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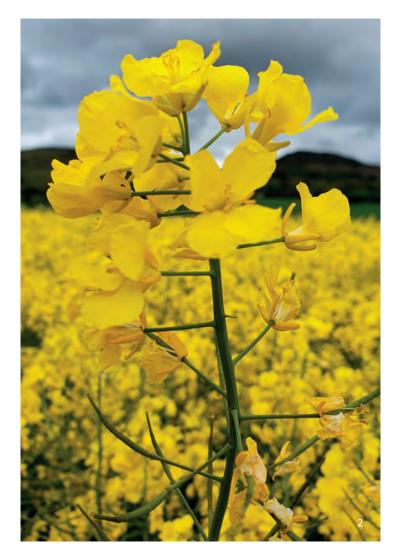
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For further information about Pioneer Oilseed Rape hybrids, please visit: www.corteva.co.uk/pioneer

Pioneer hybrids in this booklet contain OG-INRA Technology from INRA, France.

AHDB data referenced can be found in full at www.ahdb.org.uk



Winter Oilseed rape comparative agronomic descriptions 2022



	Traits and characteristics	Year of Iaunch	Oil content (%)	Lodging resistance	Height (cm)	Light leaf spot resistance	Stem canker resistance	Earliness of flowering	Earliness of maturity	Data source	Testing qualification
PT303	Protector® Sclerotinia, TuYV	2021	46.0	8	164	7	7	5	5	1	А
PT299	Very high oil content	2022	46.9	8	152	7	8	7	5	1	В
PT275		2018	45.2	8	148	6	5	6	6	1	С
PT279CL	Clearfield®	2018	44.8	8	152	5	5	6	6	1	D
PT284	Protector® Clubroot	2019	45.1	9	150	6	7	5	5	2	Е
PX131	Maximus® Semi-Dwarf, TuYV	2019	46.4	8	116	7	6	6	5	1	F
PX125CL	Maximus® Semi-Dwarf, Clearfield®	2021	44.2	9	124	6	5	6	4	3	E

On the 1-9 scales, high figures indicate that a hybrid shows the character to a high degree (e.g. high resistance) 1 = AHDB Database; 2 = UK Official Data; 3 = Pioneer Research Data

TuYV = Turnip Yellows Virus resistance





Introducing the first Pioneer Protector® Sclerotinia winter OSR hybrid, offering tolerance to this difficult to control, stem-based disease.

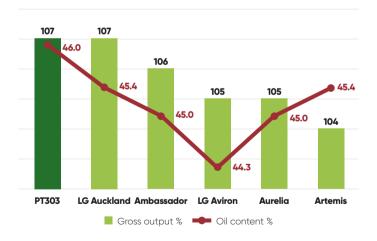
- Top winter oilseed rape gross output 2022 AHDB UK Recommended List.
- Sclerotinia tolerance.
- Autumn vigour and spring regrowth.
- Light leaf spot 7, stem canker 7.
- Phoma Rlm 7 and horizontal quantitative resistance.
- Turnip yellows virus (TuYV) resistance.
- Verticillium stem stripe resistance.
- Unique phenotype and genotype spreads risk.
- Later flowering earlier maturing combination.
- Tall with good lodging resistance and stem stiffness.



Top gross output

PT303 has given the highest gross output of any winter oilseed rape variety in AHDB UK trials with a yield of 107% and is newly added to the Recommended List. PT303 gross yield is derived from a very high seed yield and the highest oil content of any AHDB UK listed variety.

Gross output and oil content of highest gross output varieties AHDB UK Recommended List 2022

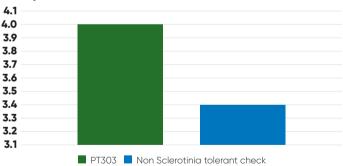


Sclerotinia tolerance

PT303 is the first hybrid to be marketed in the UK with a claim for tolerance to sclerotinia. This yield sapping disease can reduce yields in commercial situations by up to 30%.

Significant yield loss can occur where flowering fungicide applications are missed or delayed, or where sclerotinia disease pressure is very high. PT303 Protector Sclerotinia can provide extra support for your crop when this unpredictable and damaging disease strikes.

Seed yield (t/ha)



PT303 Protector® Sclerotinia yielded over 15% more than the non sclerotinia tolerant check over 6 untreated trials*. At £600/t ex farm a 0.6t increase = £360 potential advantage per Ha.

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^{*}Pioneer research trials







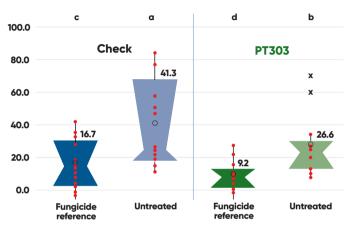
Sclerotinia infection is largely eliminated from both treated and untreated AHDB trials through comprehensive fungicide applications at flowering. In commercial situations however flowering treatment programmes may be more limited, and applications may be inadvertently mistimed.

