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Technical Insiders View

High voltage

Sparking interest in the AHDB Oilseed Rape Candidate List is the latest high yielding, hybrid offering from DSV. CPM reviews Voltage.

By Charlotte Cunningham

Just like a new artists stage at Glastonbury may be the ideal place to spot the next big thing, AHDB's Candidate List has long been the go-to for those looking for the next emerging leaders of the crop world.

And appearing to draw interest from the crowds at the moment is Voltage — the latest high-yielding, robust, hybrid variety from DSV.

“With every hybrid we create, we try to breed in traits that will help facilitate profitable, productive OSR growing,” explains Simon Kroeger, OSR product placement manager at DSV in Germany. “The UK is a unique market for us as breeders as there are a lot of challenges faced by growers that we have to address through our breeding programme.”

As well as DSV's usual general breeding targets, including high yields and good oil content — on top of phoma and TuYV

resistance — when it came to Voltage, a specific focus was put on light leaf spot tolerance, says Simon. “LLS is a major disease threat in the UK so this was a must-have trait, and we also looked particularly at including good lodging resistance and stem stiffness, as well as a more compact growth habit, with mid-early maturity so that the need for desiccation was also lower.

“We believe we've captured this in a complete package through Voltage, which is a combination of one of our best TuYV-resistant fathers and a mother that boasts high LLS tolerance and has been specifically adapted to the UK's maritime climates.”

Robust variety

According to Michael Farr, technical manager at DSV UK, this LLS resistance is credit to the improvements in DSV's breeding over recent years. “LLS is not an easy disease to select for because the symptoms are so difficult to measure. But the fact we've been able to bring this into an already robust variety shows the step up in our breeding for disease resistance.”

While more data is still to be gathered, the Candidate List is a good indicator of the potential of the variety, and looking at Voltage's performance so far, NL1 trials have shown consistently good vigour —

something that seems to be becoming increasingly important for growers, says Michael. “From what we've seen so far, Voltage is one of the best on the vigour front, relative to control varieties. It shows punchy growth in the autumn and keeps on growing right through that initial period, even when conditions get a bit marginal and other varieties slow up.”

The ability to get up and away quickly has advantages on the cabbage stem flea beetle front, but also in the battle against some perhaps overlooked pest issues, he believes. “We've actually seen some real benefits in minimising pigeon grazing too, ▶



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When market conditions favour higher prices for OSR, Voltage's combination of reliable high yields and good oil content could also maximise returns, says Sarah Hawthorne.

► which is an underrated yield-robber. Having a variety that keeps going and keeps moving is really important for minimising crop damage."

Stand-out feature

As well as its strong LLS resistance (7) and good vigour, the gross output potential is another stand-out feature of Voltage, with high performance particularly seen in the East and West regions. "Voltage's gross margin in both UK and East/West — combined with agronomic features optimised for modern low-input production — could make it a future game-changing choice," says DSV's Sarah Hawthorne.

"With a gross output of 108% of control in the key East and West region, oil content of 45.5%, TuYV resistance and the

highest LLS score of all new candidates, we believe Voltage is a near-perfect option for growers.

"There's also a gross output of 104.9% of control for the UK as a whole. Voltage's genetics, that we refer to as hybrid PNN (post-neonicotinoid), gives it exceptional autumn and spring vigour, and the LLS score of 7 makes it ideally suited for northern conditions."

Scores of 8.3 for lodging, 8 for stem stiffness and a relatively compact height of 158cm mean it will be a resilient variety able to withstand the range of growing conditions often experienced in the UK, she adds.

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Vouching for vigour

The need for an OSR variety with vigorous autumn growth seems to be a reoccurring trend at the moment, with demand from both growers and the seed trade, alike.

So is this a characteristic we could see represented on the RL in the seasons to come?

"There is a lot of interest in this from levy payers and we've been looking into it for a couple of years now," says Paul. "The tricky part is that everyone has a different view of what vigour is and how it should be measured. However, after consulting widely we have reached a point where we can start assessing a potential protocol for measuring autumn vigour in OSR."

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If it maintains its level of performance, Voltage could find itself at the top of the Recommended List, should it make recommendation, believes Jim Knight.

► could also maximise returns, adds Sarah. “At an OSR price of £320/t, every 1% of oil above 40% is worth around £6, so Voltage could add another £30 — £35/t to every tonne you produce.

“That’s the equivalent of adding almost another 0.5t of production if you’re achieving a yield of 5.0t/ha — something which Voltage has more than showed it is capable of in trials across the country this year.”

While it’s not unusual for the seed trade to eye up varieties from the Candidate List before they’ve finished testing, Voltage’s performance so far has made it worth jumping on to, according to Frontier’s Jim Knight. “Based on what we’ve seen to date, Voltage has an incredibly high yield potential, and if it maintains that level of performance, it could find itself at the top of the Recommended List, should it make recommendation.

“By picking out varieties with proven high performance before they’ve finished testing, it means we can put yield potential into the hands of growers as soon as possible.”

Though everything is pointing in the right direction, growing based on candidate data does bring an element of risk, says Dr Paul Gosling, who manages the RL at AHDB. “The risk with any candidate variety is that its published performance is based on a smaller dataset — just two years of National List trials. Sometimes a variety that looks good after NL2 looks less impressive once we have another year’s data from RL trials.”

