

Agrovista  
semi-exclusive

# RGT Guardsman

## winter wheat

**As a technically driven business Agrovista constantly monitors new advances in crop management undertaking trials to assess new products, or preferably to work with the developers to understand more fully how best to apply the technology to gain maximum grower benefit.**

The trait developed by RAGT of wheat varieties resistant to Barley Yellow Dwarf Virus has captured the interest of the early-drilling wheat market as it greatly simplifies crop management and delivers targeted control, removing the need to monitor aphid

populations and leaving time for other key farm activities during the busy autumn period.

Initial varieties carrying the novel trait were notably lower yielding in the absence of the virus which limited their appeal to outlying land only where growers would struggle to effectively manage crops to control aphids, or regions where early aphids were repeatedly problematic. More recently the Sustainable Farming Incentive has boosted grower interest with the £45/ha payment for growers who elect not to use insecticides across their holding but yield relative to conventional varieties has still been lacking.

RGT Guardsman is the first winter wheat variety with BYDV resistance that has **no yield penalty** allowing growers to incorporate it into their rotations without any concerns to yield shortfall.

### RGT Guardsman

Group 4 Hard

- RGT Guardsman is a candidate for the RL and is the first BYDV tolerant variety that has a consistent yield equal to current conventional feed varieties. This eradicates the margin risk associated with previous BYDV lines
- Independent VL1 trials in the absence of BYDV register RGT Guardsman matching yields of Gleam and outperforming LG Skyscraper
- Where BYDV has been present RGT Guardsman is the highest yielding of all Genserus lines
- Early indications are that it has a generally good profile of disease resistance, a high untreated yield and early maturity.
- Based on limited data the use of a PGR would be beneficial

Mildew	(6)
Yellow rust	(8)
Brown rust	(6)
Septoria tritici	(6)
Fusarium	-
Resistance to lodging	(5)
Eyespot	(5)
OWBM	-
Maturity	-2 -1 (0) 1 2

REGION	YIELD
UK	(103)
EAST	(104)
WEST	(100)
NORTH	(104)
Untreated yield	(79)
First cereal	-
Second cereal	-
Light soils	-
Heavy soils	-
Spec. weight	(75.5)

A high yielding hard feed variety, RGT Guardsman in the absence of BYDV has yielded in line with control varieties Gleam and Extase and out-performed LG Skyscraper in official VL trials over the last two years (LSD 0.35t/ha). As a candidate for the AHDB UK Recommended List 2025, RGT Guardsman brings growers the opportunity to drill early without yield penalty or the need to apply aphicides. Table 1.

BYDV resistance

It is a common occurrence within RGT Guardsman for some yellowing of the leaves to occur in the presence of infected aphids. The mechanism to resist the virus cannot be implemented without the aphid penetrating the surface of the leaf and transferring the virus into the plant.

This is different to a mechanical resistance as seen in wheat plants such as those resistant to wheat blossom midge, where the latter is prevented from accessing

the plant entirely. RGT Guardsman resists the virus invasion such that there is less virus present in the plant by harvest than there was initially. As such some yellowing will be seen. A merely tolerant plant would manage to survive through to harvest but the viral load would not diminish, and yield would be compromised.

Agronomics

RGT Guardsman has a development growth rate similar to LG Typhoon and a prostrate growth habit, making it an ideal choice for mid-September drilling- the period when BYDV risk is at its greatest, coupled with high tillering capacity and a faster development to harvest unlike previous BYDV lines, safeguarding harvest quality and enabling more timely cultivations beyond.

The variety is relatively tall, but marginally shorter than LG Skyscraper. Nevertheless a well timed plant growth regulator programme would be recommended. Table 2

Winter wheat VL 2-Year 2023-24 Treated grain yield (t/ha) - 2 year REML model 2

Variety		Mean (t/ha)	% Control	Number of tials	2023	2024
Trial mean		11.77	11.4			
LSD 5%		0.35	3.1			
CV%		3.6				
RGT GUARDSMAN		11.7	102.6	26	11.71	11.68
SKYFALL	Control	11.14	97.7	30	11.19	11.09
GLEAM	Control	11.76	103.2	30	11.76	11.77
LG SKYSCRAPER	Control	11.32	99.3	29	11.4	11.25
KWS EXTASE	Control	11.95	104.9	30	11.91	12
LG ASTRONOMER	Control	10.82	94.9	29	10.79	10.86

