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FAR Cultivar Evaluation

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FAR CULTIVAR EVALUATION

FOUNDATION FOR ARABLE RESEARCH

FAR

autumn sown wheat and barley 2025/2026

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introduction and welcome

The 2025–26 season was highly variable, with localised weather events significantly affecting grain yields and quality across many regions.

In Canterbury, conditions were even more challenging than in 2024–25. Several FAR trials were lost due to poor establishment and waterlogging (dryland autumn feed wheat at St Andrews), take-all (irrigated feed wheat at Methven), sharp eyespot (irrigated and dryland autumn feed wheat at Chertsey), a late-season disease complex (autumn milling wheat at Greendale), and hail damage (irrigated autumn feed barley at Chertsey). Mild spring conditions also contributed to increased incidence and severity of barley yellow dwarf virus (BYDV). This, combined with an influx of wet-season diseases following post-Christmas rainfall, resulted in disappointing yields in some trials.

Despite these localised challenges, many growers benefited from a dry, though windy, spring that allowed key management inputs to be applied at optimal timings. Low foliar disease pressure during October and November also supported crop performance, with some trials exceeding expectations. The irrigated autumn feed wheat trial at Temuka achieved an average yield of 12.5 t/ha, compared with a four-year mean of 11.9 t/ha, while the dryland autumn feed wheat trial at Fairlie averaged 11.5 t/ha, compared with a four-year mean of 11.2 t/ha.

Positive yield outcomes were also recorded elsewhere in the country. Autumn feed wheat averaged 12.6 t/ha in Southland and 10.8 t/ha in the lower North Island, both exceeding their respective four-year means of 11.3 t/ha and 9.8 t/ha. Autumn-sown milling wheat yields were also above the four-year average, yielding 11.8 t/ha compared with a four-year mean of 11.0 t/ha. However, poor harvest conditions adversely affected grain quality, with mean falling numbers across the trials averaging 238 seconds, well below the four-year mean of 349 seconds.

Low disease pressure in disease nurseries resulted in few rating changes to foliar diseases, although there were some changes to Fusarium head blight (FHB) in feed wheat. For individual cultivar disease ratings, see the agronomic comments. To find out more about the weather at each trial location, visit the FAR website (www.far.org.nz) and search for Harvest Snippets 2026: these publications include monthly weather summaries across the growing season.

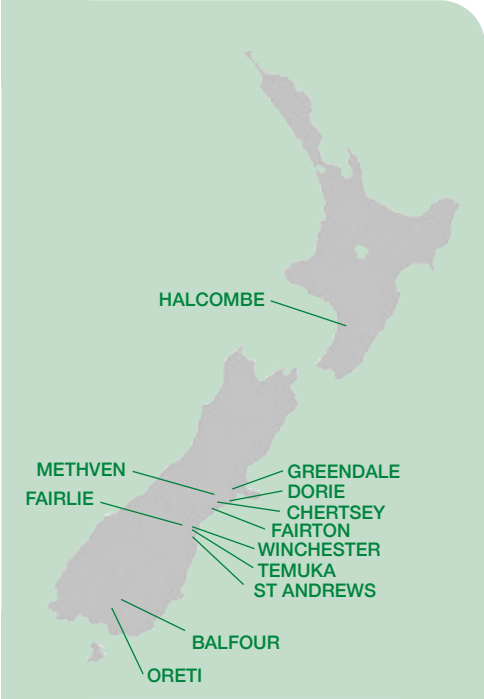
Of the limited barley trials that survived the season's challenges, autumn-sown barley yields in South Canterbury were below their four-year averages, while yields in Southland were comparable with long-term means.

We acknowledge the considerable seasonal challenges faced during 2025–26, along with industry changes in cultivar ownership and stewardship, which have contributed to the delayed publication of this booklet. We thank all contributors for their patience and support and look forward to a more favourable and straightforward season in 2026–27.

Joanne Drummond
Research Leader – Resilient Cropping Systems

Jacqueline Straathof
CPT Manager

wheat - trial site details



2025/2026 trial site location map.

BALFOUR (Feed Wheat)

Crookstone silt loam, Dryland
Trial operator: Chetan Parab,
New Zealand Institute for Bioeconomy Science
Host farmer: Collins Farming Ltd

Following tulips this dryland trial was sown on 03 April 2025 into a paddock planted with the cultivar SY Defiant. A total of 280 kg/ha of nitrogen (N) was applied in three separate applications, supplementing a baseline soil N level of 78 kg N/ha (0–60 cm). The trial was treated with two herbicide applications, two fungicide applications, and one plant growth regulator (PGR) treatment. Some lodging was recorded; however, the trial was harvested successfully on 4 March 2026.

CHERTSEY (Feed Wheat)

Dominant soil type Chertsey shallow silt loam, Dryland and Irrigated
Trial operator: NZ Arable
Host farmer: FAR Chertsey Arable Site

These trials were not harvested because of excessive disease and hail damage.

DORIE (Milling Wheat)

Templeton silt loam, Irrigated
Trial operator: Russell Kirk,
New Zealand Institute for Bioeconomy Science
Host farmer: Geoff Maw

Following a ryegrass crop, this trial was sown on 22 May 2025 into a paddock planted with cv. Reliance. A total of 295 kg N/ha was applied through ammonium sulphate and four urea applications, additional nitrogen was supplied via four liquid fertiliser applications. Crop management involved three fungicide treatments, one insecticide application, one pre-emergence and two post-emergence herbicide applications, and one PGR treatment. A total of 120 mm irrigation was applied in 6 passes. The trial was harvested on 23 February 2026.

FAIRLIE (Feed Wheat)

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

This dryland trial was sown on 10 April 2025 into a minimum tillage paddock following an oilseed rape crop resulting in low established plant counts. Background soil N measured 148 kg N/ha (0–30 cm). A total of 247 kg N/ha was applied through two DAP, one sulphate of ammonia, and three SustaiN® applications. During the growing season, the crop received two herbicide treatments, three fungicide applications and a PGR application. The trial was harvested on 7 February 2026.

FAIRTON (Feed Wheat)

Lismore shallow silt loam, Irrigated
Trial operator: Ashley Harrison,
PGG Wrightson Grain
Host farmer: Geoff Roberts

This irrigated trial was sown into a paddock of cv. Kinetic on 24 April 2025, following spinach. Background soil N was 44 kg/ha (0–60 cm). Applied N totalled 306 kg N/ha via one ammonium sulphate and three urea applications, additional nitrogen was applied in the form of liquid fertiliser. The trial received one pre-emergence and one post-emergence herbicide, two insecticides, four fungicides and two PGR applications. A total of 245 mm irrigation was applied in 13 passes. The trial was harvested on 2 February 2026.

GREENDALE (Milling Wheat)

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

This trial is not published in the booklet due to excessive disease damage.

HALCOMBE (Feed Wheat)

Marton clay loam, Dryland
Trial operator: Kevin Sinclair,
New Zealand Institute for Bioeconomy Science
Host farmer: James Abbiss

Following forage brassica, this dryland trial was established in a paddock sown in cv. Skybolt on 8 May 2025. Background soil N measured 36 kg N/ha (0–30 cm), with the trial receiving a further 152 kg N/ha, applied via one application of Ammo 30N and one application of SustaiN®, additional Nitrogen was supplied in the form of one application of liquid nitrogen. The trial received one herbicide, one insecticide and two fungicide applications. No PGR was applied. The trial suffered some minor lodging; however, it was successfully harvested on 20 January 2026.

METHVEN (Feed Wheat)

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

This trial was not harvested due to excessive disease damage.

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 13 May 2025, following radish. Background soil N was 60 kg/ha. The trial was harvested on 12 February 2026. Further management data has not been received.

wheat - trial site details

ORETI (Feed Wheat)

Crookstone silt loam, Dryland
Trial operator: Chetan Parab,
New Zealand Institute for Bioeconomy Science
Host farmer: Robbie Clark

This dryland feed wheat trial was drilled on 17 April 2025 following ryegrass in a paddock sown with cv. Reflection. Background soil N measured 21 kg/ha (0–60 cm). A total of 350 kg N/ha was applied through two applications of fertiliser. During the growing season, the crop received two herbicide treatments, two fungicide applications, and one PGR application. The trial was harvested on 19 February 2026.

ST ANDREWS (Feed Wheat)

Claremont silt loam, Dryland
Trial operator: Russell Kirk,
New Zealand Institute for Bioeconomy Science
Host farmer: Richard Porter

This dryland trial experienced rainfall events which affected emergence and establishment. The harvest results will not be used this season.

TEMUKA (Feed Wheat)

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

This irrigated trial was established on 15 April 2025 into a paddock sown in cv. SY Defiant, following a radish crop. Background soil N was 102 kg/ha. Applied N totalled 313 kg N/ha via three applications of fertiliser. The trial received one pre-emergence and two post-emergence herbicides, two insecticides, three fungicides and one PGR application. It was harvested on 24 February 2026.

WINCHESTER (Milling Wheat)

Rakaia stony loam, Irrigated
Trial operator: Russell Kirk,
New Zealand Institute for Bioeconomy Science
Host farmer: Roger Lasham

This trial was sown on 23 May 2025 into a paddock drilled in cv. Reliance, following onion. Applied N totalled 348 kg N/ha via one ammonium sulphate, three urea and one of N-Protect® application. The trial received one pre- and two post-emergence herbicides, four fungicides, two insecticides and two PGR applications. The trial received 75 mm irrigation in 4 passes. The trial was harvested on 10 February 2026.

notes

Autumn Sown FEED/BISCUIT Wheat Agronomic Comment 2025/2026 Season

CULTIVAR	End use	Years in CPT2 trials	Septoria tritici blotch	Stripe rust	Leaf rust		Powdery mildew	Fusarium head blight	Straw strength	Crop height	Maturity	Sprouting susceptibility
Aberdeen	Feed	5	(MRMS)*‡	R	MRR		R‡	**(MS)**	Stiff	Medium	Intermediate	Moderate-high‡
Firefly	Feed/Biscuit	4	(MR)*‡	R	**(MRR)**		R‡	**(MSS)**	Stiff	Short	Early	Moderate
Firelight	Feed	9	(MSS)*‡	MRR	(S)		MRMS‡	**(MSS)**	Moderate	Medium	Intermediate	Moderate‡
Graham	Feed/Biscuit and Bread	10	(MSS)*‡	MRR	(S)		MR‡	(MS)‡	Stiff	Medium	Early	Low
Ignite	Feed/Biscuit	11	MS‡	MR	(S)		(MS)‡	**(MSS)**	Stiff	Medium	Late	Moderate
Kerrin	Feed	7	(S*)‡	R	**(S)**		MRR‡	MS	Moderate-stiff	Medium	Intermediate	Moderate‡
Kinetic	Feed	4	**(MS*)**	R	(S)		R‡	**(S)**	Moderate	Medium	Early	Low-moderate‡
Skybolt	Feed	4	MR	R	MR*		(MRR)‡	(MRMS)	Stiff	Medium	Intermediate	Moderate‡
SY Defiant	Feed	4	MRR	R	MRR		R‡	(MRMS)	Stiff	Short	Early	Low-moderate‡
Voltron	Feed/Biscuit	9	MS	MRR	MS‡		MS‡	**(MSS)**	Moderate-stiff	Medium	Early-intermediate	**Low**
Whopper	Medium/Feed	7	(MSS)*‡	MRR‡	S		MRR‡	**(MS)**	Stiff	Medium	Late	**Low-moderate**
KFW2201	Feed	3	MRMS*	MSS‡	MSS‡		MS‡	MRMS	Stiff	Short-medium	Intermediate-late	Moderate
KFW2302	Feed/Biscuit	1	MRR	R	(MS)		(R)‡	MRMS	Moderate-stiff	Medium	Late	Low-moderate
SY121233	Feed	2	MS*	R	MSS‡		(R)‡	MR	Moderate-stiff	Medium-tall	Intermediate	**Moderate-high**
SY122464	Feed	1	(S*)	(R)	(MSS*)		(R)‡	(S)‡	Stiff	Short-medium	Intermediate	Moderate-high
SY122518	Feed	1	(MRMS*)	(R)	(MSS*)		(R)‡	(MRMS)	Stiff	Medium	Early-intermediate	Moderate-high

End-use has been provided by the breeder/agent and does not guarantee that a contract will be issued for that cultivar.

