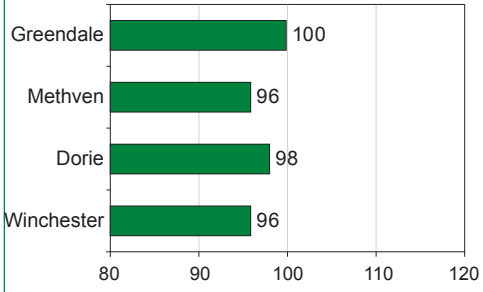
Yields are relative to other milling wheats only. * 3-year means for Winchester (no data for 2021-22) and Methven (no data for 2023-24).

HANSON PVR

YEAR 11

A gristing wheat cultivar with yields ranging from below average to average. Lower grain weight with good falling number. Has some resistance to the rusts but is susceptible to other diseases. Intermediate maturity with a stiff straw and low to moderate sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Septoria tritici blotch	Susceptible
Stripe rust	Moderately resistant
Leaf rust	Intermediate resistance
Powdery mildew	Moderately susceptible
Fusarium head blight	Susceptible

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium-tall
Maturity	Intermediate
Sprouting risk	Low-moderate

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	43
Test weight (kg/hl)	75
Protein (%) (N% x 5.7)	11.9
Falling number (sec)	379
Screenings (%)	1.5

END USE	Gristing

BACKGROUND	
Breeder	Plant & Food Research
Agent	Luisetti Seeds

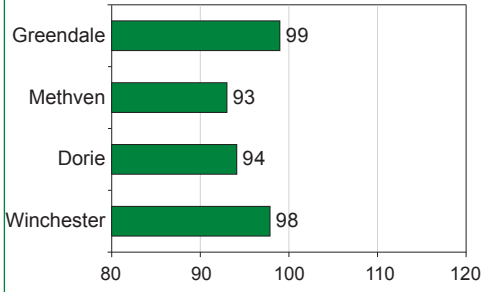
Yields are relative to other milling wheats only. * 3-year means for Winchester (no data for 2021-22) and Methven (no data for 2023-24).

RELIANCE PVR

YEAR 13

A premium milling cultivar with yields similar to cv. Duchess but with higher protein content, falling number and grain weight. Shows moderate resistance to stripe rust, but has susceptibility to most other diseases. A short to medium height variety with moderate to stiff straw and low risk of sprouting.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Septoria tritici blotch	Moderately susceptible
Stripe rust	Moderately resistant
Leaf rust	Susceptible
Powdery mildew	Moderately susceptible
Fusarium head blight	Susceptible

FIELD CHARACTERISTICS	
Straw strength	Moderate-stiff
Crop height	Short-medium
Maturity	Early-intermediate
Sprouting risk	Low

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	47
Test weight (kg/hl)	79
Protein (%) (N% x 5.7)	13.7
Falling number (sec)	385
Screenings (%)	1.1

END USE	Premium milling

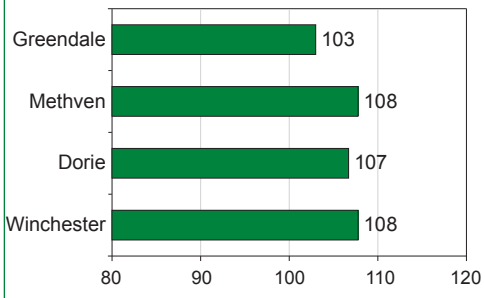
BACKGROUND	
Breeder	Plant & Food Research
Agent	Luisetti Seeds

Yields are relative to other milling wheats only. * 3-year means for Winchester (no data for 2021-22) and Methven (no data for 2023-24).

SY Medea (SY115666) YEAR 3

Above average to high yielding medium grade milling cultivar with an average falling number. Has varying degrees of resistance to most wheat diseases, with the exception of leaf rust. A medium height cultivar with early maturity and good sprouting resistance.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Septoria tritici blotch	Intermediate resistance
Stripe rust	Resistant
Leaf rust	Mostly susceptible
Powdery mildew	Resistant
Fusarium head blight	Intermediate resistance

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium
Maturity	Early
Sprouting risk	Very low

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	50
Test weight (kg/hl)	76
Protein (%) (N% x 5.7)	11.7
Falling number (sec)	348
Screenings (%)	0.5

END USE	Medium grade milling

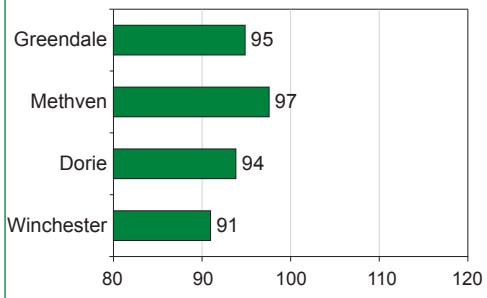
BACKGROUND	
Breeder	Syngenta
Licensee	Cropmark Seeds
Agent	Not yet assigned

Yields are relative to other milling wheats only. * Third year in CPT2, so 3-year mean, part from Methven (no results 2023-24) so is a 2-year mean.

VICEROY PVR YEAR 15

Below average yielding medium grade milling cultivar with higher protein and test weight. Moderately resistant to stripe rust with varying levels of susceptibility to other diseases. A medium to tall with a stiff straw and low sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Septoria tritici blotch	Susceptible
Stripe rust	Moderately resistant
Leaf rust	Susceptible**
Powdery mildew	Moderately susceptible
Fusarium head blight	Susceptible

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium-tall
Maturity	Intermediate
Sprouting risk	Low

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	45
Test weight (kg/hl)	81
Protein (%) (N% x 5.7)	12.6
Falling number (sec)	392
Screenings (%)	1.0

END USE	Medium grade milling

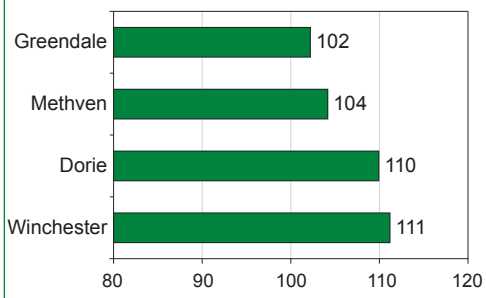
BACKGROUND	
Breeder	Plant & Food Research
Agent	Luisetti Seeds

Yields are relative to other milling wheats only. * 3-year means for Winchester (no data for 2021-22) and Methven (no data for 2023-24). ** Resistance is affected by pathotypes present (score is an average).

