

Varieties to match a grower's needs

“The AHDB Recommended List will give you the numbers about a variety, but it doesn't describe its attitude.”

Technical OSR varieties

Yield is often far from the foremost consideration when choosing an oilseed rape variety. *CPM* asks Openfield's Lee Bennett for his top choices across a range of other criteria.

By Tom Allen-Stevens

Much is said about a variety's performance, and most of the conversation tends to hinge on yield. But it's fair to say that when it comes to choosing an oilseed rape variety, yield isn't necessarily uppermost in a grower's mind.

“All the important bits about OSR varieties are the subjective traits of their behaviour,” notes Lee Bennett of Openfield. “The AHDB Recommended List will give you the numbers about a variety, but it doesn't describe its attitude, and that's a key consideration.”

So we've taken six of these key areas and asked Lee his top picks in each and also asked him why.

Vigour

You won't see a score for vigour on the RL, but if you're in a cabbage stem flea beetle hotspot this may be the number one factor for you. It's not just about how the variety bursts out of the ground, though — varieties differ in their growth habit through both autumn and spring, and Lee reckons it's well worth taking this into account with your variety choice.

When it comes to putting on leaf in the autumn, Lee's clear on his current favourite: “DK Expedient is quite stand-out here. In terms of speed of development, it's in a class of its own,” he says.

“It's like DK Expower but with stiffer straw, and it performs a few percentage points better than DK Exalte. On top of that, you have RLM7+ (see later) for phoma resistance and pod-shatter resistance. I'd like to see a better light leaf spot score, but if it's all about get up and go in the autumn, you'll not do better than Expedient.”

That's not to say there aren't others that perform well here, however, and Lee has his close contenders. “DK Extrovert and Aquila are good choices, both with strong autumn growth. WRH527 (Darling) is currently in National List trials but looks very good for autumn growth.”

Autumn vigour is one of the key traits Dekalb claims it has been introducing across a number of its hybrid lines and the company's Will Vaughn-France reckons growers familiar with the DK growth habit will feel right at home with Expedient.

“In DK Expedient we're building on and improving the characters of DK Extrovert,” he says. “The variety combines rapid autumn growth for later or difficult drilling conditions with early spring development to ▶



Lee Bennett believes all the important bits about OSR varieties are the subjective traits of their behaviour.

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Butterfly's strong disease resistance shows in KWS' LLS disease nursery in Fife.

► escape pest pressure and early maturity features that characterised DK Extrovert. But it also improves the stem stiffness and gross output to increase economic output and assist easier management.”

For Lee, spring vigour is a slightly different consideration — not every variety with autumn strength puts on the same pace after Christmas, but the ability to pull away from pigeons and lay down canopy early in the year can be top of the list of requirements for some.

“Broadway shines here — once you get into the New Year, it's the conventional line that thinks it's a hybrid. It also has a stiff stem and you'd struggle to beat its LLS score.” Expedient also has good spring vigour, he notes.

DK Expedient at a glance

Variety type	RH
Region for which considered	E/W
Gross output in E/W (% control)	103
Oil content (%)	45.3
Resistance to lodging	8
Stem stiffness	8
Earliness of flowering	8
Earliness of maturity	6
Light leaf spot	5
Stem canker	8

Source: Winter oilseed rape varieties grown in RL trials 2017 but not added to the AHDB Recommended List

Disease resistance

Once a relatively minor consideration, disease resistance has ramped up in recent years as a key requirement for growers, notes Lee.

The two diseases seen as economically the most important are stem canker, characterised by phoma leaf spots seen in autumn, and light leaf spot (LLS) more commonly found in crops in the spring.

Stem canker is an important disease across the south of the UK and can be caused by two species of pathogen, *Leptosphaeria maculans* and *L. biglobosa*, according to AHDB. Cankers caused by the former are generally considered to be more severe, although autumn-applied triazole fungicides are more effective against it. The RLM7 (resistance to *L. maculans*) gene confers some protection, but plant breeders agree growers should look for both R-gene and quantitative resistance in a variety, termed RLM7+.