Whatever the crop management approach when sclerotinia strikes any tolerance to the disease has the potential to reduce yield loss.

PT303 gave the top gross output yield in AHDB UK RL trials even though sclerotinia infection was probably well controlled at all locations. The sclerotinia tolerance of PT303 is therefore likely to be an additional benefit to its proven performance in AHDB trials.

Impact of incidence of sclerotinia infection, 2019–2021

% incidence in 13 trials



Incidence = frequency of stems infected by *Sclerotinia sclerotiorum.*

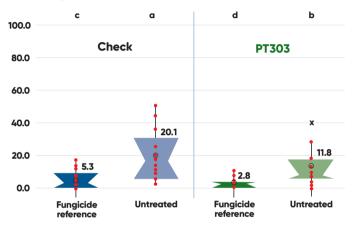
Sclerotinia Protector® significantly reduced the number of infected stems.

Average reduction of 36%.

The variability of infestation of PT303 was significantly less than the check.

Severity of sclerotinia impact, 2019–2021

% severity in 13 trials



Severity = intensity (extent) of *Sclerotinia* lesions.

Sclerotinia Protector® significantly lowered the severity on plant stems.

Average reduction of 42%.

The reduction of the variability of lesions was very marked, even in untreated plots.

The efficacy of the fungicide treatments applied was also improved.

Autumn vigour and spring regrowth

PT303 achieved the top AHDB yield after being tested in seasons when significant infestations of cabbage stem flea beetle occurred across the country. The ability of PT303 to grow rapidly in the autumn and then re-grow very rapidly in the spring contributed to its yield performance.

Official trials, vigour scores

	Establishment (1-9)	Autumn Vigour (1-9)
PT303	7.10	6.00
Elgar	7.00	5.80
Alizze	6.80	5.70
DK Expansion	6.80	5.80
Eraton	6.80	5.80
Campus	6.70	5.50
Nikita	6.50	5.40

Source: UK official trials

On the 1-9 scales, high figures indicate that a hybrid shows the character to a high degree (e.g. high resistance)

Light leaf spot and stem canker

PT303 has broad agronomic strengths. With a resistance score of 7 for both light leaf spot and stem canker, its base disease resistance package is suited to any location.

Phoma resistance is derived from both Rlm 7 and horizontal quantitative sources ensuring it is at an appropriate level for high pressure situations.

Turnip yellows virus (TuYV) resistance

PT303 has TuYV resistance confirmed by GEVES in France.

Stem health

PT303 stem health at maturity reduces premature senescence and its damaging effect on yield.

PT303

Leading competitor





PT303 comparative agronomic scores, top gross output hybrids 2022

	Oil content (%)	Light leaf spot resistance	Stem canker resistance	Turnip yellows virus resistance	Lodging resistance	Stem stiffness	Height (cm)	Earliness of flowering	Earliness of maturity
PT303	46.0	7	7	R	8	8	164	5	5
LG Auckland	45.4	7	7	R	8	7	155	7	6
Ambassador	45.0	7	7	R	8	8	154	7	6
LG Aviron	44.3	8	7	R	7	7	156	8	6
Aurelia	45.0	7	7	R	8	8	150	7	5
Artemis	45.4	6	7	R	7	8	157	6	6

Source: AHDB 2022 UK RL

Verticillium stem stripe resistance

ADAS tests at a 2021 UK location with a recent history of verticillium suggest PT303 may have partial resistance to verticillium stem stripe. When combined with its tolerance to Sclerotinia this gives PT303 genuine potential to reduce the overall incidence of damaging stem-based disease when approaching harvest.

ADAS results at this location further independently confirmed the ability of PT303 to quickly establish high levels of ground cover and grow rapidly in both the autumn and spring.

Verticillium stem stripe pre-harvest assessment

	Verticillium incidence % of plants affected	Verticillium index (0-100 index)	Premature ripening %
PT303	52.0	32.6	40.1
Quartz	81.0	71.2	72.8
Campus	69.0	42.0	48.5
Flamingo	54.0	30.2	35.3

Source: ADAS 2021

Verticillium stem stripe results

	Ground cover (% of area)	Vigour 20/10/21 (0-10 index*)	Vigour 20/10/21 (0-10 index)	Verticillium stem stripe trial rating
	Scored 20/10/2020	Scored 20/10/2020	Scored 29/03/2021	
PT303	83.80	7.5	7.5	Partially resistant
Quartz	60.00	5.6	5.1	Susceptible
Campus	65.00	6.1	6.3	Moderately susceptible
Flamingo	71.20	6.4	7.6	Partially resistant

Source: ADAS 2021

*0 = lowest; 10 = highest

Unique phenotype and genotype spreads risk

PT303 was bred by incorporating a new genetic source into the Pioneer winter oilseed rape breeding programme. This new genotype source resulted in the sclerotinia tolerance that was subsequently confirmed in Pioneer practical field research, or phenotype testing.