WHOPPER PVR YEAR 5

An above average to high yielding early season medium grade wheat cultivar. Cv. Whopper also features in the autumn sown feed wheat trials. Has some degree of resistance to disease, with the exception of STB and leaf rust. A stiff-strawed variety, with late maturity and moderate sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Septoria tritici blotch	Mostly susceptible**
Stripe rust	Mostly resistant
Leaf rust	Susceptible
Powdery mildew	Mostly resistant
Fusarium head blight	Intermediate resistance

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium
Maturity	Late
Sprouting risk	Moderate

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	47
Test weight (kg/hl)	77
Protein (%) (N% x 5.7)	10.8
Falling number (sec)	369
Screenings (%)	0.7

END USE	Medium grade milling/Feed

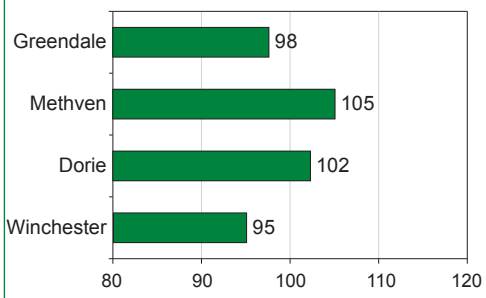
BACKGROUND	
Breeder	Sejet
Licensee	Plant & Food Research
Agent	Luisetti Seeds

Yields are relative to other milling wheats only. * 3-year means for Winchester (no data for 2021-22) and Methven (no data for 2023-24). ** Resistance is affected by pathotypes present (score is an average).

CRWT263 YEAR 4

A medium grade milling cultivar producing variable yield depending on location. Lower grain weight with average proteins. Has some degree of resistance to disease, with good resistance to stripe rust, but has a degree of susceptibility to STB and FHB. A medium height cultivar with a moderate straw strength and low sprouting risk.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Septoria tritici blotch	Susceptible
Stripe rust	Resistant
Leaf rust	Intermediate resistance
Powdery mildew	Intermediate resistance
Fusarium head blight	Moderately susceptible

FIELD CHARACTERISTICS	
Straw strength	Moderate
Crop height	Medium
Maturity	Early-intermediate
Sprouting risk	Low

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	40
Test weight (kg/hl)	78
Protein (%) (N% x 5.7)	12.1
Falling number (sec)	371
Screenings (%)	1.8

END USE	Medium grade milling

BACKGROUND	
Breeder	Plant & Food Research
Agent	

Yields are relative to other milling wheats only. * 3-year means for Winchester (no data for 2021-22) and Methven (no data for 2023-24).

2024/2025 trial site location map.

BALFOUR, NORTHERN SOUTHLAND

Makareva soil, Dryland
Trial operator: Chetan Parab, Plant & Food Research
Host farmer: Dave Bullmore

This autumn dryland barley trial was drilled on 29 April 2024 into a paddock sown in cv. Surge following wheat. Background soil N measured 184 kg/ha (0-60 cm), with an additional 145 kg N/ha applied in two applications. The trial received one pre-emergence herbicide application, two fungicides and one PGR application. Lodging was recorded in most cultivars. The trial was harvested on 30 January 2025.

CHERTSEY, MID CANTERBURY

Lismore silt loam, Irrigated
Trial operator: Matt Hicks, Cropmark Seeds
Host farmer: Ross Hewson

The trial was sown on 16 May 2024 into a paddock drilled in cv. SY Transformer following potatoes. Background soil N measured was 140 kg/ha (0-60 cm) with a further 105 kg N/ha applied. The trial received three herbicide applications, of which one was a pre-emerge herbicide. It also received four fungicide, three insecticide and three PGR applications. The trial received 202 mm of irrigation applied in 12 passes. This irrigated trial was harvested on 16 January 2025.

ST ANDREWS, SOUTH CANTERBURY

Waimakariri silt loam, Dryland
Trial operator: Matt Hicks, Cropmark Seeds
Host farmer: Peter Hewson

This dryland trial was established on 6 May 2024 in a paddock sown with cv. Sanette, following a wheat crop. Background soil N measured 53 kg/ha (0-60 cm), with a further 154 kg N/ha applied. The trial received three fungicide, two herbicide, two insecticide and three PGR applications during the growing season. It was harvested on 18 January 2025.

Autumn Sown Barley Agronomic Comment 2024/2025 Season

CULTIVAR	Years in CPT2 trials	Scald	Net blotch (net form)	Leaf rust	Powdery mildew	Straw strength	Crop height	Maturity
Baxter (CRBA173)	2	**(MSS)**	MRMS	**(S)**	MR	Stiff	Medium-tall	Intermediate
Buttress	6	MSS	MR	MS	MRR	Moderate	Medium-tall	Intermediate
Laureate	9	MRMS	MR	**(MSS*)**	MRR	Moderate	Medium	Intermediate
RGT Planet	9	**(MRMS)**	MS	MS	**(MRMS)**	Moderate	Medium	Early-intermediate
SY Dolomite	7	MRMS	MRMS	**(MSS)**	**(MRR)**	Moderate-stiff	Medium	Intermediate
SY Silhouette	7	**(MSS)**	MR	MS	**(MR)**	Stiff	Medium	Late
SY Transformer	6	MRMS	MR	**(MSS)**	**(MR)**	Moderate-stiff	Medium	Intermediate
CRBA180	1	(MSS)	MRMS	(S)	(MR)	Moderate	Medium	Intermediate
SY418-250	2	**(MS)**	MRMS	**(S)**	**(MR)**	Moderate-stiff	Medium	Intermediate
SY418-336	3	**(MSS)**	MRMS	MS	**(MRMS)**	Stiff	Short-medium	Intermediate

Key
HS = highly susceptible
S = susceptible
MSS = mostly susceptible
MS = moderately susceptible
MRMS = intermediate resistance
MR = moderately resistant
R = resistant

Disease susceptibility sourced from FAR-funded Disease Nurseries at Lincoln and Palmerston North (assessments carried out by Plant & Food Research).
Scores followed by * indicate resistance is affected by pathotypes present (score is an average).
"Unknown" indicates there is insufficient trial information in New Zealand to assess resistance.
(brackets) indicate there is limited New Zealand trial data to support the resistance rating (i.e. the cultivar has either been in trials for less than three years and/or disease pressure has been low).
Bold text indicates there is a change in rating.

