

# Plant Breeding Matters

Information from the British Society of Plant Breeders

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## UPDATE:

# Encouraging start for new FAIR PLAY arrangements on older varieties

New arrangements for the declaration of older varieties as farm-saved seed were introduced from autumn 2007. *Plant Breeding Matters* reports on a positive start for the new system.

**B**y law, all previously 'zero-rated' varieties are now eligible for FSS payment and their use as farm-saved seed must be declared to BSPB. As part of the FAIR PLAY campaign, however, BSPB and the farming unions have agreed that these older varieties will continue to attract a 100% instant refund, subject to verification of genuine use of the declared variety.

The main objective is to discourage the false declaration of royalty-bearing varieties as zero-rated. This has been identified as a potential route for evasion of farm-saved seed payments.

Verifying genuine use of the declared variety is critical to the success of the



Keith Brown

new system. In November last year, BSPB appointed Keith Brown as full-time Farm-Saved Seed Investigator, with the primary task of ensuring that at least one in four

growers declaring previously-zero rated varieties are asked for verification – either through the original certified seed invoice, merchant transactions, seed sample or field inspection.

Six months on, overall declarations of previously zero-rated varieties received via processors and direct from farmers are down on previous years, and the process of verification is exceeding the original target of contacting one in four growers to nearer one in two. Keith Brown is pleased with the progress made, and encouraged by the response from growers.

"The new system has worked extremely well, with the vast majority of growers co-operating and understanding the need to provide evidence to support their declarations. Many growers have opted to submit paper-based records, such as the original merchant's invoice or agronomy advice sheets, but others have sent in seed samples for testing or arranged for on-farm

leaf samples to be taken. A number of growers have also opted to re-submit their declarations after acknowledging errors in their original forms.

"Overall I am confident that these new arrangements will achieve their stated objective, allowing genuine use of older varieties to continue free of charge, while increasing the risk of detection for those who break the rules," says Keith.



## FIVE WAYS TO DECLARE

Don't forget there are five ways to declare farm-saved seed use to BSPB, using the FSS reference number on your declaration form:

- By post (SAE provided)
- E-mail [sara.seekings@bspb.co.uk](mailto:sara.seekings@bspb.co.uk)
- Online at [www.bspb.co.uk](http://www.bspb.co.uk)

- Fax 01353 661156
- Phone 01353 653209



# Science at the heart of agriculture



The importance of science and technology in helping agriculture meet the challenges of global population growth, food security and climate change emerged as a central theme at this year's NFU Conference. Faced with the potential loss of half the world's arable land by 2050 due to water scarcity, salinity and drought, NFU President Peter Kendall highlighted the moral responsibility of countries less vulnerable to the impact of climate change, such as the UK, to maximise their agricultural potential. In particular, he singled out the need to ensure UK expertise in plant breeding is not allowed to run down. *Plant Breeding Matters* went to find out more.

"Within 40 years we must double – perhaps even treble – global food production, on less land and using less water, while at the same time addressing and mitigating the effects of climate change, and reducing the environmental footprint of agriculture.

I do regard it as a global challenge, and a responsibility we all share. I also believe it is a challenge which cannot be met without access to the most advanced developments in agricultural science and technology.

Advances in plant breeding have underpinned the successful development of arable agriculture in Britain. Access to new varieties, tailored to our unique growing conditions, has brought major improvements in the yield, quality and diversity of agricultural and horticultural crops.

Such progress does not happen by chance. It is the result of a strategic R&D pipeline, from the basic science taking place in universities and research institutes right through to the selection

programmes of commercial breeders and the agronomy advice delivered on-farm.

Today that pipeline is at risk, just when we need it most. Perhaps the dramatic gains in agricultural productivity seen in the second half of the 20th century fostered a sense of complacency about the future availability and affordability of food, but in recent decades the UK has progressively withdrawn public sector funding from production-based agricultural and biological research, instead diverting (significantly reduced) resources into risk assessment, agri-environmental and policy-related objectives.

The UK has an enviable track record as a world leader in plant science. But it is extremely worrying to me that in so many key areas our strategic research capacity is increasingly precarious, with huge uncertainty, restricted grants and a lack of new blood coming through.