Another stand-out feature for Jim is Voltage’s resistance to LLS. “This is a particularly important trait for growers in the North where LLS is more prevalent. While Voltage has good potential for sowing throughout the UK, we expect this LLS

Hybrids key in the struggle against the beetle?

While growers grapple for a CSFB solution, emerging evidence suggests that hybrids could have an advantage over conventional types when it comes to minimising crop damage, says Michael.

“In trials in marginal situations, there’s a clear difference being seen between the performance of hybrid and conventional varieties. Once you get past the initial establishment stage, the real benefits start to show, and in some scenarios, this makes the difference between actually

producing a viable crop or not.”

David agrees: “There is the argument that hybrid seed is expensive and increases establishment costs, but selecting something that is also very vigorous, like Voltage, can help offset the balance.

“We’re seeing some really strong hybrid material coming out of breeding houses and Voltage looks like it could be a market leading type, proving that the case for hybrid varieties has never been stronger.”

score to make it particularly appealing to a northern audience.”

Good autumn vigour

With CSFB burdens not showing any signs of relief, Voltage’s good autumn vigour could also help to ease some of the pressures, he adds. “Interestingly, DSV have trialed a wide range of sowing dates, which is quite unusual for Candidate OSR varieties. We’ve been lucky enough to get access to data for sowing dates ranging from 1 Aug to 15 Sept, and Voltage has been fairly robust through that whole window. It’s reassuring to know that there’s a variety out there that can be sown later if pressures dictate it,

because this will give growers more options and flexibility when making drilling decisions.”

While all looks good for this pocket-rocket variety, it’s fair to say that it’s slight stumbling point is within its phoma resistance score of 4, says Jim. “I think a compromise will have to be made, and it will depend very much on the individual farm pressures. However, after speaking with some of our northern agronomists, there’s a feeling that it’s perhaps more straight forward to control phoma rather than LLS and I think that quite a few people in Yorks and above will accept that trade off.”

Agrii’s David Leaper agrees and says if the LLS score and the phoma rating were

TuYV resistance at the forefront of priorities

Voltage’s TuYV resistance is one of the traits that sets it apart from competitors, and Sarah believes this is now an essential trait that growers are looking for when selecting a variety.

“Recent tests carried out in conjunction with NIAB and the University of Warwick suggest over 90% of UK oilseed rape now carries TuYV and yield losses attributed to this in Europe have reached as high as 30%.

“The *Myzus persicae* aphids that transmit the virus are increasingly difficult to control with AHDB research showing their numbers are rising and the proportion containing the virus is increasing too, so it’s a real problem.”

Breeding with TuYV resistance in mind has become so important, that in five years’ time, Michael reckons there won’t be a variety in the DSV portfolio that doesn’t benefit from the resistant gene. “TuYV resistance really is the crowning glory of Voltage.”

For ADM’s James Barlow, Voltage’s TuYV resistance is one of the key things that drew him to the variety, even in its early stages. “TuYV resistance — along with good autumn



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vigour — is the most important trait for us. In the varieties we market, this is something we’re really selecting for, and unless we need something for a specific purpose, I doubt there will be anything coming into our portfolio that doesn’t benefit from the resistant gene.

“OSR is a crop that needs nurturing, so this just helps to give it a helping hand before it’s even in the ground.”

the other way around, it might not be such a viable option for growers. "In all honesty, if the phoma score was the LLS rating, we wouldn't give it a second look. I think many people would be in agreement that it's better to opt for something with a high resistance to LLS, as phoma is, usually,

much easier to deal with."

While this may deter some of the worst effected growers, it can be managed, adds Michael. "In an ideal world, of course we'd like the score to be higher. But with that said, phoma is one of the most manageable diseases, so we see no reason why this challenge can't be overcome with an early fungicide treatment."

Despite its low phoma score, David and the team at Agrii have been so impressed by Voltage that it was fast-tracked into their mainline trials last year, he says. "We test around 80 varieties, but because Voltage did so well in the first year of the BSPB trials, we put it straight into our main testing last year.

"Based on the performance levels we've seen so far, we'll be looking to launch it as a commercially available variety this year."

While no one in the UK is growing Voltage yet, Simon believes it's a natural successor to fellow DSV variety, Incentive. "The pair share many similar traits such as high oil content, a stiff stem and strong scores for LLS. Voltage has a long pod-fill window and starts to flower earlier than some of the other varieties, but it doesn't finish filling its pods until slightly later.

And in terms of specific location, though



Based on the performance levels seen so far, Agrii is looking to launch Voltage as a commercially available variety this year, explains David Leaper.

there appears to be a yield advantage in the East and West regions, its consistency so far means it's suitable right across the UK, adds Mike.

"We believe that this, as well as its strong disease package is why Voltage is topping trials across the country." ■

Voltage at a glance

Yield (% treated controls)	
UK	105
East/West	108
Disease	
Light leaf spot	7
Stem canker	4
Turnip Yellow Virus (TuYV)	R
Agronomy	
Pod shatter resistance	R
Resistance to lodging	8
Stem stiffness	8
Earliness of flowering	6
Earliness of maturity	5
Height (cm)	158
Oil content (%)	45.5

Source: AHDB Winter OSR Candidate List (harvest 2020)

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