This breeding initiative likely brings more variation to the type of winter oilseed rape genetics available to the UK grower. This variation provides an opportunity to spread cultivation risk.

Later flowering, earlier maturity combination

PT303 combines later flowering with reasonably early maturity. For growers in locations where late frosts are a regular concern this may be an attractive feature.

Tall with good lodging resistance and stem stiffness

Although PT303 is a very high yielding and taller than average hybrid it nevertheless scores 8 for both lodging resistance and stem stiffness. Healthy stems at maturity contribute to better standing power and Pioneer research showing lower levels of sclerotinia infection may help explain such good scores.



PT299



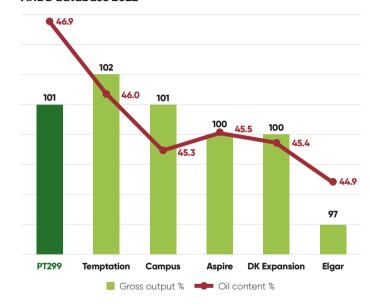
An AHDB Candidate hybrid with an exceptional oil content and notable resistance to Stem Canker

- PT299 has given the highest oil content of any variety in 2021 AHDB Trials.
- PT299 has a stem canker resistance score of 8 and a light leaf spot score of 7.

Potential oil bonus payment for PT299 versus control varieties, 2022 AHDB East/West Results

	Seed Yield %	Seed Yield t/ha	Oil Content %	Oil Bonus Payment £ per tonne	Oil Bonus Payment £ per ha
PT299	100	4.60	46.9	62.10	285.66
Temptation	101	4.65	46.0	54.00	250.88
Campus	100	4.60	45.3	47.70	219.42
Aspire	100	4.60	45.5	49.50	227.70
DK Expansion	100	4.60	45.4	48.60	223.56
Elgar	98	4.51	44.9	44.10	198.80

Gross output and oil content of PT299 versus control varieties AHDB database 2022



Figures based on a crop value of £600/tonne and an oil bonus payment of 1.5% for every % above 40%

PT299 comparative agronomic scores

	Oil content (%)	Light leaf spot resistance	Stem canker resistance	Lodging resistance	Stem stiffness	Height (cm)	Earliness of flowering	Earliness of maturity
PT299	46.9	7	8	8	8	152	7	5
Temptation	46.0	6	5	8	8	150	6	5
Campus	45.3	6	6	8	8	152	6	5
Aspire	45.5	7	5	8	9	140	7	4
DK Expansion	45.4	6	7	8	8	159	6	5
Elgar	44.9	7	6	8	9	147	6	6

PT279CL







The first Clearfield hybrid to be added to the AHDB Recommended List. PT279CL has maintained its position on the East/West Recommended List and is a commercially proven Clearfield type.

With a high oil content and stiff straw, PT279CL has provided growers with high harvestable yields since first being listed on the AHDB Recommended List.



Gross output and oil content of PT279CL versus other Clearfield hybrids



Based on AHDB RL Trials 2022 (East/West region)

Comparative agronomic scores PT279CL and other Clearfield® hybrids

	Oil content (%)	Light leaf spot resistance	Stem canker resistance	Turnip Yellows Virus Resistance	Lodging resistance	Stem stiffness	Height (cm)	Earliness of flowering	Earliness of maturity
PT279CL	44.8	5	5	-	8	8	152	6	6
Matrix CL	45.8	6	8	R	8	8	159	6	6
LG Constructor CL	44.4	6	6	R	8	8	148	6	6
DK Imprint CL	43.7	6	8	-	8	7	158	5	5
Nizza CL	44.7	5	6	-	8	8	147	7	5

PT275

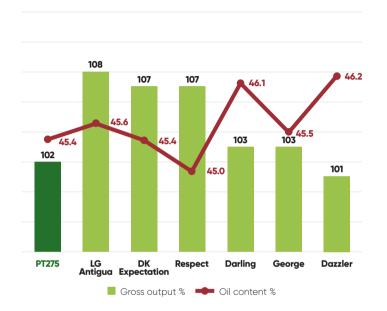


A proven stiff strawed hybrid recommended for the East/West region 2021.

- PT275 was recommended after giving very high gross output yields and demonstrating all round agronomic strength.
- PT275 has given top level gross output yields in treated East/West region trials and the highest untreated yield in 2018 UK trials.