Traditionally a disease of the north of England and Scotland, LLS is now prevalent across the UK, and Crop Monitor figures suggest that in some recent years it's overtaken phoma canker as the biggest disease threat to OSR nationally. Unlike phoma that passes through only one life cycle each season, LLS is polycyclic and can require more than one fungicide application to keep it in check. What's more, there have been reports of reduced azole sensitivity, so varietal resistance is coming more to the fore.

“DK Extrovert is right out there in terms of disease resistance,” says Lee. “One variety I do like is Butterfly, which has a score of 7 for stem canker and 6 for LLS. There's been a lot of disease in crops this year, and Butterfly has looked cleaner all season than most.

“Having said that, there are a number of very strong-looking candidates worth keeping an eye on – DK Exstar for example has an 8 for each, with a stiff stem, but it's not currently available.”

Although recommended only for the northern region on the RL, breeder KWS is confident that conventional variety Butterfly has the qualities growers across the UK are looking for, says KWS' Julie Goult.

“It has very strong disease resistance, and it looks particularly good in our LLS disease nursery in Fife. The disease package coupled with its short stiff straw makes it an ideal choice for growers looking for a consistently reliable variety.”

Specialist traits

Two markets of interest here are HOLL (high oleic and low linolenic) varieties and HEAR (high erucic acid rape). Both types have niche markets for the particular qualities of the oil produced.

HOLL varieties offer end users an oil lower in saturated fats compared with conventional rapeseed, and it's also claimed to have superior frying qualities. Premiums of up to £25/t are available, while the yield penalty usually associated with the types was virtually eliminated with V316 OL, which now has a considerable share of the market.

HEAR oils have industrial uses and typically attract a £35/t premium, although the yield penalty is considerably higher.

Other specialist traits now available include resistance to turnip yellows virus (TuYV) and clubroot and semi-dwarf varieties. But Lee highlights Clearfield as a trait of real interest as it's now moving out of its niche status and into the mainstream.

The Clearfield trait confers resistance to imidazolinone herbicides and was discovered by BASF, who passed the toolkit on to breeders in 1992. It means Clearfield

Lee Bennett's choice of RL OSR varieties, at a glance

	Alizze	Aquila	Butterfly
Variety type	RH	RH	Conv
Scope of recommendation	UK	E/W	N
Gross output by region (% control)	105	105	106
Oil content (%)	46.0	45.6	45.7
Resistance to lodging	8	8	8
Stem stiffness	8	8	8
Height (cm)	155	158	150
Earliness of flowering	8	7	6
Earliness of maturity	5	5	4
Light leaf spot	7	6	6
Stem canker	5	8	7

Source: Winter oilseed rape AHDB Recommended List 2018/19



In terms of speed of development, DK Expedient (on left) is in a class of its own.

varieties can be safely oversprayed with post-emergence imazamox-based herbicides, highly effective on weeds such as charlock, runch, dead-nettle, cranes bill, cleavers and poppies.

All Clearfield varieties have the suffix 'CL' and market interest has risen as the yield penalty has closed, such that more than 10% of varieties harvested in 2018 will carry the trait, according to figures released by BASF and Dekalb.

"It's really Dekalb and DSV who

are leading the field here — Pioneer varieties are a little off pace at present," says Lee. "The one to note is Phoenix CL from DSV. What I really like is its standing power and get up and go — this is a very vigorous variety."

DK Impressario CL also gets Lee's approval. "DK Imperial CL has most of the Clearfield market and it's solid. Impressario is earlier with stiffer straw, higher yield and oil content, so it's Imperial-plus."

DSV calls Phoenix CL its "new star" and it's the ▶

Newcomers to note

There are a number of varieties currently rising up through the ranks of National Listing that Lee has his eye on as potential stars of the future.

OSR varieties tend to reach market somewhat faster than cereals simply because they don't have quite the same logistics when it comes to seed multiplication. That means there may be seed availability in the market before a variety has completed UK National List trials. Providing it's on the Common Catalogue for use in Europe, or has a pre-registration orange label, it can be sown commercially in the UK, under Defra's Animal and Plant Health Agency rules.

The advantage can be superior genetics, but the potential downside is that you're taking a punt on a variety with very limited UK data. WRH527 (Darling) is one

such variety, and Lee reckons it's one to watch. "It has DK Expedient's growth, but also has what DSV is calling triple layering — that's TuYV resistance on top of pod shatter and RLM7+," he says.