Autumn Sown Barley Cultivar Evaluation 2024/2025 Season - yield (t/ha) - Canterbury and Southland

CULTIVAR	Chertsey	St Andrews	Balfour	Years in CPT2 trials (Autumn sown)
Region	Mid Canterbury	South Canterbury	Southland	
Soil Type	Lismore silt loam	Waimakariri silt loam	Makareva soil	
Previous crop	Potatoes	Wheat	Wheat	
Sowing date	16-May	6-May	29-Apr	
Harvest date	16-Jan	18-Jan	30-Jan	
Dryland/Irrigated	Irrigated	Dryland	Dryland	
Baxter (CRBA173)	**13.5**	**13.1**	7.3	2
Buttress	12.6	12.0	**8.2**	6
Laureate	**13.4**	**12.8**	7.0	9
RGT Planet	11.7	12.3	5.8	9
SY Dolomite	12.7	**12.9**	**8.6**	7
SY Silhouette	12.8	12.2	**8.0**	7
SY Transformer	**13.4**	**13.0**	7.4	6
CRBA180	**13.4**	12.7	**8.1**	1
SY418-250	12.4	12.4	7.5	2
SY418-336	**13.0**	**12.9**	**7.8**	3
Site mean yield	12.9	12.6	7.6	
P-Value	<0.001	<0.001	<0.001	
LSD (p=0.05)	0.6	0.5	0.9	
CV (%)	3.4	2.5	7.9	

Bold text indicates the cultivar was amongst the highest yielding group of cultivars.

Canterbury

CULTIVAR	T.G.W. (g)	Test Weight (kg/hl)	Protein (%) (N% x 6.25)	Screenings (%)
Baxter (CRBA173)	49	62	9.1	4.7
Buttress	52	64	10.1	1.3
Laureate	53	64	10.1	2.0
RGT Planet	52	64	10.0	1.7
SY Dolomite	54	63	9.8	2.8
SY Silhouette	52	62	10.2	3.3
SY Transformer	52	64	9.8	2.4
CRBA180	52	62	10.5	2.7
SY418-250	54	63	8.8	1.6
SY418-336	50	62	10.2	4.0
Mean	52	63	9.8	2.6
P-value	0.215	0.136	0.011	0.235
LSD (p=0.05)	NS	NS	0.7	NS

Mean of two trials.
NS, LSD not calculated as P-value not significant

Southland

CULTIVAR	T.G.W. (g)	Test Weight (kg/hl)	Protein (%) (N% x 6.25)	Screenings (%)
Baxter (CRBA173)	39	59	10.3	15.1
Buttress	45	65	11.8	4.4
Laureate	41	63	11.2	7.8
RGT Planet	42	62	11.2	13.6
SY Dolomite	49	64	11.1	3.8
SY Silhouette	46	63	11.3	7.7
SY Transformer	41	62	11.3	11.4
CRBA180	45	60	11.1	11.8
SY418-250	44	62	10.8	6.1
SY418-336	41	61	11.4	13.7
Mean	43	62	11.2	9.5
P-value	-	-	-	-
LSD (p=0.05)	-	-	-	-

Single trial - no P-value or LSD available.
Quality data are also presented as 4-year means on the individual cultivar description pages.

barley - 4-year adjusted mean

Autumn Sown Barley 4-year adjusted mean - relative yield by site - Canterbury and Southland

CULTIVAR	Chertsey	St Andrews	Canterbury mean yield	Balfour		Seasons in CPT2 trials (Autumn sown)
Region	Mid Canterbury	South Canterbury		Southland		
Dryland/Irrigated	Irrigated	Dryland		Dryland		
No. of trials	4	4	8	3		
Baxter (CRBA173)	**103**	**104**	**104**	97		2
Buttress	97	98	97	**102**		6
Laureate	**99**	99	99	95		9
RGT Planet	94	94	94	82		9
SY Dolomite	**101**	**103**	**102**	**108**		7
SY Silhouette	**100**	98	99	**106**		7
SY Transformer	**100**	**101**	**101**	**106**		6
CRBA180	**(105)**	**(100)**	**(102)**	**(106)**		1
SY418-250	97	**100**	99	**99**		2
SY418-336	**104**	**103**	**103**	**99**		3
Site mean yield (t/ha)	11.7	11.9	11.8	8.2		
P-value	<0.001	<0.001	<0.001	0.008		
LSD (estab. cv) (p=0.05)	6	5	3	11		
LSD (new vs estab.) (p=0.05)	9	7	5	15		

No result from Balfour in 2023-24 (data is a 3-year mean).
LSD (estab. cv) is for comparing two "established" cultivars (that have both been in all trials).
LSD (new vs estab.) is for comparing a "new" (first year) cultivar with an "established" cultivar.
Bold text indicates the cultivar was amongst the highest yielding group of cultivars (based on estab. cv LSD).
Figures in brackets are less robust as they are only based on one year of data.