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

‡ Rating based on data from previous seasons, as disease pressure was low in 2025-26.

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).

Sprouting susceptibility score is an indication of susceptibility to preharvest sprouting when conditions are suitable. Data sourced from FAR-funded Sprouting Nurseries (assessments carried out by BSI).

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

Autumn Sown MILLING Wheat Agronomic Comment 2025/2026 Season

CULTIVAR	End use	Years in CPT2 trials	Septoria tritici blotch	Stripe rust	Leaf rust		Powdery mildew	Fusarium head blight	Straw strength	Crop height	Maturity	Sprouting susceptibility
Aston	Premium	2	MSS*‡	MS*‡	MSS		R‡	MSS	Moderate	Tall	Intermediate	Low-moderate
Catherine	Medium	9	S‡	MRR	S		MRMS‡	S‡	Moderate	Tall	Intermediate	**Low-moderate**
Conquest	Premium	21	MS‡	MS‡	S		MS‡	MSS‡	Moderate-stiff	Medium	Early-intermediate	Low
Discovery	Medium	13	MSS‡	MRMS‡	MR*		(MR)‡	MSS‡	Stiff	Tall	Intermediate	Low-moderate
Duchess	Premium	12	S‡	MR‡	MSS		MS‡	MSS‡	Stiff	Medium	Intermediate	Very low
Hanson	Gristing	12	S‡	**MS**	**(MS*)**		MS‡	S‡	Stiff	Medium-tall	Intermediate	Low-moderate
Kimberley (CRWT278)	Medium	1	MS‡	(MR)	MRMS		MRR‡	MS‡	Moderate	Medium	Early-intermediate	Moderate
Palladium (CK613)	Medium	1	(MS*)	(R)	(MSS*)		(R)‡	MS‡	Moderate-stiff	Medium	Intermediate	Moderate
Reliance	Premium	14	MS	MR	S		MS‡	S‡	Moderate-stiff	Short-medium	Early-intermediate	Low
SY Medea	Medium	4	MRMS	R	MSS‡		R‡	MRMS‡	Stiff	Medium	Early	**Low**
Viceroy	Medium	16	S	MR‡	S*		MS‡	S‡	Stiff	Medium-tall	Intermediate	Low
Whopper	Medium/Feed	6	(MSS)*‡	MRR‡	S		MRR‡	**(MS)**	Stiff	Medium	Late	**Low-moderate**
CRWT281	Premium	1	MR	R	MR		(MRMS)‡	MS	Moderate	Medium	Early-Intermediate	Very low

Grade has been provided by the breeder/agent and does not guarantee that a contract will be issued for that cultivar.

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

‡ Rating based on data from previous seasons, as disease pressure was low in 2025-26.

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).

Sprouting susceptibility score is an indication of susceptibility to preharvest sprouting when conditions are suitable. Data sourced from FAR-funded Sprouting Nurseries (assessments carried out by BSI).

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

Autumn Sown FEED/BISCUIT Wheat Cultivar Evaluation 2025/2026 Season - yield, t/ha - Canterbury

CULTIVAR	*Methven	*Chertsey	*Chertsey	Fairton		Temuka	*St Andrews	Fairlie	Cant mean yield	Cant 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	Chertsey shallow silt loam	Chertsey shallow silt loam	Lismore shallow silt loam		Waimakariri silt loam	Claremont silt loam	Claremont silt loam				
Previous crop				Spinach		Radish		Oilseed rape				
Sow date				24-Apr		15-Apr		10-Apr				
Harvest date				2-Feb		24-Feb		7-Feb				
Dryland/Irrigated				Irrigated		Irrigated		Dryland	Irrigated	Dryland		
Aberdeen				14.3		12.2		11.1	13.2	11.1	12.5	5
Firefly [B]				14.2		12.9		11.5	13.6	11.5	12.9	4
Firelight				14.7		12.4		**11.8**	13.5	**11.8**	**13.0**	9
Graham [B, BR]				14.3		12.7		11.3	13.5	11.3	12.8	10
Ignite [B]				13.8		12.2		10.9	13.0	10.9	12.3	11
Kerrin				13.6		12.2		11.1	12.9	11.1	12.3	7
Kinetic				14.4		11.2		11.8	12.8	11.8	12.4	4
Skybolt				14.9		12.7		11.5	13.8	11.5	**13.0**	4
SY Defiant				13.7		12.1		10.8	12.9	10.8	12.2	4
Voltron [B]				14.2		12.3		**11.8**	13.3	**11.8**	12.8	9
Whopper [BR]				**15.3**		12.3		11.6	13.8	11.6	**13.1**	7
KFW2201				14.3		12.7		**12.1**	13.5	**12.1**	**13.1**	3
KFW2302 [B]				13.9		12.1		11.4	13.0	11.4	12.4	1
SY121233				14.7		**13.6**		**11.9**	14.1	**11.9**	**13.4**	2
SY122464				14.4		**13.3**		**12.0**	13.8	**12.0**	**13.2**	1
SY122518				14.8		**13.7**		**12.1**	14.3	**12.1**	**13.6**	1
Site mean yield				14.3		12.5		11.5	13.4	11.5	12.8	
P-value				<0.001		<0.001		<0.001	0.071	<0.001	0.001	
LSD (p=0.05)				0.3		0.8		0.4	NS	0.4	0.6	
CV (%)				1.6		4.8		2.3	3.3	2.3	2.9	

Target plant population 150 plants/m^2, please note Fairlie had a low plant population (average of 93 plants/m^2).

*Abandoned: Methven and Chertsey - Excessive disease, St Andrews - Uneven/poor establishment.

[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.

NS, LSD not calculated as P value not significant.

Autumn Sown FEED/BISCUIT Wheat

Cultivar Evaluation 2025/2026 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	Crookstone silt loam	Crookstone silt loam		Marton clay loam	
Previous crop	Tulip	Ryegrass		Forage brassica	
Sow date	3-Apr	17-Apr		8-May	
Harvest date	4-Mar	19-Feb		20-Jan	
Dryland/Irrigated	Dryland	Dryland		Dryland	
Aberdeen	13.4	11.6	12.5	10.3	5
Firefly [B]	13.4	11.1	12.2	10.5	4
Firelight	13.6	11.3	12.4	10.5	9
Graham [B, BR]	13.5	11.6	12.5	10.1	10
Ignite [B]	12.3	11.2	11.7	10.1	11
Kerrin	13.2	11.6	12.4	N/A	7
Kinetic	13.5	11.1	12.3	11.4	4
Skybolt	12.9	11.7	12.3	11.5	4
SY Defiant	13.5	10.7	12.1	10.7	4
Voltron [B]	14.2	11.4	12.8	11.1	9
Whopper [BR]	13.5	11.5	12.5	11.0	7
KFW2201	**15.1**	**12.5**	**13.8**	10.8	3
KFW2302 [B]	12.7	11.1	11.9	11.3	1
SY121233	14.3	12.0	**13.2**	**12.1**	2
SY122464	13.6	11.4	12.5	10.6	1
SY122518	14.2	11.8	13.0	**11.9**	1
Site mean yield	13.6	11.5	12.5	10.8	
P-value	<0.001	<0.001	0.006	<0.001	
LSD (p=0.05)	0.5	0.5	0.8	0.5	
CV (%)	2.4	2.8	2.9	3.3	

Target plant population 150 plants/m², please note Fairlie had a low plant population (average of 93 plants/m²). [B] Biscuit wheat, [BR] Bread wheat (treated as a feed wheat). Bold text indicates the cultivar was amongst the highest yielding group of cultivars. N/A: This cultivar had a plant population of less than 20% of the average plants per m² and was therefore excluded from the publication by the breeder in accordance with CPT criteria.

Autumn Sown MILLING Wheat Cultivar Evaluation 2025/2026 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			Templeton silt loam	Templeton silt loam	Lismore soil		
Previous crop			Potatoes	White clover	Radish		
Sow date			11-May	10-May	6-May		
Harvest date			16-Feb	31-Jan	26-Feb		
Dryland/Irrigated			Irrigated	Irrigated	Irrigated	Irrigated	
Hanson	Gris		13.5	11.9	11.2	12.2	12
Catherine	Med		13.4	**13.9**	**11.6**	**13.0**	9
Discovery	Med		14.8	13.9	11.5	**13.4**	13
Kimberley (CRWT278)	Med		**15.0**	**14.4**	11.2	**13.5**	1
Palladium (CK613)	Med		13.9	13.3	**11.8**	**13.0**	1
SY Medea	Med		14.2	13.6	11.4	**13.1**	4
Viceroy	Med		13.5	12.6	10.4	12.1	16
Whopper	Med		13.1	13.7	**12.7**	**13.1**	6
Aston	Prem		**15.4**	**14.5**	11.5	**13.8**	2
Conquest	Prem		12.7	11.9	8.3	11.0	21
Duchess	Prem		13.2	12.9	9.1	11.7	12
Reliance	Prem		12.8	11.5	8.6	11.0	14
CRWT281	Prem		12.7	12.9	9.8	11.8	1
Site mean yield			13.7	13.1	10.7	12.5	
P-Value			<0.001	<0.001	<0.001	<0.001	
LSD (p=0.05)			0.6	0.6	1.1	1.1	
CV (%)			2.9	3.2	7.3	5.3	

Target plant population 175 plants/m². *Abandoned: Greendale - Excessive disease. Gris - Gristing, Med - Medium, Prem - Premium.
Grade has been provided by the breeder/agent and does not guarantee a contract will be issued for that cultivar.
Bold text indicates the cultivar was amongst the highest yielding group of cultivars.

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	44	70	10.4	0.3	-
Firefly B	43	71	10.7	0.1	267
Firelight	41	70	10.2	0.5	-
Graham B, BR	49	76	10.3	0.4	334
Ignite B	41	72	10.5	0.3	381
Kerrin	N/A	N/A	N/A	N/A	-
Kinetic	47	76	9.5	0.3	-
Skybolt	47	74	9.8	0.1	-
SY Defiant	45	77	9.6	0.4	-
Voltron B	41	75	10.0	0.4	364
Whopper BR	43	75	9.6	0.5	380
KFW2201	42	72	9.4	0.5	-
KFW2302 B	42	77	10.1	0.3	321
SY121233	47	75	9.6	0.5	-
SY122464	42	73	9.1	0.5	-
SY122518	53	74	10.8	0.2	-
Site mean yield	44	74	9.9	0.4	334
P-value	-	-	-	-	-
LSD (p=0.05)	-	-	-	-	-

N/A: This cultivar had a plant population of less than 20% of the average plants per m² and was therefore excluded from the publication by the breeder in accordance with CPT criteria.