"It does well on LLS and has a good growth habit — this is a very exciting variety."

DSV calls it "the perfect sleep-well variety", specially bred for the maritime climate of the UK. "WRH527 (Darling) is the first of our new 'triple layer' varieties developed to provide new levels of crop security," says Sarah (see box on p49).

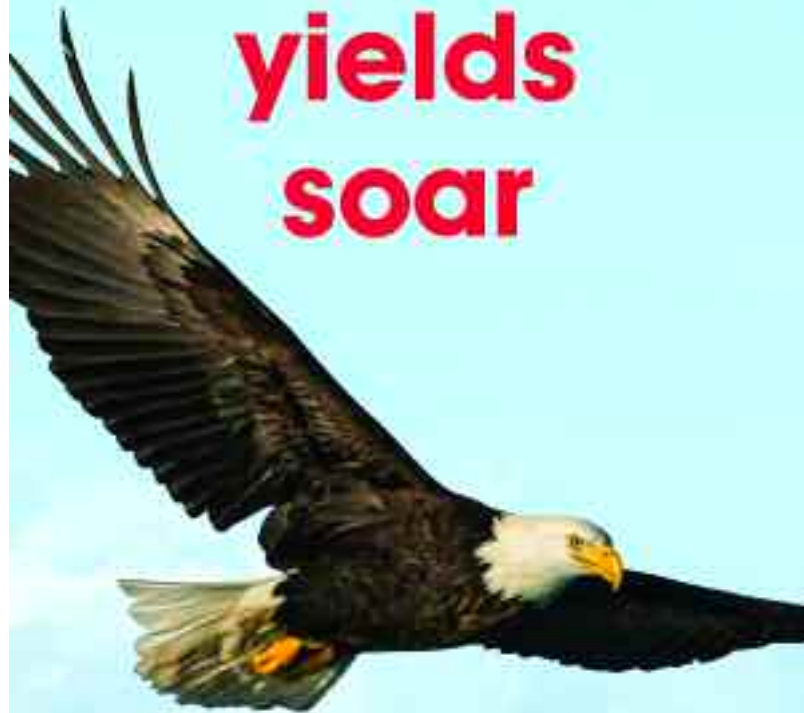
"Combining optimum levels of disease resistance and agronomic characteristics it produces consistent high outputs without the need for costly inputs. It's currently in NL trials with limited data, but looks very promising."



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Clearfield varieties (left) can be safely oversprayed with post-emergence imazamox-based herbicides, highly effective on weeds such as charlock (right).

► best-selling Clearfield variety the breeder has across Europe, adapting well to all conditions. “It’s a new generation high vigour Clearfield variety that has genuine yield parity with the best RL performers and features a great agronomic package too,” notes DSV UK’s Sarah Hawthorne. “In our UK trials, Phoenix CL has achieved yields of 106% of control and 6’s for LLS and stem canker resistance.”

Phoenix CL at a glance

Gross output (%)	106
Oil content (%)	46.5
Resistance to lodging	8
Stem stiffness	7
Earliness of flowering	6
Earliness of maturity	6
Light leaf spot	6
Stem canker	6
<i>Source: UK DSV trials</i>	

Standing ability

While vigour’s all very well, an OSR variety that can control its growth is prized by many growers. Standing ability is probably the key stand-out characteristic here, but there are a number of qualities Lee looks for in a variety that delivers measured growth and a well structured canopy.

“Alizze would be my variety of choice here,” he says. “It has a fantastic LLS score

– you can’t knock it — very high oil, stiff straw and it’s so consistent.”

The variety is the UK RL leader with good reason, he continues. “Whether you put it either side of Hadrian’s Wall, it works. It’s slightly slow in the autumn, so good for sowing early. But its spring behaviour is determinate — you can predict when it’s going to flower and it’s very uniform. Very few varieties get a UK recommendation, but farmers like this one.”

Breeder RAGT is relatively new on the UK OSR scene, although it draws in varieties from its well established pan-European programme. RGT Alizze is noted for its consistent performance across Europe, says the company’s Tom Dummett.