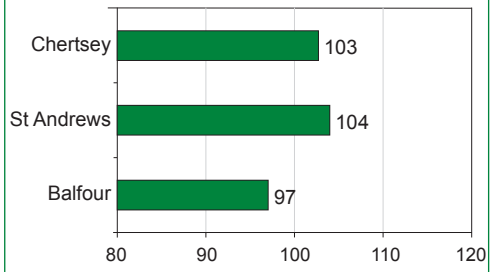
barley cultivar descriptions

Baxter (CRBA173) PVR

YEAR 2

Average to above average yielding feed barley. Has a degree of resistance to net blotch and powdery mildew. Medium to tall height with intermediate maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Mostly susceptible
Net blotch	Intermediate resistance
Leaf rust	Susceptible
Powdery mildew	Moderately resistant

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium-tall
Maturity	Intermediate

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	49	43
Test weight (kg/hl)	61	59
Protein (%) (N% x 6.25)	10.4	11.3
Screenings (%)	5.3	13.4

END USE	
	Feed

BACKGROUND	
Breeder	Sejet
Head Licensee	Plant & Food Research
Agent	Luisetti Seeds

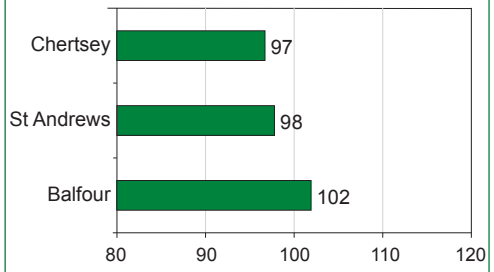
* Second year in CPT2, so 2-year means, 1-year means Balfour (no data for 2023-24).

BUTTRESS PVR

YEAR 6

Average yielding feed cultivar, with malting potential. Monitor for scald and leaf rust, has some resistance for net blotch and powdery mildew. A medium to tall variety with moderate straw strength.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Mostly susceptible
Net blotch	Moderately resistant
Leaf rust	Moderately susceptible
Powdery mildew	Mostly resistant

FIELD CHARACTERISTICS	
Straw strength	Moderate
Crop height	Medium-tall
Maturity	Intermediate

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	50	48
Test weight (kg/hl)	64	66
Protein (%) (N% x 6.25)	11.2	12.3
Screenings (%)	2.8	3.6

END USE	
	Feed, malting potential

BACKGROUND	
Breeder	Sejet
Head Licensee	Plant & Food Research
Agent	Luisetti Seeds

* 3-year means Balfour 3-year means (no data for 2023-24).

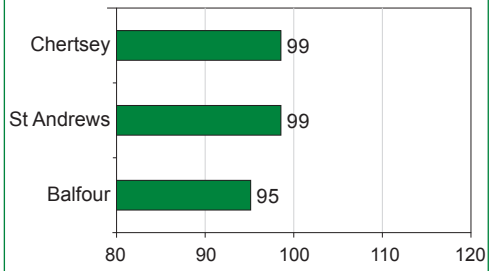
barley cultivar descriptions

LAUREATE PVR

YEAR 9

A malting, distilling and feed barley producing average to below average yields. Moderately susceptible to some leaf rust pathotypes, but has resistance to other diseases. Medium height with moderate straw strength, benefiting from a good PGR programme in higher yielding situations.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Intermediate resistance
Net blotch	Moderately resistant
Leaf rust	Mostly susceptible**
Powdery mildew	Mostly resistant

FIELD CHARACTERISTICS	
Straw strength	Moderate
Crop height	Medium
Maturity	Intermediate

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	51	47
Test weight (kg/hl)	63	62
Protein (%) (N% x 6.25)	11.0	12.2
Screenings (%)	3.6	7.1

END USE	
	Malting/Feed

BACKGROUND	
Breeder	Syngenta
Head Licensee	Cropmark Seeds
Agent	PGG Wrightson Grain

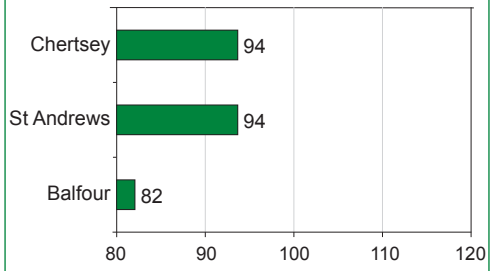
* 3-year means Balfour 3-year means (no data for 2023-24).
** Resistance is affected by pathotypes present (score is an average).

RGT PLANET PVR

YEAR 9

A malting and feed variety producing below average yields. Moderately susceptible to net blotch and leaf rust, but some degree of resistance to other diseases. A medium height variety with moderate straw strength and early to intermediate maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Intermediate resistance
Net blotch	Moderately susceptible
Leaf rust	Moderately susceptible
Powdery mildew	Intermediate resistance

FIELD CHARACTERISTICS	
Straw strength	Moderate
Crop height	Medium
Maturity	Early-intermediate

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	52	47
Test weight (kg/hl)	63	63
Protein (%) (N% x 6.25)	11.0	12.5
Screenings (%)	3.2	9.8

END USE	
	Malting/Feed

BACKGROUND	
Breeder	RAGT
Head Licensee	RAGT New Zealand
Agent	PGG Wrightson Grain

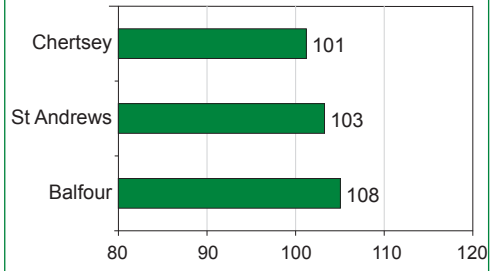
* 3-year means Balfour 3-year means (no data for 2023-24).

SY DOLOMITE PVR

YEAR 7

Average to above average yielding feed cultivar in Canterbury and high yielding in Southland. Mostly susceptible to leaf rust, but shows resistance to other diseases, especially powdery mildew. A moderate to stiff strawed cultivar with intermediate maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Intermediate resistance
Net blotch	Intermediate resistance
Leaf rust	Mostly susceptible
Powdery mildew	Mostly resistant

FIELD CHARACTERISTICS	
Straw strength	Moderate-stiff
Crop height	Medium
Maturity	Intermediate

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	52	49
Test weight (kg/hl)	61	63
Protein (%) (N% x 6.25)	10.7	12.2
Screenings (%)	4.0	5.7

END USE	
	Feed

BACKGROUND	
Breeder	Syngenta
Head Licensee	Cropmark Seeds
Agent	Wholesale Seeds

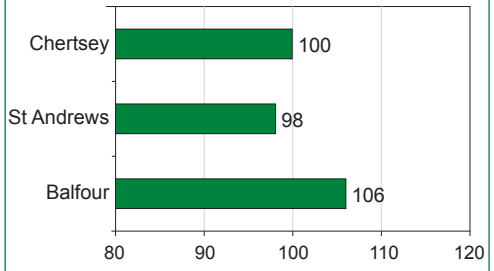
* 3-year means Balfour 3-year means (no data for 2023-24).