Canterbury FEED/BISCUIT Wheat Trials

CULTIVAR	T.G.W. (g)	Test Weight (kg/hl)	Protein (%) (N% x 5.7)	Screenings (%)	Falling No. (seconds)+
Aberdeen	49	72	10.1	0.4	-
Firefly B	54	73	10.3	0.4	178
Firelight	50	71	9.6	0.4	-
Graham B, BR	51	74	9.8	0.4	250
Ignite B	48	74	10.4	0.4	249
Kerrin	48	74	9.4	0.8	-
Kinetic	52	76	9.9	0.4	-
Skybolt	52	74	9.9	0.4	-
SY Defiant	50	74	10.2	0.5	-
Voltron B	48	75	9.8	0.4	250
Whopper BR	49	75	10.1	0.3	307
KFW2201	51	74	9.7	0.6	
KFW2302 B	48	78	10.2	0.5	249
SY121233	50	75	10.1	0.5	-
SY122464	49	73	9.5	0.7	-
SY122518	55	74	10.4	0.3	-
Site mean yield	50	74	10.0	0.5	240
P-value	0.002	<0.001	0.006	0.016	0.001
LSD (p=0.05)	3	2	0.5	0.3	42

Averaged over three 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	48	73	11.5	0.8	245
Catherine	Med	53	73	12.4	0.3	121
Discovery	Med	56	75	11.7	0.2	233
Kimberley (CRWT278)	Med	56	74	11.7	0.2	128
Palladium (CK613)	Med	51	73	10.9	0.4	240
SY Medea	Med	53	74	11.8	0.3	201
Viceroy	Med	47	80	12.5	0.4	283
Whopper	Med	47	74	10.5	0.4	310
Aston	Prem	46	75	12.0	0.3	265
Conquest	Prem	45	76	13.2	0.2	198
Duchess	Prem	46	76	11.9	1.0	285
Reliance	Prem	51	76	13.0	0.3	259
CRWT281	Prem	50	76	13.3	0.2	333
Site mean yield		50	75	12.0	0.4	238
P-Value		<0.001	<0.001	<0.001	<0.001	<0.001
LSD (p=0.05)		3	2	0.6	0.3	67
CV (%)		2	1	1.7	23.9	10

Averaged over three trials. Gris - Gristing, Med - Medium, Prem - Premium. Grade has been provided by the breeder/agent and does not guarantee a contract will be issued for that cultivar.

Southland FEED/BISCUIT Wheat Trials

CULTIVAR	T.G.W. (g)	Test Weight (kg/hl)	Protein (%) (N% x 5.7)	Screenings (%)	Falling No. (seconds)+
Aberdeen	58	75	9.4	0.2	-
Firefly B	61	74	9.4	0.2	173
Firelight	57	74	8.2	0.3	-
Graham B, BR	61	77	8.6	0.1	254
Ignite B	57	77	9.5	0.1	306
Kerrin	57	77	8.2	0.5	-
Kinetic	59	77	8.3	0.2	-
Skybolt	56	76	8.7	0.3	-
SY Defiant	61	78	8.5	0.2	-
Voltron B	56	78	9.1	0.2	309
Whopper BR	57	77	8.6	0.1	342
KFW2201	59	77	8.4	0.2	-
KFW2302 B	55	79	9.5	0.2	287
SY121233	57	77	8.6	0.4	-
SY122464	56	75	8.1	0.4	-
SY122518	62	76	9.2	0.2	-
Site mean yield	58	77	8.7	0.2	274
P-value	0.002	<0.001	0.003	0.005	0.001
LSD (p=0.05)	3	1	0.7	0.2	46

Averaged over two 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.

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

CULTIVAR	Methven	Chertsey	Chertsey	Fairton	Temuka	St Andrews	Fairlie		Canterbury relative yield	Canterbury 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	Irrigated		Dryland	Dryland		Dryland	
No. of trials	3	3	3	1	4	2	3		8	11	19	4	4	8	4	
Aberdeen	96	99	99	99	94	97	97		97	97	97	102	100	101	97	5
Firefly [B]	96	98	99	99	**102**	**101**	95		98	99	98	101	99	100	93	4
Firelight	97	**103**	99	102	99	94	102		99	99	99	99	**102**	100	98	9
Graham [B, BR]	96	98	98	100	101	100	98		99	98	98	101	99	100	96	10
Ignite [B]	94	95	95	96	92	90	90		91	94	93	91	94	93	91	11
Kerrin	97	98	98	95	89	94	94		95	94	94	91	94	92	92	7
Kinetic	**106**	99	**102**	100	99	**103**	104		**102**	**101**	102	100	101	100	**104**	4
Skybolt	**107**	**101**	**102**	104	**103**	**101**	102		**101**	**104**	**103**	98	100	99	**104**	4
SY Defiant	103	97	99	95	**103**	100	98		98	99	99	103	97	100	98	4
Voltron [B]	101	**105**	**101**	99	96	**102**	101		**102**	99	100	101	101	101	100	9
Whopper [BR]	97	**101**	**101**	107	100	**102**	102		**101**	101	101	100	**102**	101	102	7
KFW2201*	**109**	**103**	**104**	100	**105**	**108**	104		**105**	**104**	**104**	**109**	**107**	**108**	102	3
KFW2302 [B]	-	-	-	(97)	(96)	-	(98)		(98)	(97)	(98)	(93)	(97)	(95)	**(104)**	1
SY121233*	100	**104**	**102**	103	**105**	**108**	105		**106**	**102**	**103**	**107**	**105**	**106**	**111**	2
SY122464	-	-	-	(100)	**(106)**	-	(104)		**(104)**	**(104)**	**(104)**	(101)	(99)	(100)	(98)	1
SY122518	-	-	-	(103)	**(109)**	-	(105)		**(105)**	**(107)**	**(107)**	**(105)**	**(103)**	**(104)**	**(110)**	1
Site mean yield (t/ha)	13.0	8.6	12.5	14.3	12.7	12.4	11.0		10.6	13.1	12.0	12.1	10.9	11.5	10.4	
P-value	<0.001	0.01	0.02	-	<0.001	0.002	0.182		0.002	<0.001	<0.001	<0.001	0.038	<0.001	0.002	
LSD (estab. cv) (p=0.05)	5	5	4	-	8	8	NS		7	6	4	5	6	5	7	
LSD (new vs estab.) (p=0.05)	7	7	6	-	13	10	NS		9	8	6	8	9	7	11	

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

- Cultivar has not been in trials at this location.

* KFW2201 has only been in CPT for 3 years and SY121233 for 2 years.

No trial results from Methven and Chertsey (irrigated and dryland) 2025-26 and Fairlie 2023-24 (data are 3-year means). St Andrews, no trial results 2022-23 and 2025-26 (data are 2-year mean).

Fairton, new location (data is one year means for the 2025-26 season).

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.

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		3	3	4	4	14	
Hanson	Gris	97	97	94	97	96	12
Catherine	Med	**101**	99	103	**107**	102	9
Discovery	Med	**110**	104	104	**104**	**105**	13
Kimberley (CRWT278)	Med	-	**(110)**	**(110)**	**(105)**	**(108)**	1
Palladium (CK613)	Med	-	(102)	(101)	**(110)**	**(104)**	1
SY Medea	Med	**102**	**106**	**105**	**106**	**105**	4
Viceroy	Med	96	97	94	91	94	16
Whopper	Med	98	101	**106**	**111**	**104**	6
Aston*	Prem	**108**	**112**	**107**	**104**	**108**	2
Conquest	Prem	96	91	90	90	92	21
Duchess	Prem	93	96	97	91	94	12
Reliance	Prem	100	93	91	92	94	14
CRWT281	Prem	-	(92)	(98)	(92)	(94)	1
Site mean yield (t/ha)		11.25	12.46	12.34	11.18	11.81	
P-value		0.016	<0.001	<0.001	<0.001	<0.001	
LSD (estab. cv.) (p=0.05)		9	7	6	8	5	
LSD (new vs estab.) (p=0.05)		13	10	9	13	8	

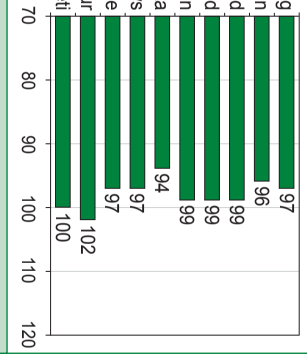
Gris - Gristing, Med - Medium, Prem - Premium. Grade has been provided by the breeder/agent and does not guarantee that a contract will be issued for that cultivar. No trial in Methven in 2023-24, and Greendale in 2025-26 (data is a 3-year mean).
- Cultivar has not been in trials at this location. *Aston has only been in CPT for 2 years.
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.

ABERDEEN PVR

YEAR 5

Below average to average yielding feed wheat cultivar. Has some resistance to the most common diseases, but is moderately susceptible to FHB. A medium height stiff-strawed cultivar with 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)	97
DISEASE RESISTANCE	
Septoria tritici blotch	Intermediate resistance**
Stripe rust	Resistant
Leaf rust	Mostly resistant
Powdery mildew	Resistant
Fusarium head blight	Moderately susceptible
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	51
Test weight (kg/hl)	68	70	70
Protein (%) (N% x 5.7)	10.9	10.4	9.7
Falling number (sec)	-	-	-
Screenings (%)	0.7	0.8	0.9

END USE	
	Feed

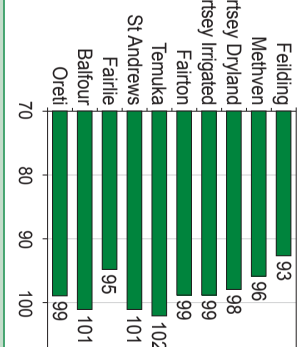
BACKGROUND	
Breeder	Sejet
Licensee	New Zealand Institute for Bioeconomy Science
Agent	Luisetti Seeds

FIREFLY

YEAR 4

A below average to average yielding feed and biscuit wheat cultivar. Has some resistance to most of the common diseases, but is mostly susceptible to FHB. 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)	98
Irrigated sites (4-year)	99
DISEASE RESISTANCE	
Septoria tritici blotch	Moderately resistant**
Stripe rust	Resistant
Leaf rust	Mostly resistant
Powdery mildew	Resistant
Fusarium head blight	Mostly susceptible
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	52	54
Test weight (kg/hl)	67	72	72
Protein (%) (N% x 5.7)	10.7	10.4	9.6
Falling number (sec)	277	222	224
Screenings (%)	0.8	0.6	0.5

END USE	
	Feed/Biscuit

BACKGROUND	
Breeder	KWS, UK
Agent	Carrfields Grain & Seed

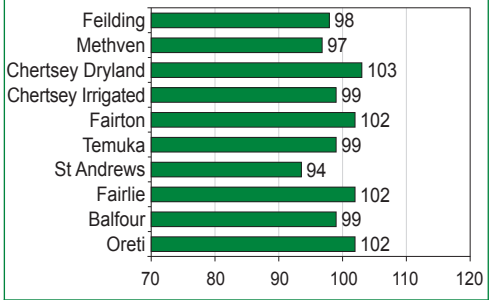
Yields are relative to other feed/biscuit wheats only. * 1-year mean for Fairton (new site), 2-year mean for St Andrews (no data 2022-23 and 2025-26), 3-year mean for Methven, Chertsey dryland and irrigated (no data 2025-26) and Fairlie (no data 2023-24).
** Resistance is affected by pathotypes present (score is an average).

FIRELIGHT PVR

YEAR 9

Firelight is a feed wheat cultivar producing a range of yields from below average to above average. Shows some resistance to stripe rust and powdery mildew, but shows a degree of susceptibility to the other common diseases. A medium height cultivar with moderate straw strength and intermediate maturity.