Gross output and oil content of PT275



WOSR AHDB UK RL1 provisional untreated results 2018 harvest*, top 10

	Mean gr t/ha	ross output yield % of controls
PT275	5.64	106
Wembley	5.59	105
Temptation	5.51	103
Aspire	5.49	103
Architect	5.45	102
Alizze (C)	5.44	102
Aspect	5.43	102
Aquila	5.42	102
V 316 OL (C)	5.41	102
Nikita (C)	5.40	101

^{* 5} Locations; trials are treated for sclerotinia at flowering; (C) = yield control; highest 20 yielding varieties shown only. Source: AHDB Database; full results at www.ahdb.org.uk

PT275 comparative agronomic scores

	Oil content (%)	Light leaf spot resistance	Stem canker resistance	Turnip yellows virus resistance	Lodging resistance	Stem stiffness	Height (cm)	Earliness of flowering	Earliness of maturity
PT275	45.4	6	5	-	8	8	156	5	5
LG Antigua	45.6	6	7	R	8	8	162	7	6
DK Expansion	45.4	7	8	-	8	7	156	8	6
Respect	45.0	6	8	-	8	8	162	7	5
Darling	46.1	6	8	R	8	8	159	7	5
George	45.5	6	9	-	8	7	151	7	5

Source: AHDB RL Trials 2021 (East/West region)

On the 1-9 scales, high figures indicate that a hybrid shows the character to a higher degree; R = Resistance

PT284



PT284 combines the Pioneer Clubroot Protector resistance trait with market leading disease resistance scores for the best infield protection. Choose PT284 for better early vigour.

Agronomic Profile

Oil Content	45.1%
Light Leaf Spot Resistance	6
Stem Canker Resistance	7
Lodging Resistance	9
Plant Height (cm)	150
Earliness of Maturity	5

Source: UK Official Data.





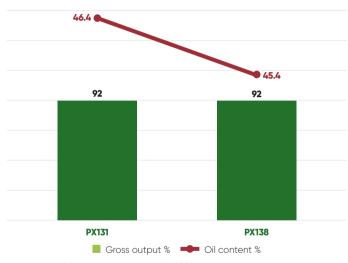


PX131 is the highest yielding semi-dwarf hybrid on the 2022 AHDB Descriptive List.

This unique product type provides growers with the highest level of standing power and the greatest ease of combining.

- Maximus® semi-dwarf hybrids such as PX131 are suited to sowing in high fertility situations where the risk of lodging is high.
- Harvesting is fast and efficient due to the lower level of biomass
- Their spreading growth habit in the autumn significantly reduces the chance of winter kill.

Gross output and oil content of PX131 and PX138



Based on AHDB Descriptive List results 2022

PX131 Comparative agronomic scores

	Oil content (%)	Light leaf spot resistance	Stem canker resistance	Lodging resistance	Stem stiffness	Height (cm)	Earliness of flowering	Earliness of maturity
PX131	46.4	7	6	8	9	116	6	5
PX138	45.4	6	6	8	9	121	5	6

PX125CL





PX125CL is the only Maximus Clearfield hybrid available in the UK. The combination of the Maximus semi-dwarf plant type and the tolerance to Clearfield herbicides provides growers with unique benefits.

Agronomic Profile

Oil Content	44.2%
Light Leaf Spot Resistance	6
Stem Canker Resistance	5
Lodging Resistance	9
Plant Height (cm)	124
Earliness of Maturity	4

Source: Pioneer Research Data.





Pioneer WOSR seed is available with either LumiGEN™ Standard treatment or LumiGEN™ Insecticide treatment. LumiGEN™ Standard includes the fungicide Integral Pro and the Pioneer growth promoter treatment Lumibio Kelta. LumiGEN™ Insecticide additionally includes the insecticide Lumiposa®.



Your key Pioneer contacts

For all enquiries about Pioneer Winter Oilseed Rape contact your local Corteva Representative. Their experience and local advice is available to help you maximise your success.



Beckie CartwrightNorthern England & Scotland

Mobile: **07917 520707**

Email: rebecca.cartwright@corteva.com

Jonathan Bellamy Northern Wales, Central England & Northern Ireland

Office: **01270 619825**

Mobile: **07801 183233**

Email: jonathan.bellamy@corteva.com

Andy Stainthorpe

Office: **01823 334279**Mobile: **07801 183243**

Email: andy.stainthorpe@corteva.com

Matt Conradie Promoter, South West

Mobile: 07788 735780

Email: mattconradie@hotmail.com



Chris WoodgetSouth England & South Wales

Mobile: 07388 850904

Email: chris.woodget@corteva.com





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