SY SILHOUETTE PVR

YEAR 7

Average yielding feed cultivar in Canterbury and high yielding in Southland. Shows some level of resistance to the net blotch and powdery mildew but some susceptibility to scald and leaf rust. A later maturing, medium height cultivar with a stiff straw.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Mostly susceptible
Net blotch	Moderately resistant
Leaf rust	Moderately susceptible
Powdery mildew	Moderately resistant

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium
Maturity	Late

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	53	50
Test weight (kg/hl)	61	63
Protein (%) (N% x 6.25)	11.2	12.5
Screenings (%)	4.2	6.6

END USE	
	Feed

BACKGROUND	
Breeder	Syngenta
Head Licensee	Cropmark Seeds
Agent	Advance Agriculture, Cates

* 3-year means Balfour 3-year means (no data for 2023-24).

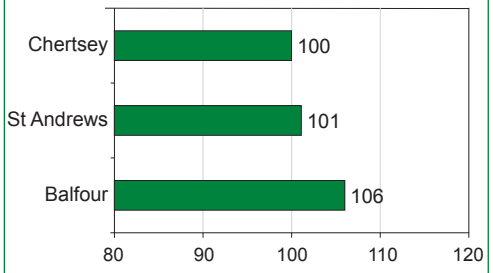
barley cultivar descriptions

SY TRANSFORMER PVR

YEAR 6

Average performer in Canterbury and high yielding in Southland. Some resistance to common barley diseases, with the exception of leaf rust. A medium height cultivar with moderate to stiff straw strength.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Intermediate resistance
Net blotch	Moderately resistant
Leaf rust	Mostly susceptible
Powdery mildew	Moderately resistant

FIELD CHARACTERISTICS	
Straw strength	Moderate-stiff
Crop height	Medium
Maturity	Intermediate

GRAIN QUALITY (4-year means)*	Canty	Sthld
TGW (g)	50	47
Test weight (kg/hl)	62	61
Protein (%) (N% x 6.25)	11.0	12.0
Screenings (%)	4.1	7.4

END USE	
	Feed, malting potential

BACKGROUND	
Breeder	Syngenta
Head Licensee	Cropmark Seeds
Agent	PGG Wrightson Grain

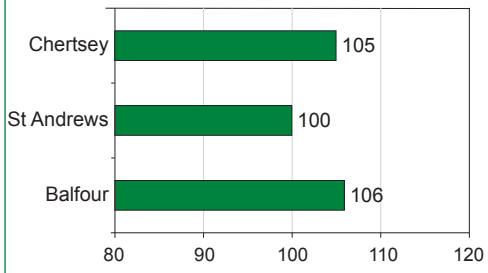
* 3-year means Balfour 3-year means (no data for 2023-24).

CRBA180

YEAR 1

Average to high yielding feed barley. Has a degree of resistance to net blotch and powdery mildew, but some susceptibility to scald and leaf rust. Medium to tall height with intermediate maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Mostly susceptible
Net blotch	Intermediate resistance
Leaf rust	Susceptible
Powdery mildew	Moderately resistant

FIELD CHARACTERISTICS	
Straw strength	Moderate
Crop height	Medium
Maturity	Intermediate

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	51	49
Test weight (kg/hl)	61	60
Protein (%) (N% x 6.25)	11.5	12.1
Screenings (%)	3.9	10.1

END USE	
	Feed

BACKGROUND	
Breeder	Sejet
Head Licensee	Plant & Food Research
Agent	Luisetti Seeds

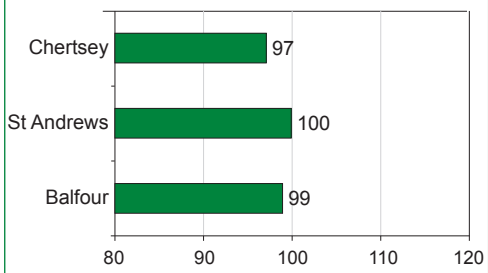
* First year in CPT2, so 1-year mean.

SY418-250

YEAR 2

Average yielding feed variety. Has some resistance to net blotch and powdery mildew, and a degree of susceptibility to scald and leaf rust. A moderate to stiff-strawed cultivar with intermediate maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Moderately susceptible
Net blotch	Intermediate resistance
Leaf rust	Susceptible
Powdery mildew	Moderately resistant

FIELD CHARACTERISTICS	
Straw strength	Moderate-stiff
Crop height	Medium
Maturity	Intermediate

GRAIN QUALITY (4-year means)*	Canty	Sthld
TGW (g)	51	48
Test weight (kg/hl)	61	63
Protein (%) (N% x 6.25)	9.8	11.8
Screenings (%)	3.3	4.4

END USE	
	Feed

BACKGROUND	
Breeder	Syngenta
Head Licensee	Cropmark Seeds
Agent	Not yet assigned

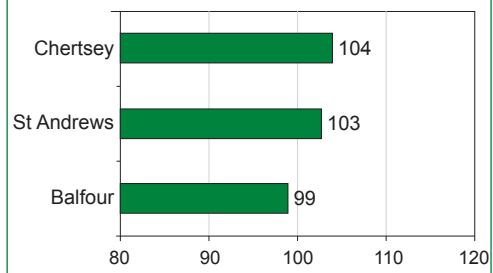
* Second year in CPT2, so 2 year means, 1-year means Balfour (no data for 2023-24).

SY418-336

YEAR 3

Above average yielding feed variety in Canterbury, with average yields in Southland. Moderately susceptible to leaf rust and mostly susceptible to Scald, but has resistance to net blotch and powdery mildew. A stiff-strawed short to medium height cultivar with intermediate maturity.