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	Mostly susceptible**
Stripe rust	Mostly resistant
Leaf rust	Susceptible
Powdery mildew	Intermediate resistance
Fusarium head blight	Mostly 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	47	49
Test weight (kg/hl)	69	71	71
Protein (%) (N% x 5.7)	10.2	9.9	9.1
Falling number (sec)	-	-	-
Screenings (%)	1.0	1.1	1.0

END USE	
	Feed

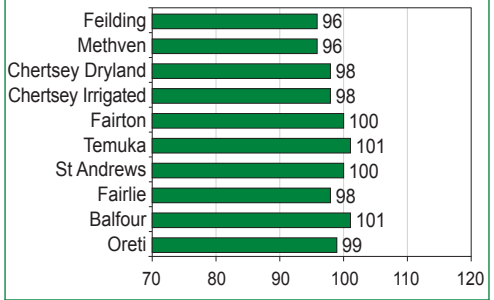
BACKGROUND	
Breeder	Limagrain Europe S.A.
Agent	PGG Wrightson Grain

GRAHAM PVR

YEAR 10

Below average to 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)	99
Irrigated sites (4-year)	98

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)	46	49	52
Test weight (kg/hl)	72	74	74
Protein (%) (N% x 5.7)	10.8	9.9	9.0
Falling number (sec)	329	305	299
Screenings (%)	1.4	0.6	0.8

END USE	
	Feed/Biscuit/Bread

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

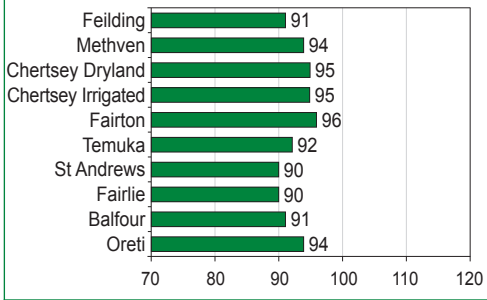
Yields are relative to other feed/biscuit wheats only. * 1-year mean for Fairton (new site), 2-year mean for St Andrews (no data 2022-23 and 2025-26), 3-year mean for Methven, Chertsey dryland and irrigated (no data 2025-26) and Fairlie (no data 2023-24).
** Resistance is affected by pathotypes present (score is an average).

IGNITE PVR

YEAR 11

Below average yielding feed and biscuit wheat cultivar. Has some resistance to stripe rust but shows 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)	91
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	Mostly susceptible

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	46	49
Test weight (kg/hl)	70	73	74
Protein (%) (N% x 5.7)	10.9	10.4	9.8
Falling number (sec)	364	312	328
Screenings (%)	1.1	0.7	0.6

END USE	
	Feed/Biscuit

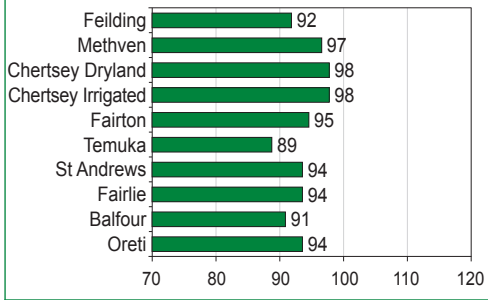
BACKGROUND	
Breeder	Limagrain Europe S.A.
Agent	PGG Wrightson Grain

KERRIN

YEAR 7

Below average yielding feed wheat cultivar. Has some resistance to stripe rust and powdery mildew but some susceptibility to other common wheat diseases. 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)	95
Irrigated sites (4-year)	94

DISEASE RESISTANCE	
Septoria tritici blotch	Susceptible**
Stripe rust	Resistant
Leaf rust	Susceptible
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	46	49
Test weight (kg/hl)	70	73	73
Protein (%) (N% x 5.7)	9.6	9.5	8.8
Falling number (sec)	-	-	-
Screenings (%)	1.6	1.6	1.6

END USE	
	Feed

BACKGROUND	
Breeder	KWS, UK
Agent	Carrfields Grain & Seed

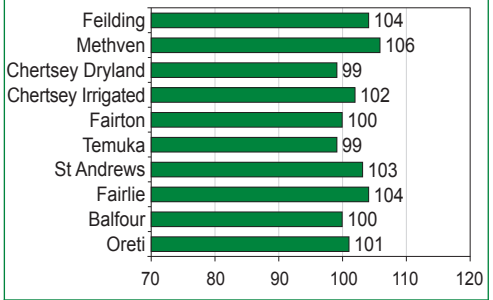
Yields are relative to other feed/biscuit wheats only. * 1-year mean for Fairton (new site), 2-year mean for St Andrews (no data 2022-23 and 2025-26), 3-year mean for Methven, Chertsey dryland and irrigated (no data 2025-26) and Fairlie (no data 2023-24).
** Resistance is affected by pathotypes present (score is an average).

KINETIC

YEAR 4

An average to above average yielding feed wheat cultivar. Kinetic is resistant to stripe rust and powdery mildew, but has susceptibility to other common wheat diseases. A medium height, early maturing cultivar with moderate straw strength.

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



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (4-year)	102
Irrigated sites (4-year)	101

DISEASE RESISTANCE	
Septoria tritici blotch	Moderately susceptible**
Stripe rust	Resistant
Leaf rust	Susceptible
Powdery mildew	Resistant
Fusarium head blight	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	53
Test weight (kg/hl)	72	75	75
Protein (%) (N% x 5.7)	9.6	9.7	8.8
Falling number (sec)	-	-	-
Screenings (%)	0.7	0.8	1.3

END USE	
	Feed

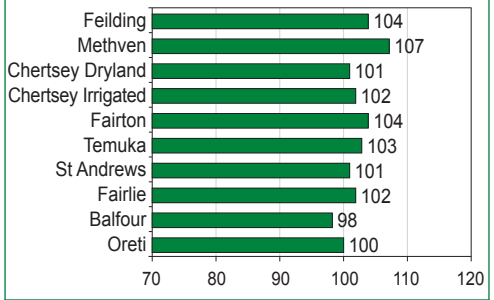
BACKGROUND	
Breeder	KWS, UK
Agent	Carrfields Grain & Seed

SKYBOLT PVR

YEAR 4

Skybolt is a feed wheat cultivar, producing average to above average yields. Good 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)	101
Irrigated sites (4-year)	104

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)	44	50	51
Test weight (kg/hl)	71	75	74
Protein (%) (N% x 5.7)	9.9	9.9	9.1
Falling number (sec)	-	-	-
Screenings (%)	0.8	0.6	1.0

END USE	
	Feed

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

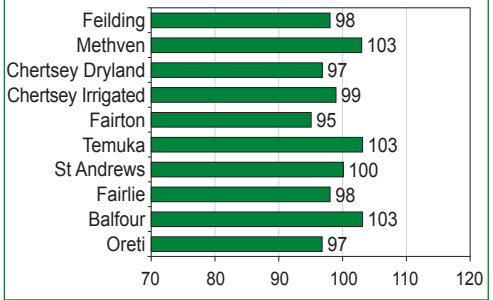
Yields are relative to other feed/biscuit wheats only. * 1-year mean for Fairton (new site), 2-year mean for St Andrews (no data 2022-23 and 2025-26), 3-year mean for Methven, Chertsey dryland and irrigated (no data 2025-26) and Fairlie (no data 2023-24).
** Resistance is affected by pathotypes present (score is an average).

SY DEFIANT PVR

YEAR 4

Below average to above average yielding feed wheat cultivar. 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)	98
Irrigated sites (4-year)	99

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)	44	50	53
Test weight (kg/hl)	73	76	76
Protein (%) (N% x 5.7)	9.9	9.8	8.8
Falling number (sec)	-	-	-
Screenings (%)	1.1	0.9	1.6

END USE	
	Feed

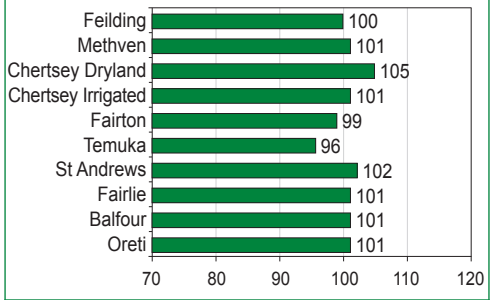
BACKGROUND	
Breeder	Syngenta
Licensee	Cropmark Seeds
Agent	Advance Agriculture, Cates

VOLTRON PVR

YEAR 9

Voltron is a feed and biscuit wheat producing average to above average yields. Has some resistance to stripe rust but shows varying levels of susceptibility to most other common wheat diseases. A medium height cultivar with low 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)	99

DISEASE RESISTANCE	
Septoria tritici blotch	Moderately susceptible
Stripe rust	Mostly resistant
Leaf rust	Moderately 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)	Sth Nth Is	Canty	Sthld
TGW (g)	40	45	48
Test weight (kg/hl)	71	75	75
Protein (%) (N% x 5.7)	10.4	10.0	9.3
Falling number (sec)	327	319	310
Screenings (%)	1.4	0.8	0.9

END USE	
	Feed/Biscuit

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

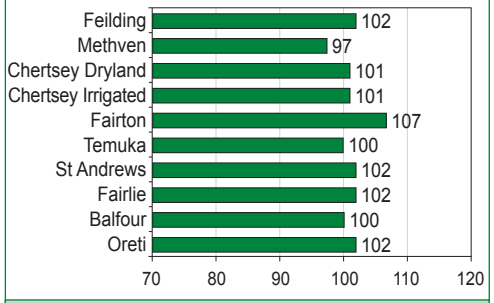
Yields are relative to other feed/biscuit wheats only. * 1-year mean for Fairton (new site), 2-year mean for St Andrews (no data 2022-23 and 2025-26), 3-year mean for Methven, Chertsey dryland and irrigated (no data 2025-26) and Fairlie (no data 2023-24).

WHOPPER PVR

YEAR 7

An average to above average yielding feed and milling variety. Has resistance to stripe rust and powdery mildew, but susceptibility to other common wheat diseases. A medium height, stiff-strawed cultivar with late maturity, a low to moderate sprouting risk and a good falling number.

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



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

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

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

GRAIN QUALITY (4-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	45	47	52
Test weight (kg/hl)	74	75	76
Protein (%) (N% x 5.7)	10.2	10.1	9.2
Falling number (sec)	374	344	365
Screenings (%)	0.6	0.6	0.6

END USE	
	Feed/Milling

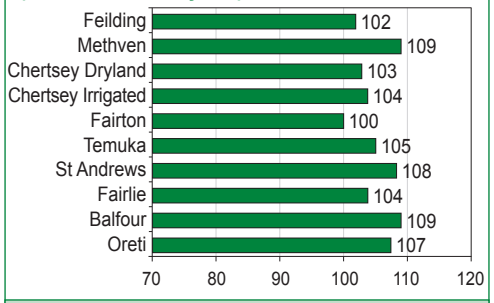
BACKGROUND	
Breeder	Sejet
Licensee	New Zealand Institute for Bioeconomy Science
Agent	Luisetti Seeds

KFW2201

YEAR 3

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

RELATIVE YIELDS – 3-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (3-year)	105
Irrigated sites (3-year)	104

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	Moderate

GRAIN QUALITY (3-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	42	49	53
Test weight (kg/hl)	70	74	73
Protein (%) (N% x 5.7)	9.6	9.7	9.0
Falling number (sec)	-	-	-
Screenings (%)	1.0	0.8	1.1

END USE	
	Feed

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

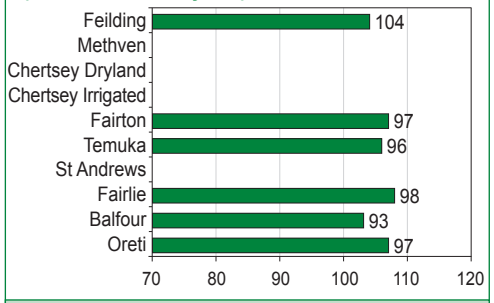
Yields are relative to other feed/biscuit wheats only. * 1-year mean for Fairton (new site). 2-year mean for St Andrews (no data 2022-23 and 2025-26). Methven, Chertsey dryland and irrigated (no data 2025-26) and Fairlie (no data 2023-24) are 3-year mean for Whopper and 2-year mean for KFW2201 (not in CPT in 2022-23). ** Resistance is affected by pathotypes present (score is an average).