Table 1

Control varieties	Yield treated (T) - UK	Yield treated (T) - East	Yield treated (T) - West	Yield treated (T) - North	Yield untreated (UT) (as % treated controls)	Mildew (1-9)	Yellow rust (1-9)	Brown rust (1-9)	Septoria tritici (1-9)	Eyespot (1-9)	OWBM	BYDV	Lodging % (T)	Straw length (cm) (UT)	Ripening (days +/- Skyfall)	Specific weight (kg/hl)
Mean of controls (t/ha)	11.4	11.2	11.5	12.0	11.4	-	-	-	-	-			-			
LSD 5%	3.1	2.5	3.6	7.1	6.0	-	-	-	-	-			-			
RGT GUARDSMAN	103	104	[100]	[[104]]	79	6	8	6	6	5	-	R	3	90	0	75.6
GLEAM	103	102	[104]	[[105]]	71	6	5	6	6	5	R	-	0	85	0	77.3
LG SKYSCRAPER	99	100	[99]	[[99]]	74	7	7	5	5	5	R	-	1	92	+1	77.0

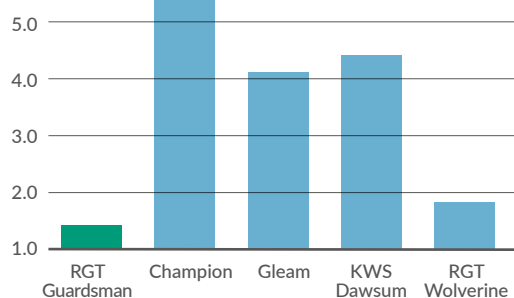
Table 2. SOURCE: VL1 and 2 BSPB data harvest 2023 - 2024 (Also available on AHDB Candidate Table 2025)

## BYDV breeder trial results 2024

The breeder RAGT undertook BYDV trials in 2024 assessing both natural and artificially infected results across three locations; Ickleton, (south of Cambridge); Chepstow (Gloucs) were both inoculated. The site in Wiltshire was not inoculated, relying on natural aphid numbers. It proved to be a generally low pressure

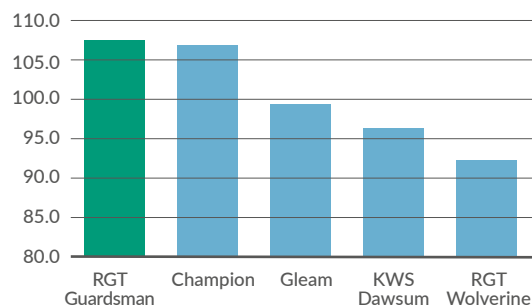
situation across all three sites, though there was evidence of the virus being present with some redening of the flag leaf and a degree of stunting. Of the varieties trialled the worst effected was Champion but visual evidence was not severe, rating only 5 on the 1-9 scale.

Visual effects of BYDV - June 2024



	Visual effects of BYDV June 24 1-9 scale 1= zero effect			
	Ickleton	Chepstow	Wiltshire	
RGT GUARDSMAN	1	1.5	1.5	1.3
GLEAM	6	4.0	2.0	4.0
RGT WOLVERINE	1.5	2.0	2.0	1.8
CHAMPION	7.5	4.0	4.5	5.3
KWS DAWSUM	5	2.5	5.0	4.2

Yield as % of controls - harvest 2024



	Yield as % of controls harvest 2024			
	Ickleton	Chepstow	Wiltshire	
RGT GUARDSMAN	118.0	101.1	101.6	106.9
GLEAM	89.6	100.4	105.6	98.5
RGT WOLVERINE	95.4	86.2	93.6	91.7
CHAMPION	110.0	106.7	101.6	106.1
KWS DAWSUM	102.9	87.4	94.9	95.1

However, even a moderate level of infection present within a non-resistant high yielding feed variety was sufficient to narrow the yield difference between them and RGT Guardsman. This highlights that realistically RGT Guardsman removes the risk previously associated with this new wheat trait of BYDV resistance and offers the UK farmer a genuine new benefit in pest resistance without compromise\* Where BYDV is present, then performance of RGT Guardsman is second to none as displayed in the following table:

RGT GUARDSMAN	125.4%
RGT GOLDFINCH	106.0%
RGT HEXTON	104.0%
CHAMPION	102.9%
RGT HIGHGROVE	101.0%
RGT SKYFALL	100.0%
LG SKYSCRAPER	96.5%
KWS EXTASE	92.2%
KWS FIREFLY	85.2%
RGT SAKI	82.0%

Yield under BYDV pressure (2023 inoculated)