RELATIVE YIELDS – 4-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Mostly susceptible
Net blotch	Intermediate resistance
Leaf rust	Moderately susceptible
Powdery mildew	Intermediate resistance

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Short-medium
Maturity	Intermediate

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	51	46
Test weight (kg/hl)	62	62
Protein (%) (N% x 6.25)	10.9	12.3
Screenings (%)	3.9	10.3

END USE	
	Feed, malting potential

BACKGROUND	
Breeder	Syngenta
Head Licensee	Cropmark Seeds
Agent	Not yet assigned

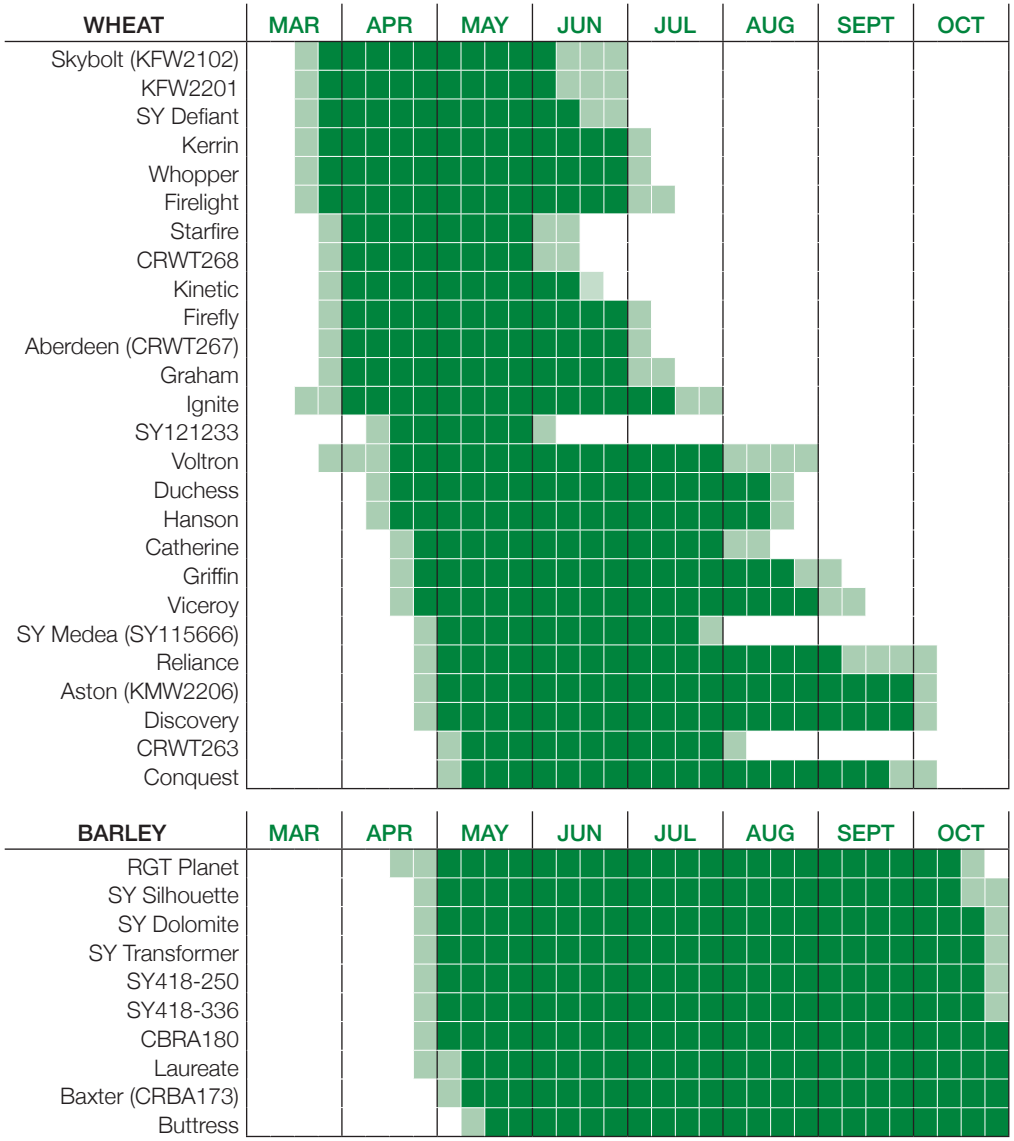
* Third year in CPT2, so 3 year means, 2-year mean Balfour (no data for 2023-24).

sowing date guidelines

Autumn sown wheat and barley – Sowing date guidelines 2025

These guidelines have been constructed from FAR sowing date trial data combined with agronomic experience. In the case of some new cultivars, UK information is also used.

'Optimal' sowing dates – ■ 'Less ideal' sowing dates – ■



1. Crops sown at the early window could be at risk from late frosts during flowering and grainfill.
2. Barley cultivars at the late sowing window are more suited to irrigated, higher fertility sites.

sowing rate calculation

This calculation uses several variables to give an accurate answer for suggested sowing rates.

To use the calculation you will need to know the following:

- the plant population you want to establish for your crop,
- the thousand grain weight of the seed,
- the germination percentage (%) of the seed,
- the expected crop emergence – this is determined by time of sowing, seed quality and management factors (e.g. seed treatment, sowing depth, seed-bed quality).

The steps to follow are:

THOUSAND GRAIN WEIGHT

If using certified seed, the value for thousand grain weight (TGW) should be available on the seed bag or on request. If you need to calculate it for yourself, the number of seeds you will need to count will depend on the accuracy of your scales. Make sure your seed sample is representative of the whole line.

1. If you have scales that will weigh to 0.1 g, count 200 seeds, weigh them and multiply the weight by 5 to get thousand grain weight
2. If not, count and weigh 1000 seeds.

GERMINATION PERCENTAGE (%)

This should also be on the bag label or available on request. A purity & germination (P&G) test figure is usually quoted. Germination tests determine the maximum germination potential of a given seed line. Some caution is advised as the germination figure does not always equate to the percentage of seeds expected to emerge in the field. This can be due to conditions in the field as well as the physiological quality of a particular seed line and its tolerance to stress.