KFW2302

YEAR 1

Below average yielding feed and biscuit wheat cultivar with the exception of Feilding where it showed above averageyields. Has a degree of resistance to most common wheat diseases, but is moderately susceptible to leaf rust. A late maturing, medium height cultivar with a moderate to stiff straw and low to moderate sprouting risk.

RELATIVE YIELDS – 1-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (1-year)	98
Irrigated sites (1-year)	97

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

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

GRAIN QUALITY (1-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	41	47	48
Test weight (kg/hl)	74	78	77
Protein (%) (N% x 5.7)	10.4	10.3	9.9
Falling number (sec)	312	304	314
Screenings (%)	0.8	0.9	1.0

END USE	
	Feed/Biscuit

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

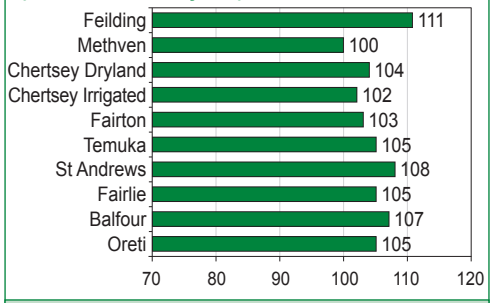
Yields are relative to other feed/biscuit wheats only. *First year in CPT2, so 1-year mean for all sites except Methven, Chertsey and St Andrews (no data).

SY121233

YEAR 2

Above average to high yielding feed wheat cultivar. Has some resistance to stripe rust, powdery mildew and FHB, but shows a degree of susceptibility to STB and leaf rust. A medium to tall, moderate to stiff-strawed cultivar with intermediate maturity.

RELATIVE YIELDS – 2-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (2-year)	106
Irrigated sites (2-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-tall
Maturity	Intermediate
Sprouting risk	Moderate to high

GRAIN QUALITY (2-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	46	49	51
Test weight (kg/hl)	73	74	75
Protein (%) (N% x 5.7)	9.9	9.9	9.0
Falling number (sec)	-	-	-
Screenings (%)	0.8	1.0	1.7

END USE	
	Feed

BACKGROUND	
Breeder	Syngenta
Licensee	Cropmark
Agent	Not assigned yet

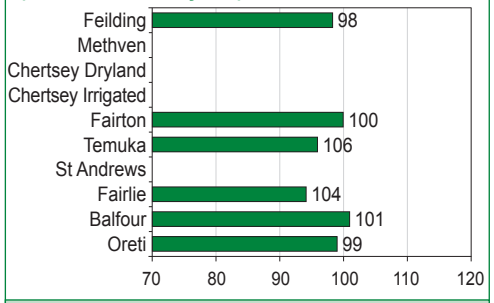
Yields are relative to other feed/biscuit wheats only. * Second year in CPT2, so 2-year means; 1-year mean for Methven, Chertsey Dryland and Irrigated, St Andrews (no data 2025-26) and Fairton (new site). ** Resistance is affected by pathotypes present (score is an average).

SY122464

YEAR 1

Below average to high yielding feed cultivar, depending on location. Resistant to stripe rust and powdery mildew, but shows a degree of susceptibility to other common wheat diseases. A short to medium, stiff-strawed cultivar with intermediate maturity.

RELATIVE YIELDS – 1-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (1-year)	104
Irrigated sites (1-year)	104

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

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Short-medium
Maturity	Intermediate
Sprouting risk	Moderate to high

GRAIN QUALITY (1-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	41	47	48
Test weight (kg/hl)	71	73	73
Protein (%) (N% x 5.7)	9.4	9.6	8.6
Falling number (sec)	-		-
Screenings (%)	1.1	1.1	1.2

END USE	
	Feed

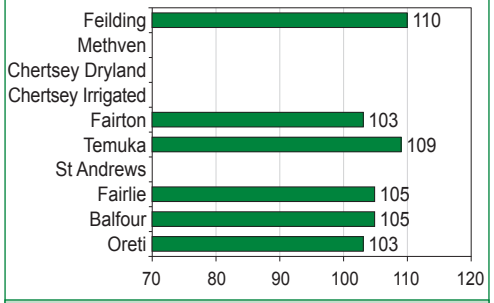
BACKGROUND	
Breeder	Syngenta
Licensee	Cropmark
Agent	Not assigned yet

SY122518

YEAR 1

Above average to high yielding feed cultivar. Shows varying degrees of resistance to most common wheat diseases, but is mostly susceptible to leaf rust. A medium height, stiff-strawed cultivar with intermediate maturity.

RELATIVE YIELDS – 1-year* adjusted mean (% of site mean yield)



IRRIGATION RESPONSE (Canterbury rel yield)	
Dryland sites (1-year)	105
Irrigated sites (1-year)	107

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	Intermediate
Sprouting risk	Moderate to high

GRAIN QUALITY (1-year means)	Sth Nth Is	Canty	Sthld
TGW (g)	53	53	55
Test weight (kg/hl)	71	74	73
Protein (%) (N% x 5.7)	11.1	10.4	9.7
Falling number (sec)	-	-	-
Screenings (%)	0.8	0.7	1.0

END USE	
	Feed

BACKGROUND	
Breeder	Syngenta
Licensee	Cropmark
Agent	Not assigned yet

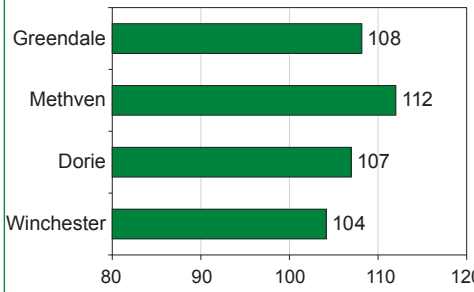
Yields are relative to other feed/biscuit wheats only. *First year in CPT2, so 1-year mean for all sites except Methven, Chertsey and St Andrews (no data). ** Resistance is affected by pathotypes present (score is an average).

ASTON[PVR]

YEAR 2

A premium milling cultivar with high yields relative to other premium cultivars in CPT. Has a good falling number. Susceptibility to most diseases but resistant to powdery mildew. A tall cultivar with moderate straw strength and low to moderate sprouting risk.

RELATIVE YIELDS – 2-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 (2-year means)	Canterbury
TGW (g)	43
Test weight (kg/hl)	77
Protein (%) (N% x 5.7)	12.5
Falling number (sec)	375
Screenings (%)	0.8

END USE	
	Premium grade milling

BACKGROUND	
Breeder	PGG Wrightson Grain
Agent	PGG Wrightson Grain

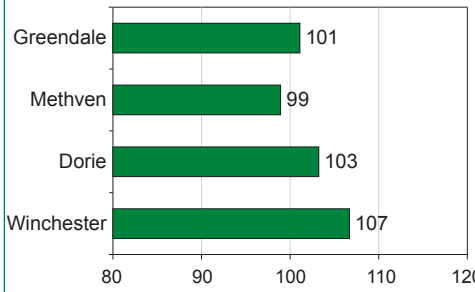
Yields are relative to other milling wheats only. * second year in CPT2, so 2-year means. ** Resistance is affected by pathotypes present (score is an average).

CATHERINE[PVR]

YEAR 9

Average to high yielding medium grade milling wheat with lower falling number. Susceptible to leaf rust, STB and FHB but has varying degrees of resistance to other diseases. 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	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-moderate

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	50
Test weight (kg/hl)	76
Protein (%) (N% x 5.7)	12.2
Falling number (sec)	269
Screenings (%)	0.7

END USE	
	Medium grade milling

BACKGROUND	
Breeder	New Zealand Institute for Bioeconomy Science
Agent	Luisetti Seeds

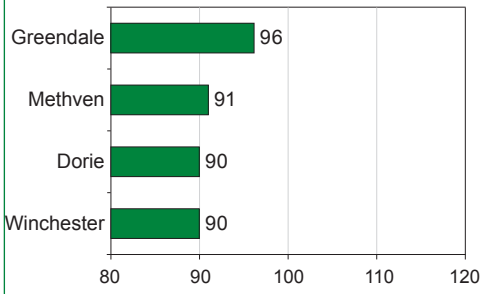
Yields are relative to other milling wheats only. * 3-year mean for Methven (no data 2023-24).

CONQUEST PVR

YEAR 21

A premium milling cultivar with average yields compared to the other premium cultivars. High protein content and falling number. Has a degree of susceptibility to all common diseases, especially leaf rust. Medium height cultivar 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)	378
Screenings (%)	0.7

END USE	Premium milling

BACKGROUND	
Breeder	New Zealand Institute for Bioeconomy Science
Agent	Luisetti Seeds

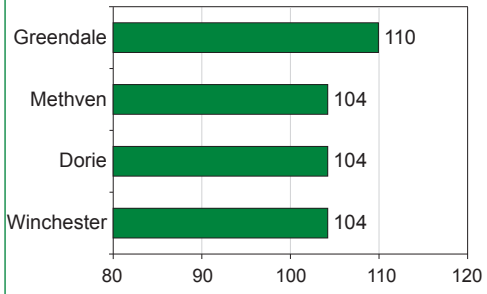
Yields are relative to other milling wheats only. * 3-year mean for Methven (no data 2023-24).

DISCOVERY PVR

YEAR 13

An above average to high yielding medium grade milling wheat with good grain weights. 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)	349
Screenings (%)	0.5

END USE	Medium grade milling

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

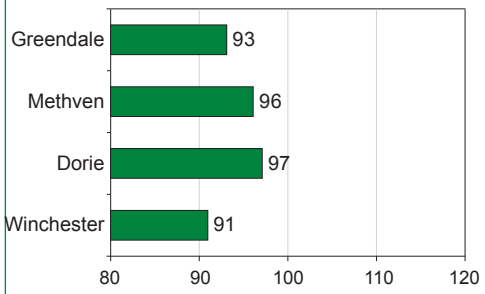
Yields are relative to other milling wheats only. * 3-year mean for Methven (no data 2023-24). ** Resistance is affected by pathotypes present (score is an average).

DUCHESS PVR

YEAR 12

A premium milling cultivar with average yields compared to the other premium varieties. Cv. Duchess shows 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)	12.5
Falling number (sec)	352
Screenings (%)	1.8

END USE	Premium milling

BACKGROUND	
Breeder	New Zealand Institute for Bioeconomy Science
Agent	Luisetti Seeds

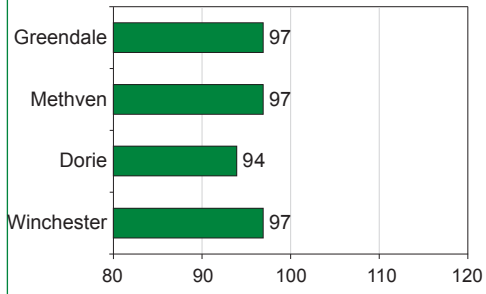
Yields are relative to other milling wheats only. * 3-year mean for Methven (no data 2023-24).

HANSON PVR

YEAR 12

A gristing wheat cultivar with below average yields. Lower grain weight with good falling number. Has varying levels of susceptibility to the common wheat 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 susceptible
Leaf rust	Moderately susceptible**
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)	11.8
Falling number (sec)	357
Screenings (%)	1.4

END USE	Gristing

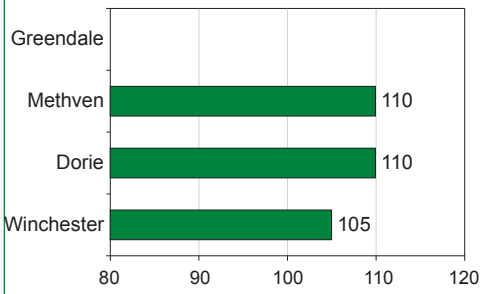
BACKGROUND	
Breeder	New Zealand Institute for Bioeconomy Science
Agent	Luisetti Seeds

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

KIMBERLEY (CRWT278) Provisional PVR — YEAR 1

Mostly high yielding medium grade cultivar with excellent performance at most sites. Shows resistance to stripe rust, leaf rust and powdery mildew but is moderately susceptibility to STB and FHB. An early to intermediate maturing, medium height cultivar with moderate straw strength.