“It’s also consistently produced exceptional yields in its three years on the RL. It’s now the UK’s top variety, and even newcomers struggle to match its performance. RGT Alizze scores a solid 7 for light leaf spot resistance, has excellent vigour and a very stiff canopy, enabling it to perform across sites, soil types and seasons,” he notes.

Triple layering set to give oilseed rape a more functional future

New thinking in plant breeding has led DSV to introduce three new varieties at Cereals 2018 described as the first of a new generation of ‘triple-layered’ OSR varieties to be available in the UK.

“Triple layering refers to a combination of three specific agronomic properties designed to provide a new benchmark in disease and yield protection,” says DSV UK’s Sarah Hawthorne.

“All three varieties have RLM7+ phoma stem canker, TuYV and pod shatter resistance combined with extremely high yield potential. Whilst some varieties have had one or two of these properties, to date none have had the full set.”

The varieties are currently going through the UK testing system under code names, says Sarah.

“We’re hoping the first of these will make it on to the AHDB Candidate List this Dec making the concept a commercial reality for UK growers. We’ve also got some of them being grown in our own trials up and down the country.”

The new introductions are the product of a shift in focus from outright yield and oil content to greater agronomic functionality, she explains.

“Breeders have more or less hit a ceiling for outright yield in recent years so the real challenge has been to build added resilience into OSR so it can express its full potential in a greater variety of growing conditions.”

To some extent, the neonicotinoid ban was a wakeup call that triggered this. Defra figures showed the OSR acreage tumbled from 704,000ha in 2011 to 564,000ha in 2017, which for companies like DSV was real cause for concern.

“But while growers left OSR largely because of concerns about growing it without neonics, Defra figures show that the average yield was in 3.9t/ha in 2017 compare to 3.8t/ha in 2011 when neonics were used extensively.”

Average yields dipped as low as 2.8t/ha in 2013 but they have been recovering ever since, Sarah points out.

“Farmers are adaptable, management techniques develop and you could argue that if growers are now able to achieve the same yields without using as much insecticide and other costly inputs as before, then that can only be a good thing.

“If you take this thinking to the next stage and producers are able to access varieties with higher levels of genetic disease resistance and yield protection factors built in, then it makes a good situation even better and that’s where the mindset of our breeders has been in recent years.”

The new varieties are more ‘self-contained’ from an agronomic point of view, she says, anticipating the start of a future where growers will have less chemistry at their disposal but with crops required increasingly to be



Sarah Hawthorne sees growers using more ‘self-contained’ varieties in a future where they will have less chemistry at their disposal.

competitive on world markets.

This all points to large reductions in inputs, going hand-in-hand with advances in data management and precision farming to make production more efficient. “A foundation of stronger varieties dramatically less needy of agronomic intervention would be transformative,” notes Sarah.

This is the direction of travel for DSV, she concludes. “We hope to be building in other layers such as verticillium wilt tolerance and clubroot resistance in the future.” Building these traits into a multi-layered Clearfield variety is also a “real prospect”, she adds.



You can predict when Alizze is going to flower and it's very uniform.

All rounder

For some growers, there may not be a specific characteristic or trait they're looking for, but a variety that puts in a reliable performance with no weaknesses.

Lee's OSR of choice here is one that won't necessarily jump out from the RL. "Aquila is a Limagrain variety that has all the bells and whistles," he says.

"It has RLM7+ stem canker resistance and disease scores that match Extrovert, there's good growth in both autumn and spring, stiff straw, and it's high yielding. Aquila was added to the RL two years ago, and it's a variety ahead of its time."

Another one of note here is conventional variety Elevation. "You only have to look at Elevation when it's all podded up to see it has potential. The way

Mike Pickford breeds his lines is to build in yield components, and he's succeeded with Elevation. The variety sets all that potential on some stiff straw."

Aquila was bred and trialled in the UK, so is well adapted to conditions here, claims Limagrain senior breeder Dr Vasilis Gegas. "It's shown great consistency in performance across years and regions. On top of its high yield potential and oil content, Aquila also combines valuable genetic traits, such as early vigour, robust resistance to LLS and stem canker, as well as pod shatter resistance. These all help the variety achieve its full potential and provide another level of insurance to growers when the crop comes under pressure." ■



Added to the RL two years ago, Aquila was ahead of its time with all the bells and whistles.

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