EMERGENCE PERCENTAGE (%)

Emergence percentage is an estimate based on actual emergence in the field. Further information can be gained from 'stress tests' and 'vigour tests'. These test results are not usually supplied, but may be available on request. Experience certainly helps when deciding on this figure.

Examples of emergence could be:

- April sown: 90% emergence (assumes warm, moist conditions)
- May sown: 85% emergence
- June sown: 80% emergence
- July sown: 75% emergence (assumes maybe poorer quality seedbed, sown too deep, cold soil conditions).

$$\text{SOWING RATE (kg/ha)} = \frac{\text{target plant population (p/m}^2\text{) x TGW (g) x 100}}{\text{\% germination x \% emergence}}$$

Examples:

AUTUMN WHEAT

A wheat sample TGW = 45 g
B % germination = 95%
C % emergence = 90%
D target plant population = 125 pl/m^2
E required sowing rate is 66 kg/ha

SPRING BARLEY

A barley sample TGW = 40 g
B % germination = 90%
C % emergence = 85%
D target plant population = 225 pl/m^2
E required sowing rate is 118 kg/ha

The calculation can be transformed to determine the actual emergence achieved (useful if poor establishment):

$$\text{EMERGENCE (\%)} = \frac{\text{actual plant population (p/m}^2\text{) x TGW (g) x 100}}{\text{sowing rate (kg/ha) x \% germination}}$$

The actual plant population needs to be counted in the field (rod or quadrat methods) for the above calculation, whilst TGW, sowing rate and germination (%) are figures that were known at drilling.

ISSUES FOR SUCCESSFUL ESTABLISHMENT

MOISTURE: Moisture is essential for seed germination. Once germinated, the young seedling is also very fragile and may dry out rapidly if there is insufficient moisture in the root zone. Too much moisture (waterlogging) will mean oxygen starvation, which will lead to germination failure or seedling death.

NUTRITION: Plant roots follow the easiest path for growth, so nutrition should be placed near the roots. Some fertilisers will, however, "burn" seedlings, so they must be placed out of direct contact with the seed.

SEEDBED: A trashy seedbed may reduce seed/soil contact, thereby reducing germination, while a compacted seedbed may restrict emergence. A seedbed with large clods may also force emerging seedlings to become deformed (and therefore weakened) in their attempt to emerge.

SOWING DEPTH: Sown too shallow, seed may be subject to bird damage and susceptible to drying out. If sown too deep, young plants will struggle to emerge and may be weak and therefore prone to disease or may become deformed. Check that your drill is placing seed at its optimum depth.

TIME OF SOWING: Sowing crops in the early autumn or late spring, when soil temperatures are warm and moisture is (hopefully) ideal, should mean rapid germination and a high emergence rate of seedlings. The autumn sown crops will also have more opportunity to tiller, so sowing rates will need to take this into account.

WEEDS, DISEASES AND PESTS: Weeds will compete with the crop for light, moisture and nutrients. Weeds may be more of a problem in thinly sown (or poorly established) crops. The main disease problem for emerging seedlings is fungi affecting the new roots, but these are more likely to occur in a cool, damp environment, when seedlings are less vigorous. Seed treatment with fungicides may be beneficial if seed-borne diseases are a concern, but these treatments may also delay crop emergence. A wide range of pests can cause problems - slugs, weevils, grass grubs, etc. If these are present, control options need to be evaluated.

ESTABLISHMENT TARGETS FOR AUTUMN SOWINGS

- April 125 plants/m^2
- May 125-175 plants/m^2
- June 200 plants/m^2

Use the sowing rate calculation on the previous page to achieve your establishment target. Usually, there is no real advantage of sowing more than 200 plants/m^2.

SEED QUALITY

High quality seed has:

- 90% germination or higher
- less than 10% *Fusarium/Microdochium*
- a thousand seed weight (TSW) of 40g or more

Attributes of example lines

Seed lot	Germination[1] (%)	Abnormal[2] seedlings (%)	Remainder[3] (%)	*Fusarium*[4] (%)
A	98	1	1	3
B	80	14	6	14
C	91	7	2	4

[1] Percentage of normal seedlings (no defects) reported from the germination test.
[2] Percentage of abnormal seedlings (defects such as twisted shoots or stunted roots; such seedlings will not usually emerge).
[3] Seeds which have not germinated, either because they are dormant, or more commonly, dead.
[4] Seed-borne plant pathogen present after fungicide seed treatment.

Note:

- Seed lot A – high quality seed lot.
- Seed lot B – reject because of poor germination; the presence of abnormal seedlings and dead seeds indicates the seed lot has undergone physiological deterioration and will struggle to perform once sown; *Fusarium* level may also contribute to emergence problems.
- Seed lot C – germination acceptable but some evidence of deterioration.

PATHOGEN THRESHOLDS

- European (UK, Denmark) guidelines suggest that if less than 10% *Fusarium/Microdochium* or 5% *Drechslera* infection, untreated seed can be sown in early autumn or late spring, however no New Zealand thresholds have been established.
- Seed-borne pathogen data for New Zealand cereal seed lots usually not available.
- Advisable to sow fungicide treated seed at all times because of the risk from soil-borne *Fusarium*.
- A zero threshold exists for loose smut and seed-borne barley stripe mosaic virus. Seed lines with loose smut will be rejected from certification and uncertified seed must be treated.

Seed quality details will be freely available from a reputable seed merchant upon request.

FUNGICIDE SEED TREATMENT STRATEGIES

1. Consider using Kinto®Duo, Raxil® Star, Rancona® Dimension or Vitaflo® for protection from soil or seed-borne *Fusarium*.
2. Consider using Systiva® for protection from rusts and powdery mildew.
3. All of those products plus Capri® provide control of loose smut and bunt.

Note: Any chemical (fungicide or insecticide) has the potential to reduce germination/establishment if applied to a physically damaged seed lot (e.g. seed coat cracked). Cracking may allow the chemical access to the embryo; this may either kill the seed, or result in the production of abnormal seedlings.