RELATIVE YIELDS – 1-year* adjusted mean (% of site mean yield)



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

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

GRAIN QUALITY (1-year means)	Canterbury
TGW (g)	53
Test weight (kg/hl)	76
Protein (%) (N% x 5.7)	12.0
Falling number (sec)	239**
Screenings (%)	0.7

END USE	Medium grade milling

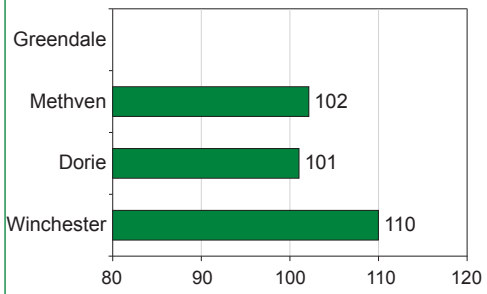
BACKGROUND	
Breeder	New Zealand Institute for Bioeconomy Science
Agent	Luisetti Seeds

Yields are relative to other milling wheats only. *First year in CPT, so 1-year means, apart from Greendale (no data).
** Falling number based on 1 year, when including CPT1 data falling number is 268 (4-year mean).

PALLADIUM (CK613) — YEAR 1

Variable yielding cultivar depending on the site. Resistant to stripe rust and powdery mildew, but shows varying levels of susceptibility to other common wheat diseases. A moderate to stiff-strawed cultivar with intermediate maturity and moderate sprouting risk.

RELATIVE YIELDS – 1-year* adjusted mean (% of site mean yield)



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

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

GRAIN QUALITY (1-year means)	Canterbury
TGW (g)	48
Test weight (kg/hl)	75
Protein (%) (N% x 5.7)	11.2
Falling number (sec)	350**
Screenings (%)	0.8

END USE	Medium grade milling

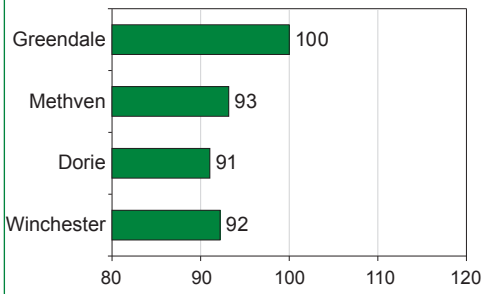
BACKGROUND	
Breeder	KWS, UK
Licensee	Carrfields Grain & Seed
Agent	Carrfields Grain & Seed

Yields are relative to other milling wheats only. *First year in CPT, so 1-year means, apart from Greendale (no data). ** Resistance is affected by pathotypes present (score is an average). ** Falling number based on 1 year, when including CPT1 data falling number is 335 (3-year mean).

RELIANCE PVR — YEAR 14

A premium milling cultivar with average yields compared to the other premium varieties. Has a high protein content. Shows moderate resistance to stripe rust, but has varying levels of susceptibility to the other common wheat diseases. A short to medium height cultivar 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)	78
Protein (%) (N% x 5.7)	13.6
Falling number (sec)	364
Screenings (%)	1.0

END USE	Premium grade milling

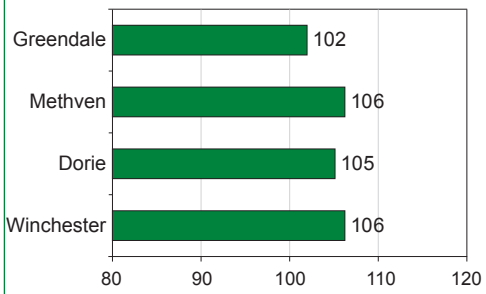
BACKGROUND	
Breeder	New Zealand Institute for Bioeconomy Science
Agent	Luisetti Seeds

Yields are relative to other milling wheats only. * 3-year mean for Methven (no data 2023-24).

SY MEDEA (SY115666) — YEAR 4

Above average to high yielding medium grade milling cultivar. Has varying degrees of resistance to most wheat diseases, but shows susceptibility to 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	Low

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	50
Test weight (kg/hl)	76
Protein (%) (N% x 5.7)	11.8
Falling number (sec)	323
Screenings (%)	0.4

END USE	Medium grade milling

BACKGROUND	
Breeder	Syngenta
Licensee	Cropmark Seeds
Agent	Not yet assigned

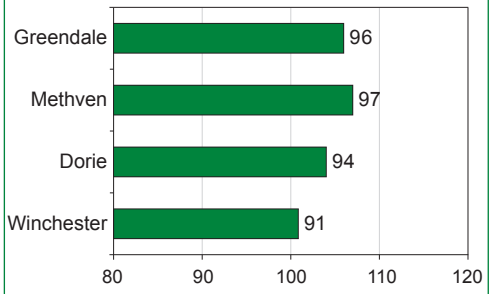
Yields are relative to other milling wheats only. * 3-year mean for Methven (no data 2023-24). ** Resistance is affected by pathotypes present (score is an average).

VICEROY PVR

YEAR 16

Below average yielding medium grade milling cultivar with higher protein test weight. Moderately resistant to stripe rust with varying susceptibility to other diseases. A medium to tall, stiff-strawed cultivar with 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)	374
Screenings (%)	0.9

END USE	Medium grade milling

BACKGROUND	
Breeder	New Zealand Institute for Bioeconomy Science
Agent	Luisetti Seeds

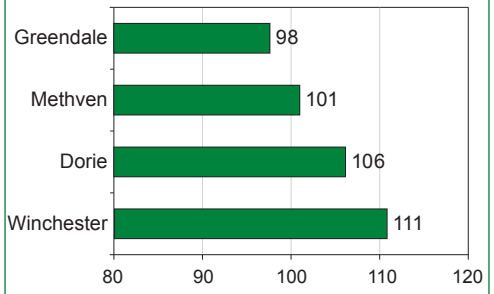
Yields are relative to other milling wheats only. * 3-year mean for Methven (no data 2023-24). ** Resistance is affected by pathotypes present (score is an average).

WHOPPER PVR

YEAR 6

Yields vary from high to slightly below average. Whopper is a medium grade wheat cultivar which also features in the autumn sown feed wheat trials. Is mostly resistant to stripe rust and powdery mildew but shows varying levels of susceptibility to other common wheat diseases. A stiff-strawed cultivar with late 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	Mostly resistant
Leaf rust	Susceptible
Powdery mildew	Mostly resistant
Fusarium head blight	Moderately susceptible

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

GRAIN QUALITY (4-year means)	Canterbury
TGW (g)	46
Test weight (kg/hl)	76
Protein (%) (N% x 5.7)	10.7
Falling number (sec)	360
Screenings (%)	0.7

END USE	Medium grade milling/feed

BACKGROUND	
Breeder	Sejet
Licensee	New Zealand Institute for Bioeconomy Science
Agent	Luisetti Seeds

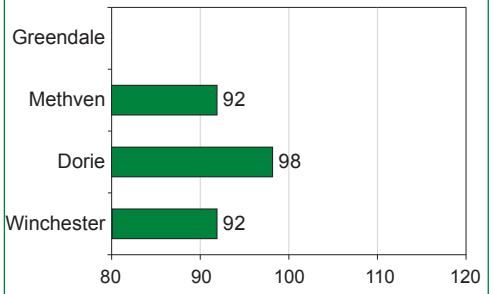
Yields are relative to other milling wheats only. * 3-year mean for Methven (no data 2023-24). ** Resistance is affected by pathotypes present (score is an average).

CRWT281

YEAR 1

A premium milling wheat cultivar with average yields compared to the other premium varieties. Shows resistance to most common wheat diseases, but was moderately susceptible to FHB. An early to intermediate maturing, medium height cultivar with moderate straw strength and with excellent sprouting resistance and high falling number.

RELATIVE YIELDS – 1-year* adjusted mean (% of site mean yield)



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

FIELD CHARACTERISTICS	
Straw strength	Moderate
Crop height	Medium
Maturity	Early-Intermediate
Sprouting risk	Very low

GRAIN QUALITY (1-year means)	Canterbury
TGW (g)	47
Test weight (kg/hl)	79
Protein (%) (N% x 5.7)	13.6
Falling number (sec)	443**
Screenings (%)	0.7

END USE	Premium grade milling

BACKGROUND	
Breeder	New Zealand Institute for Bioeconomy Science
Agent	Luisetti Seeds

Yields are relative to other milling wheats only. *First year in CPT, so 1-year means, apart from Greendale (no data).
** Falling number based on 1 year, when including CPT1 data falling number is 372 (4-year mean).

barley - trial site details

2025/2026 trial site location map.

BALFOUR, SOUTHLAND

Warkworth soil, Dryland
Trial operator: Chetan Parab,
New Zealand Institute for Bioeconomy Science
Host farmer: Scott Dillon

This autumn dryland barley trial was drilled on 24 April 2025 into a paddock sown with cv. Surge following triticale. Background soil N measured 78 kg/ha (0–60 cm), with an additional 200 kg N/ha applied. The trial received one pre-emergence and one post-emergence herbicide, two fungicides and one PGR application. Some lodging was recorded, however, the trial was successfully harvested on 4 February 2026.

CHERTSEY, MID CANTERBURY

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

The trial was not harvested due to severe hail damage.

ST ANDREWS, SOUTH CANTERBURY

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

This dryland trial was established on 16 May 2025 into a paddock of SY Transformer following a wheat crop. 170 kg N/ha was applied in one application of sulphate of ammonia and two applications of urea. During the season one pre- and two post-emergence herbicides, two insecticides, three fungicides and two PGR applications were applied. It was harvested on 13 January 2026.

barley - agronomic comment

Autumn Sown Barley Agronomic Comment 2025/2026 Season

CULTIVAR	End-use	Years in CPT2 trials	Scald	Net blotch (net form)	Leaf rust	Powdery mildew	Straw strength	Crop height	Maturity
Baxter	Feed	3	MRMS	MRMS‡	S	MR‡	Stiff	Medium-tall	Intermediate
Buttress	Feed	7	MSS‡	MR	MS	MRR‡	Moderate	Medium-tall	Intermediate
Laureate	Malting/ Feed	10	MRMS	MR	MS	MRR‡	Moderate	Medium	Intermediate
RGT Planet	Malting/ Feed	10	MS‡	MS‡	MS‡	MRR‡	Moderate	Medium	Early-intermediate
SY Dolomite	Feed	8	MRMS‡	MRMS	MSS‡	R‡	Moderate-stiff	Medium	Intermediate
SY Silhouette	Feed	8	MRMS‡	MR	(MS)‡	R‡	Stiff	Medium	Late
SY Transformer	Malting/ Feed	7	MRMS	MR	S‡	R‡	Moderate-stiff	Medium	Intermediate
CRBA180	Feed	2	(MRMS)‡	MRMS‡	S	Unknown	Moderate	Medium	Intermediate
SY418-250	Feed	3	MR	MRMS‡	S	Unknown	Moderate-stiff	Medium	Intermediate
SY418-336	Feed	4	S	MRMS‡	**(MSS)**	Unknown	Stiff	Short-medium	Intermediate

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

End-use has been provided by the breeder/agent and does not guarantee that a contract will be issued for that cultivar.
Disease susceptibility sourced from FAR-funded Disease Nurseries at Lincoln and Palmerston North (assessments carried out by BSI).
‡ Rating based on data of previous seasons, as disease pressure was low in one or more of the disease nurseries.
(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).
"Unknown" indicates there is insufficient trial information in New Zealand to assess resistance.
Bold text indicates there is a change in rating.

