

Making it to The List

BSPB

Selecting the optimum crop variety takes careful consideration, but who decides what's on offer in the first place? *CPM* takes a dive into the world of variety registration to understand the regulatory process.

By Janine Adamson

If your name's not down you're not coming in. Though rather than trying to enter an early 90s-style party, if a crop variety isn't on 'The List' it can't be marketed; simple.

Luckily for the British Society of Plant Breeders (BSPB), they're not nightclub bouncers in this scenario. Instead, chief executive Sam Brooke says their role is to support breeders and farmers to continue innovation and investment in the sector.

This includes championing the importance of variety registration and the regulatory process which underpins it. "For a variety to be marketed in GB and NI it must be on the GB and/or NI Variety List. It's a complex but safe, tried and tested system," she says.

"This process begins when a breeder submits a variety. It then has to undergo statutory testing followed by industry trials before seed can be produced for the market."

For combinable crops, official trials are conducted for a minimum of two years to test each candidate variety for characteristics which determine its distinctness as well as its value to growers

and end-users. These tests are known as DUS (Distinctness, Uniformity and Stability) and VCU (Value for Cultivation and Use).

Sam explains that for cereal crops, around 30 individual characteristics of the plant are inspected under DUS, whereas VCU is about providing assurance that only varieties with improved performance or end-use quality can be approved for marketing.

Performance testing

For VCU testing, which is undertaken by the BSPB itself, several trials are conducted to examine the performance of a variety compared with those already in the marketplace. Assessments are made for attributes such as yield, resilience, standing ability, ripening and plant height, as well as disease testing, which Sam says is key.

"These trials demonstrate that a variety meets the quality and performance standards required to be on the National List. Following this, it's common for some crop species to be further tested in industry trials across a variety of locations, to identify the best varieties for promotion to a Recommended or Descriptive List," explains Sam.

Many will already be familiar with the AHDB's Recommended Lists for Cereals and Oilseeds — a multi-million-pound project which scores and describes 11 different crop type varieties.

AHDB's Paul Gosling says the system selects the best from the National List based on yield, pest and disease resistance, agronomic qualities, and end-use potential. "The trials we undertake as part of a variety's entrance to the RL are a test of genetic potential to provide a level playing field and a fair comparison.

"This is based on a 'pyramid of selection' and three years' of data, gradually funnelling varieties down to what you see as an AHDB Recommended variety," he says.

Paul believes the RL empowers farmers

“It all exists for the right reasons – it's protection for farmers, consumers and the wider food chain.”

to select the most appropriate varieties for their individual system, while providing vital information for crop husbandry decisions. Whereas for breeders, he says it's an independent benchmark against competitors and promotes a culture of innovation.

RAGT's Lee Bennett says although the variety registration process is far from a cheap exercise from a plant breeder's perspective, it's essential. "It's expensive, ▶



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► highly competitive and there's no guarantee that what you put forward will make it though. A lot of work and preparation goes into selecting varieties before they've even begun the journey to registration," he says.

"But it all exists for the right reasons — it's protection for farmers, consumers and the wider food chain. It ensures that new varieties are unique and contribute something meaningful to UK agriculture, so as a result, RAGT fully supports it."

Lee believes that because farmers often have few opportunities to 'get it right' during their tenure, perhaps around 20 harvests, choosing the correct crop variety for

Forage Maize Descriptive Lists

Twelve new varieties have been added to the BSPB's 2024 Forage Maize Descriptive Lists (DL), which were published on 1 September.

For the Favourable First Choice List, Skipper and Foxtrot join from Limagrain, along with Faith, Emeleen, Crosby and ES Palladium from Grainseed, and SY Silverbull from Syngenta.

RGT Easixx and RGT Bluefoxx, KWS Resolvo, Glencoe and LG31207 (Limagrain) have been added to the Favourable Second Choice List.

Skipper, Faith and SY Silverbull also feature on the Less Favourable First Choice List, with Foxtrot, RGT Easixx, RGT Bluefoxx and KWS Resolvo added to the Less Favourable Second Choice List. LG31207 (has been added to the Very Favourable DL.