INSECTICIDE SEED TREATMENT STRATEGIES

Products based on imidacloprid (e.g. Gaucho®) and clothianidin (e.g. Poncho®) are the only registered insecticide seed treatments providing some control of aphids, grass grub larvae and Argentine stem weevil. They should provide control of aphids up until the plant reaches GS13/21, or as the first tiller is appearing. At this time, the plant has grown enough that a dilution effect occurs. No matter what the sowing date, control should persist through until GS13/21 (unless heavy rain occurs). For spring sowings, insecticide seed treatments can be used for grass grub control, but not aphids, as seedling growth occurs too rapidly.

Considerations for insecticide seed treatment use:

- For sowings before 1 May, the need for a foliar aphicide should be monitored after GS13/21
- For sowings after 1 May, the need for a foliar aphicide should be monitored after GS12/13.
- The best use may be when both grass grub and early aphid protection are needed, when spraying is difficult or inconvenient, or to provide management flexibility.
- Growers should consider the economics of insecticide seed treatment versus foliar insecticides when only aphid pressure is high, especially if seed is sown early and further foliar aphicide applications may be necessary.

glossary of terms

4-year adjusted mean

A “4-year adjusted mean” is a mean over trials in the last 4-years. This mean has been adjusted statistically to take account of the absence of some cultivars in some trials (for example, if a cultivar was missing from an especially high yielding trial, it would otherwise be unfairly disadvantaged). This adjustment enables fair comparisons between cultivars within each site and region.

CPT

Cereal performance trials (CPT) comprise of two stages, administered jointly through a single management committee.

CPT 1: Pre-commercial. Assesses performance of advanced breeding lines within a series of collaborative breeder/seed company operated trials. Stage 1 trials only operate in Canterbury.

CPT 2: Focus on performance of close to market pre-commercial and commercial cultivars. Milling and malting cultivars must do a minimum of 2 years in CPT 1 and feed cultivars a minimum of 1 year in CPT 1 before being eligible for promotion into CPT 2.

CV (%)

The “Coefficient of Variation”, or CV (%), is another measure of the variability in a trial. If the differences between cultivars are similar across all replicates, the trial CV is low (<10%) and the LSD is low (both desirable). If the trial CV is high (>10%), there is a high level of unexplained variation, and the trial results are less accurate.

Falling number

Low falling number scores are an indicator of sprouting. Falling number (FN) is an indirect measure of alpha-amylase levels in the grain with low FN indicating high alpha-amylase activity. FN is tested three weeks after harvest and only on milling wheats.

Limited data

For newer cultivars that we have only evaluated for one or two years, we may not have sufficient disease or agronomic observations to feel confident about the data presented. In this case the data is given in brackets ( ).

LSD

The “Least Significant Difference”, or LSD, is used to compare the mean yields of two cultivars. The difference in yield between two cultivars must be greater than the LSD for those two cultivars to be proven different (statistically at P=0.05). For example, if the LSD is 0.8, a difference between two cultivars of 0.5 is not ‘proven’, while a difference of 1.2 is proven.

Any cultivar falling within one LSD of the highest yielding cultivar has been highlighted in the yield tables as part of the highest yielding group. Note that some cultivars with the same yield may not appear in the top yielding group due to rounding figures to zero or one decimal place.

An LSD is not provided if the P-value is not significant at the p=0.05 level.

P-Value

The “P-value” helps determine whether the observed differences are likely due to differences between varieties or due to chance.

A P-value of <0.05 indicates that there is a strong likelihood that the observed differences are repeatable.

A P-value of >0.05, indicates differences may have occurred by chance, so it is not considered statistically significant.

Where the P-value for a trial is not statistically significant, the LSD (where appropriate) has not been reported in the tables. In these cases, no statistical differences between cultivars have been observed.

Protein (%)	The protein content is obtained by measuring the nitrogen (N) content and using a conversion factor to calculate the protein (%). The conversion factors in this booklet are N x 5.7 for all wheat and N x 6.25 for all barley. Some feed wheat users choose to use N x 6.25. To convert the wheat protein from 5.7 to 6.25 use a conversion factor of 1.096 x protein (%).
PVR	Plant variety rights (PVRs) grant plant breeders and developers the exclusive right to commercialise propagating material of a new plant variety, for a certain length of time. The term of protection for cereals is 20 years. It is illegal to produce and sell seed from the new variety without the express permission of the licence holder for the term of protection. PVR status is recorded in the cultivar descriptions pages, after the cultivar's name, and denotes varieties which have been granted PVR or have filed for PVR (provisional).
Relative yield	Yields relative to a base 100 are given where 100 is the average yield across all cultivars. These relative yields make it easier to compare sites and seasons which may differ widely in mean yields. Yields are given rankings in the cultivar description pages based on this relative yield: Below average: 98 or less, Average: 99 – 101, Above average: 102 – 105, High yielding: 106 and above.
Screenings (%)	Percentage of small grains, weed seeds and foreign matter which pass through a 2.0 mm rotoscreen.
Test weight	Measured in kilograms per hectolitre (kg/hl), test weight is an indication of grain density. Test weight is reported at a standard grain moisture of 14%.
TGW or TSW	Thousand grain (seed) weight, reported in grams (g). Grain weight is needed both as a measure of grain quality and for calculating sowing rates.
Weather data	Weather data summaries from the nearest weather station can be found on the FAR website. Search for Harvest Snippets.
***Fusarium* head blight**	Disease caused by *Fusarium* spp.
Leaf rust	Disease caused by *Puccinia recondite* f.sp. *tritici*.
Powdery mildew	Disease caused by *Erysiphe graminis* f.sp. *tritici*.
Septoria tritici blotch (STB)	Disease caused by *Zymoseptoria tritici*, (perfect stage *Mycosphaerella graminicola*).
Stripe rust	Disease caused by *Puccinia striiformis* f.sp. *tritici*.

paddock sowing record

The table below is for you to record your cultivar choice and other useful information for your paddock history.

An example is provided.

Paddock	Cultivar name	Sowing rate (kg/ha)	Seed treatment	Area sown (ha)	Fertiliser (kg/ha)	Sowing date
Bluegum	Conquest	96 kg/ha	Raxil® Star	10 ha	DAP 200	3 May

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