Autumn Sown Barley Cultivar Evaluation 2025/2026 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		Waimakariri silt loam	Warkworth soil	
Previous crop		Wheat	Triticale	
Sowing date		16-May	24-Apr	
Harvest date		13-Jan	4-Feb	
Dryland/Irrigated		Dryland	Dryland	
Baxter		11.3	7.9	3
Buttress		9.7	7.8	7
Laureate [M]		10.7	8.3	10
RGT Planet [M]		9.2	7.4	10
SY Dolomite		10.7	8.3	8
SY Silhouette		11.0	8.5	8
SY Transformer [M]		11.7	8.5	7
CRBA180		10.9	8.2	2
KSB2210		N/A	N/A	1
SY418-250		10.2	8.6	3
SY418-336		10.7	8.2	4
Site mean yield		**10.5**	**8.1**	
P-Value		<0.001	0.025	
LSD (p=0.05)		**0.8**	**0.6**	
CV (%)		**5.4**	**5.5**	

Target plant population 175 plants/m^2.

*Abandoned: Chertsey - Hail.

[M] Malting.

End-use has been provided by the breeder/agent and does not guarantee that a contract will be issued for that cultivar.

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

N/A: This cultivar is discontinued and was therefore excluded from the publication by the breeder in accordance with CPT criteria.

Canterbury

CULTIVAR	T.G.W. (g)	Test Weight (kg/hl)	Protein (%) (N% x 6.25)	Screenings (%)
Baxter	56	63	12.3	1.9
Buttress	52	64	12.9	1.2
Laureate [M]	57	65	12.9	1.2
RGT Planet [M]	52	67	12.4	2.8
SY Dolomite	58	63	12.7	1.9
SY Silhouette	54	66	13.0	2.6
SY Transformer [M]	55	65	12.7	1.9
CRBA180	55	65	12.8	1.4
KSB2210	N/A	N/A	N/A	N/A
SY418-250	53	63	12.1	1.4
SY418-336	58	60	12.7	2.0
Mean	**55**	**64**	**12.6**	**1.8**
P-value	-	-	-	-
LSD (p=0.05)	-	-	-	-

Southland

CULTIVAR	T.G.W. (g)	Test Weight (kg/hl)	Protein (%) (N% x 6.25)	Screenings (%)
Baxter	49	62	11.2	6.0
Buttress	48	66	12.1	1.8
Laureate [M]	52	65	11.1	2.4
RGT Planet [M]	52	65	11.5	3.5
SY Dolomite	53	63	11.4	2.4
SY Silhouette	52	64	11.1	2.2
SY Transformer [M]	49	64	11.1	4.1
CRBA180	51	62	11.5	4.8
KSB2210	N/A	N/A	N/A	N/A
SY418-250	51	64	11.2	2.3
SY418-336	51	63	11.4	3.6
Mean	**51**	**64**	**11.4**	**3.2**
P-value	-	-	-	-
LSD (p=0.05)	-	-	-	-

[M] Malting

End-use has been provided by the breeder/agent and does not guarantee that a contract will be issued for that cultivar.

Single trial - no LSD available.

N/A: This cultivar is discontinued and was therefore excluded from the publication by the breeder in accordance with CPT criteria.

Quality data are also presented as 4-year means on the individual cultivar description pages.

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	3	4	7	3	
Baxter	**102**	**106**	**104**	**97**	3
Buttress	97	97	98	**100**	7
Laureate [M]	**100**	101	**101**	**100**	10
RGT Planet [M]	93	93	94	84	10
SY Dolomite	**102**	**103**	**103**	**105**	8
SY Silhouette	**100**	101	**101**	**106**	8
SY Transformer [M]	**100**	**105**	**103**	**105**	7
CRBA180*	**104**	**102**	**104**	**104**	2
KSB2210	N/A	N/A	N/A	N/A	1
SY418-250*	97	99	99	**103**	3
SY418-336	**103**	**103**	**103**	**99**	4
Mean	12.8	11.8	12.3	8.0	
P-value	<0.001	<0.001	<0.001	0.031	
LSD (estab. cv.) (p=0.05)	5	5	4	11	
LSD (new vs estab.) (p=0.05)	7	8	6	16	

[M] Malting. End-use has been provided by the breeder/agent and does not guarantee that a contract will be issued for that cultivar.

No result from Balfour in 2023-24 and Chertsey in 2025- 26 (data is a 3-year mean). *SY418-250 has only been in CPT for for 3 years and CRBA180 for 2 years.

N/A: This cultivar is discontinued and was therefore excluded from the publication by the breeder in accordance with CPT criteria.

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).

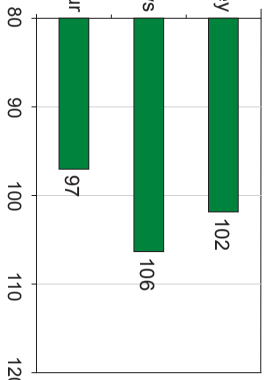
Figures in brackets are less robust as they are only based on one year of data.

BAXTER Provisional PVR

YEAR 3

Yields variable, below average to high, depending on location. Has a degree of resistance to scald, net blotch and powdery mildew, but is susceptible to leaf rust. Medium to tall height, stiff-strawed cultivar with intermediate maturity.

RELATIVE YIELDS – 3-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Intermediate resistance
Net blotch	Intermediate resistance
Leaf rust	Susceptible
Powdery mildew	Moderately resistant
FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium-tall
Maturity	Intermediate

GRAIN QUALITY (3-year means)	Canty	Sthld
TGW (g)	50	45
Test weight (kg/hl)	61	60
Protein (%) (N% x 6.25)	10.6	11.4
Screenings (%)	4.8	10.9
END USE	Feed	

BACKGROUND	
Breeder	Sejet
Head Licensee New Zealand	Institute for Bioeconomy Science
Agent	Luisetti Seeds

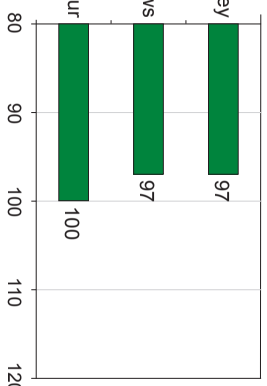
* Third year in CPT2, so 3-year means, 2-year means Balfour (no data for 2023-24) and Chertsey (no data 2025-26).

BUTTRESS PVR

YEAR 7

Below average to average yielding feed cultivar. Has some resistance for net blotch and powdery mildew but shows susceptibility to scald and leaf rust. A medium to tall cultivar 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)	11.4	12.3
Screenings (%)	2.7	3.3
END USE	Feed	

BACKGROUND	
Breeder	Sejet
Head Licensee New Zealand	Institute for Bioeconomy Science
Agent	Luisetti Seeds

*3-year mean Balfour (no data for 2023-24) and Chertsey (no data 2025-26).

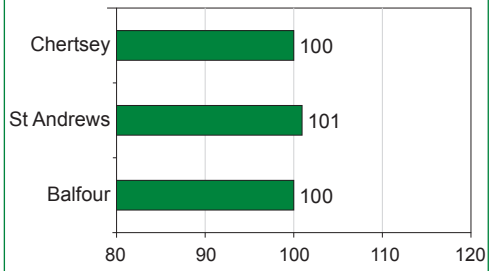
barley cultivar descriptions

LAUREATE PVR

YEAR 10

A malting, distilling and feed barley producing average yields. Has a degree of resistance to scald, net blotch and powdery mildew, but is moderately susceptible to leaf rust. Medium height cultivar 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	Moderately susceptible
Powdery mildew	Mostly resistant

FIELD CHARACTERISTICS	
Straw strength	Moderate
Crop height	Medium
Maturity	Intermediate

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	52	48
Test weight (kg/hl)	63	63
Protein (%) (N% x 6.25)	11.2	11.9
Screenings (%)	3.4	6.1

END USE	
	Malting/feed

BACKGROUND	
Breeder	Syngenta
Title holder	RAGT
Head licensee	Cropmark Seeds
Agent	PGG Wrightson Grain

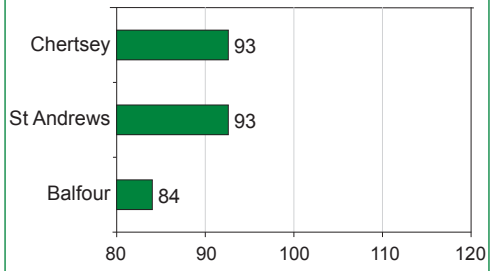
*3-year mean Balfour (no data for 2023-24) and Chertsey (no data 2025-26).

RGT PLANET PVR

YEAR 10

A malting and feed variety producing below average yields. Mostly resistant to powdery mildew, but moderately susceptible to scald, net blotch and leaf rust. A medium height cultivar with moderate straw strength and early to intermediate maturity.

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



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

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

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	52	48
Test weight (kg/hl)	63	63
Protein (%) (N% x 6.25)	11.1	12.2
Screenings (%)	3.2	8.4

END USE	
	Malting/feed

BACKGROUND	
Breeder	RAGT R2n
Title holder	RAGT
Head licensee	RAGT New Zealand
Agent	PGG Wrightson Grain

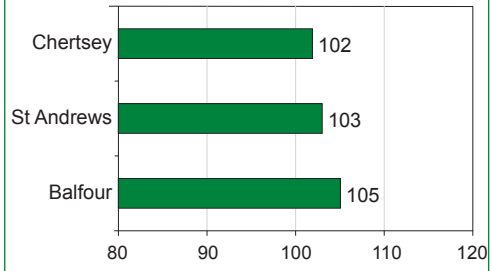
*3-year mean Balfour (no data for 2023-24) and Chertsey (no data 2025-26).

SY DOLOMITE PVR

YEAR 8

Above average yielding feed cultivar. Has resistance to scald, net blotch and powdery mildew, but is mostly susceptible to leaf rust. 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	Resistant

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

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	53	50
Test weight (kg/hl)	61	63
Protein (%) (N% x 6.25)	10.9	12.0
Screenings (%)	3.8	5.0

END USE	
	Feed

BACKGROUND	
Breeder	Syngenta
Title holder	RAGT
Head licensee	Cropmark Seeds
Agent	Wholesale Seeds

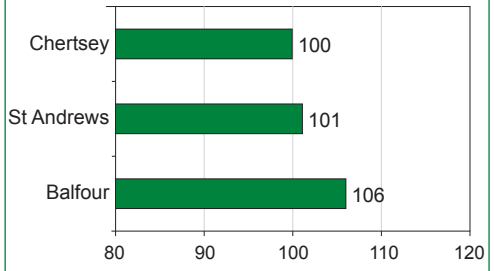
*3-year mean Balfour (no data for 2023-24) and Chertsey (no data 2025-26).

SY SILHOUETTE PVR

YEAR 8

Average yielding feed cultivar in Canterbury and high yielding in Southland. Shows some level of resistance to scald, net blotch and powdery mildew but is mostly susceptible to leaf rust. A later maturing, medium height stiff-strawed cultivar.

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



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

FIELD CHARACTERISTICS	
Straw strength	Stiff
Crop height	Medium
Maturity	Late

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	53	51
Test weight (kg/hl)	61	63
Protein (%) (N% x 6.25)	11.4	12.1
Screenings (%)	4.1	5.7

END USE	
	Feed

BACKGROUND	
Breeder	Syngenta
Title holder	RAGT
Head licensee	Cropmark Seeds
Agent	Advance Agriculture, Cates

*3-year mean Balfour (no data for 2023-24) and Chertsey (no data 2025-26).