"The Favourable DL uses trial data from sites with the longest potential growing season with warmer spring soils for early establishment," says BSPB's Jeremy Widdowson. "Trial data from Less Favourable sites show the performance of varieties in shorter, cooler growing seasons.

"The Very Favourable DL is produced from specific trials sites where breeders choose to test later maturing varieties with

highest yield potential and are suitable for producers growing to maximise yield as a feedstock for anaerobic digesters where sites have a long growing season and very favourable conditions," explains Jeremy.

Of the new earlier maturing varieties, Faith is the highest yielding on the Favourable DL at 19.0t DM/ha, with a metabolisable energy (ME) yield of 222 kMJ/ha and a starch yield of 6.47 t/ha. Skipper and Foxtrot yield at 18.8 and 18.7t DM/ha respectively, with an ME yield of 221 kMJ/ha for Skipper and 222 kMJ/ha for Foxtrot. The starch yield for Skipper is 6.74 t/ha with Foxtrot at 6.54 t/ha.

Jeremy says based on limited data, all three varieties show some susceptibility to eyespot, so may be less suitable in damper growing conditions. ES Palladium is the highest yielding of the later maturity varieties at 19.4t DM/ha with an ME yield of 223 kMJ/ha.

One variety has been added to the Very Favourable DL — LG31207 which has a dry matter yield of 18.7t DM/ha with good ME yield which Jeremy explains is an important factor for achieving high biogas yields.

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* The highest wheat yield is 17.95 tonnes/ha (39572.97 lbs/ha) and was harvested from 8.2920 ha (20.49 acres) by Tim Lamyman (UK) in Louth, Lincolnshire, UK, on 10 August 2022. Data from Guinness World Records.

their scenario is imperative.

“You can’t change the seed once it’s in the ground and growing, bar taking the crop out completely and starting again. For some, making a mistake with variety choice could break their business; it’s people’s livelihoods at stake,” he says. “That’s why it’s so important to have regulation in place to provide protection for all involved.”

For milling wheat, there are even more tests to be undertaken, mainly to assist with assigning the Group ratings. Testing is carried out by the UK Flour Millers (UKFM) Varieties Working Group (VWG) — made up of the UK’s largest milling businesses along with Campden BRI.

Joe Brennan from the UKFM says this runs in tandem with the variety registration process, with controlled samples being sent to the VWG from sites across the country for testing at NL1, NL2 and RL stages.

“This means that when a milling variety joins the RL, there’s data available from three separate harvests to help understand its quality and its performance consistency. Laboratories assess the quality of the grain, flour and dough, as well as baking (for breadmaking wheat varieties only),” he explains.

“All results are collated and the VWG

meets to discuss the findings and agree a provisional rating.”

The ratings are as follows — UKFM Group 1 is best quality breadmaking, Group 2 is less consistent quality breadmaking, Group 3 is biscuit wheat and Group 4 is feed wheat/no particular milling quality.

Additional testing

Any potential Group 1 varieties have to undergo an additional stage whereby a commercial quantity is milled and baked before being tested by an independent laboratory separate to the VWG.

According to Joe, the Group system provides clarity to growers and merchants for the marketing of different varieties. He says its success is reflected in the significant proportion of homegrown wheat used by UK millers — currently 80-85%, compared with 30% in the 1970s.

Again, Lee supports the work. “This is another vital stage of governance and prevents false claims regarding bake performance. A variety has to deliver what it says it will and reflect its Group rating because this influences so much — from market choices to overall crop management approaches.”

All-in-all, Sam says it costs an average of



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£800,000 to breed a new variety, register it and undergo the associated testing before it can be grown on-farm. And although the system may be seen to show preference to large international breeding companies, it isn’t the case.

“The BSPB has no bias towards larger companies. From individuals and SMES through to multinationals, all are supported alike during the variety registration process,” she says. ■

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