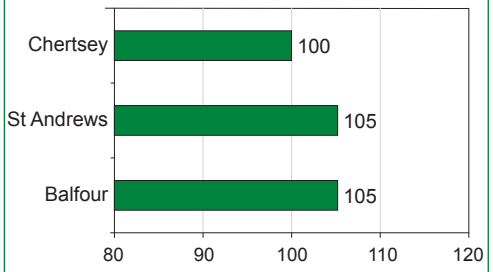
barley cultivar descriptions

SY TRANSFORMER PVR

YEAR 7

Average to above average yielding feed cultivar with malting potential. Some resistance to common barley diseases, with the exception of leaf rust. A medium height moderate to stiff-strawed cultivar.

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



DISEASE RESISTANCE	
Scald	Intermediate resistance
Net blotch	Moderately resistant
Leaf rust	Susceptible
Powdery mildew	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)	62	62
Protein (%) (N% x 6.25)	11.2	11.8
Screenings (%)	3.9	6.7

END USE	
	Malting/feed
BACKGROUND	
Breeder	Syngenta
Title holder	RAGT
Head licensee	Cropmark Seeds
Agent	PGG Wrightson Grain

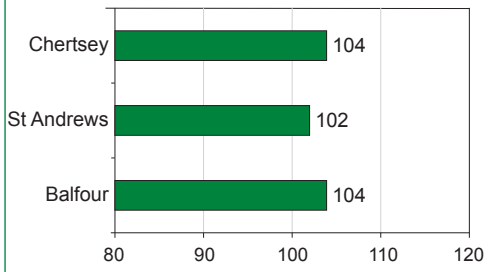
*3-year mean Balfour (no data for 2023-24) and Chertsey (no data 2025-26).

CRBA180 Provisional PVR

YEAR 2

Above average yielding feed barley. Has a degree of resistance to scald and net blotch but is susceptible to leaf rust. Medium height cultivar with intermediate maturity.

RELATIVE YIELDS – 2-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Intermediate resistance
Net blotch	Intermediate resistance
Leaf rust	Susceptible
Powdery mildew	Unknown
FIELD CHARACTERISTICS	
Straw strength	Moderate
Crop height	Medium
Maturity	Intermediate

GRAIN QUALITY (2-year means)	Canty	Sthld
TGW (g)	52	49
Test weight (kg/hl)	62	61
Protein (%) (N% x 6.25)	11.6	12.0
Screenings (%)	3.5	8.7

END USE	
	Feed
BACKGROUND	
Breeder	Sejet
Head Licensee	New Zealand Institute for Bioeconomy Science
Agent	Luisetti Seeds

* Second year in CPT2, so 2-year mean. 1-year means for Balfour (no data for 2023-24) and Chertsey (no data for 2025-26).

KSB2210

YEAR 1

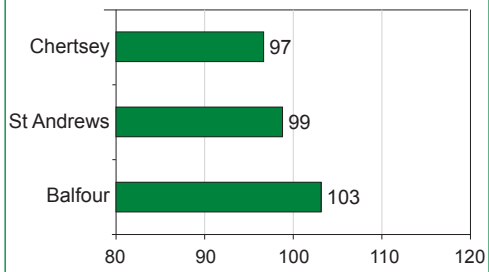
Cultivar has been discontinued.

SY418-250

YEAR 3

A below average to above average yielding feed variety. Has some resistance to scald and net blotch, but is susceptible to leaf rust. A moderate to stiff-strawed cultivar with intermediate maturity.

RELATIVE YIELDS – 3-year* adjusted mean (% of site mean yield)



DISEASE RESISTANCE	
Scald	Moderately resistant
Net blotch	Intermediate resistance
Leaf rust	Susceptible
Powdery mildew	Unknown
FIELD CHARACTERISTICS	
Straw strength	Moderate-stiff
Crop height	Medium
Maturity	Intermediate

GRAIN QUALITY (3-year means)*	Canty	Sthld
TGW (g)	51	49
Test weight (kg/hl)	61	63
Protein (%) (N% x 6.25)	10.1	11.7
Screenings (%)	3.2	4.5

END USE	
	Feed
BACKGROUND	
Breeder	Syngenta
Title holder	RAGT
Head licensee	RAGT New Zealand
Agent	Not yet assigned

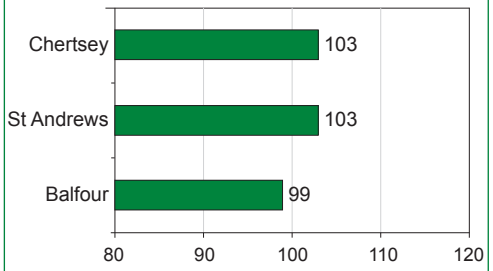
* Third year in CPT2, so 3-year means, 2-year means Balfour (no data for 2023-24) and Chertsey (no data 2025-26).

SY418-336

YEAR 4

Above average yielding feed variety in Canterbury, with average yields in Southland. Intermediate resistance to net blotch, but shows varying levels of susceptibility to scald and leaf rust. A short to medium height, stiff-strawed cultivar with intermediate maturity.

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



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

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

GRAIN QUALITY (4-year means)	Canty	Sthld
TGW (g)	52	47
Test weight (kg/hl)	61	62
Protein (%) (N% x 6.25)	11.1	12.0
Screenings (%)	3.7	8.6

END USE	
	Feed

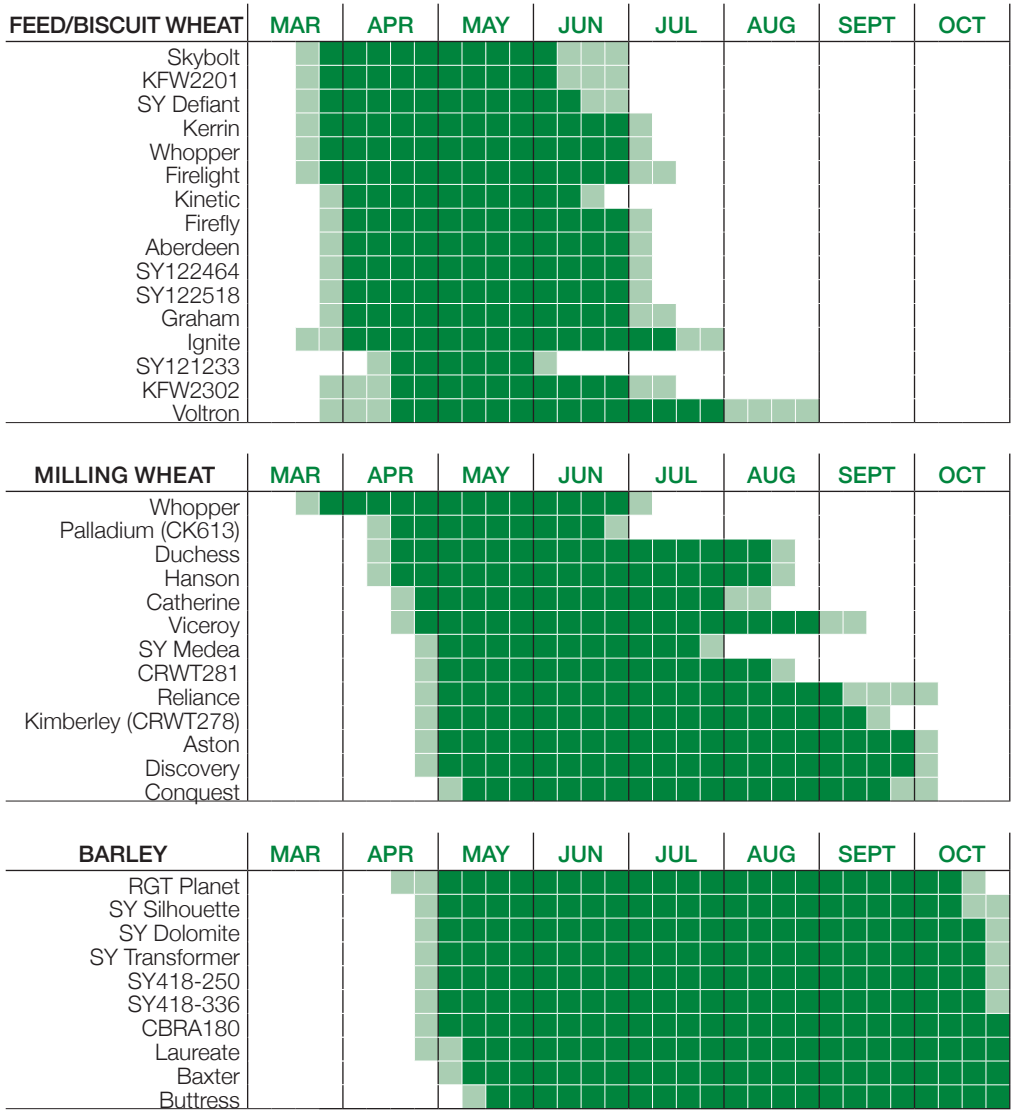
BACKGROUND	
Breeder	Syngenta
Title holder	RAGT
Head licensee	RAGT New Zealand
Agent	Not yet assigned

*3-year mean Balfour (no data for 2023-24) and Chertsey (no data 2025-26).

Autumn sown wheat and barley – Sowing date guidelines 2026

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 –



Less information available for new cultivars.
Crops sown at the early window could be at risk from late frosts during flowering and grainfill.
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

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.

establishment

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. This is also important when considering residual herbicides since some products require a minimum planting 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

Please note that region and crop management, such as grazing can be of influence to the optimum target population. When in doubt check with your rep.

Use the sowing rate calculation on the previous page to achieve your establishment target.

Wheat autumn sowings

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

Usually, there is no real advantage of sowing more than 200 plants/m^2.

Barley autumn sowings

- April 150-175 plants/m^2
- May 175 plants/m^2
- June 200-225 plants/m^2

April sown, establishment rates can depend on cultivar. True winter barley cultivars can benefit from the slightly lower establishment target, whereas cultivars that can also be sown in spring might benefit from the higher plant establishment targets.

seed quality and seed treatments

SEED QUALITY

High quality seed has:

- 90% germination or higher
- less than 10% *Fusarium/Microdochium*
- a thousand grain weight (TGW) 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.

Current fungicides available for treatment of seeds.

Product name	Active ingredient	Mode of Action group
Kinto™ Duo	20 g/L triticonazole + 55 g/L prochloraz	DMI(Triazole); Group 3 Fungicide + DMI(Triazole); Group 3 Fungicide
Raxil® Star	20 g/L fluopyram + 100 g/L prothioconazole + 60 g/L tebuconazole	SDHI; Group 7 Fungicide + DMI(Triazole); Group 3 Fungicide + DMI(Triazole); Group 3 Fungicide
Rancona® Dimension	25 g/L ipconazole + 20 g/L metalaxyl	DMI(Triazole); Group 3 Fungicide PhenylAmide; Group 4 Fungicide
Vitaflo®	200 g/L carboxin + 200 g/L thiram	SDHI; Group 7 Fungicide + Multi-site; Group M3 Fungicide
Systiva®	333 g/L fluxapyroxad	SDHI; Group 7 Fungicide
Capri™	25 g/L tebuconazole	DMI(Triazole); Group 3 Fungicide

Source Novachem 15/05/2026

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.

Current products containing either Imidacloprid or Clothianidin for treatment of seed against insect pests.

Imidacloprid (Group 4a)	Clothianidin (Group 4a)
Acclaim™	Donaghys Keyrole pro™
Gaucho®	Endow® 600
Punto™	Nipsit inside®
Radicle 600FS	Patrol™
Senator® 600	Poncho®
Starlan®	

Source Novachem 15/05/2026

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.

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.

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 one 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.

glossary of terms

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

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