That said, I am naturally optimistic and I believe there are definite signs of change. Headline coverage of increasing food prices and dwindling grain stocks has brought a new recognition that productive farming matters.

It is time to put science back at the heart of production agriculture. We need the pipeline from basic plant science to practical on-farm application to be strong. And it must include well-resourced advice, support and demonstration on the ground to ensure farmers get the most out of new technologies. To me, the science taking place in the lab is not much use unless it leads to something happening on my farm.

At the NFU's Centenary conference earlier this year, Gordon Brown became the first British Prime Minister since Harold Macmillan to highlight the importance of food security in the context of UK agriculture. His comments signalled a very welcome shift in focus, but must now be translated into meaningful action.

Regulators and policy makers need to understand that we cannot just switch on a tap for increased yields, disease resistance or stress tolerance when a crisis point is reached – it takes many years for new varieties and innovative technologies to reach practical application. The investment – in basic research, in translational science, in extension advice – must start now, and plant breeders have a critical role to play in that process."

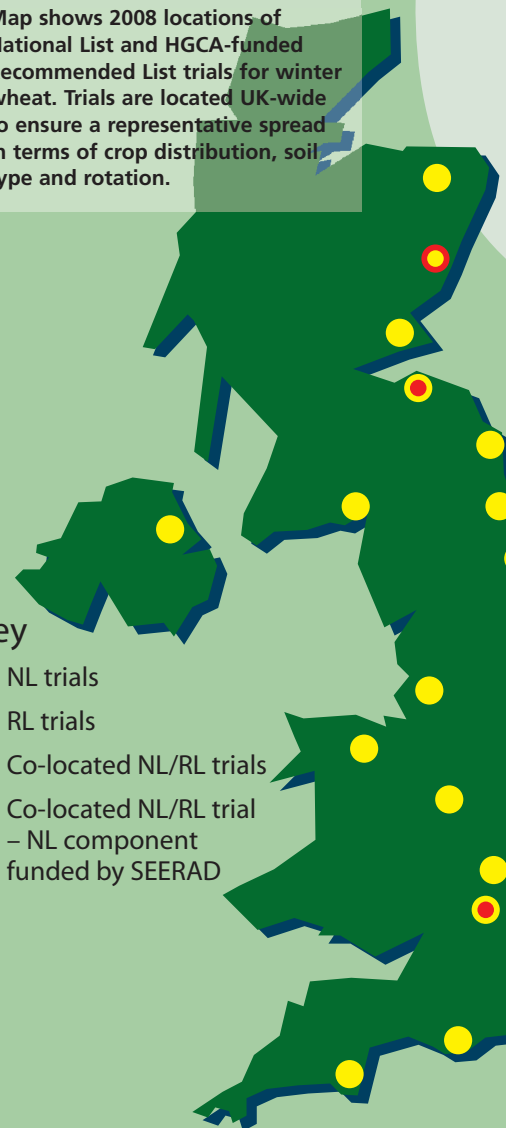
## BSPB's role

Since 2004, BSPB has played an increasingly significant role in variety trialling and evaluation, and now co-ordinates National List trials for virtually all crop species under official licence from the testing authorities. National List data provide an essential platform for further variety testing and evaluation, and through this process plant breeders fund around half the data used for Recommended List decisions. BSPB Trials Co-ordinator Robert Jackson explains.

Map shows 2008 locations of National List and HGCA-funded Recommended List trials for winter wheat. Trials are located UK-wide to ensure a representative spread in terms of crop distribution, soil type and rotation.

### Key

- NL trials
- RL trials
- Co-located NL/RL trials
- Co-located NL/RL trial – NL component funded by SEERAD



# in variety testing and evaluation



**BSPB Trials**  
Co-ordinator **Robert Jackson** has overseen the development of BSPB's role in co-ordinating UK National List trials. Robert grew up on an arable farm in Nottinghamshire, and studied agriculture at

Reading University. He took over the BSPB position in 2004, having previously worked as a trials officer for winter oilseed rape and sugar beet at Advanta Seeds.

Continued progress in plant breeding is vital for UK farmers to remain competitive, and the agricultural industry is always looking for new crop varieties with higher yields, improved quality, better disease resistance and agronomic traits. But for a new variety to be marketed commercially in the UK it must be included on the UK National List (NL) or EU Common Catalogue of varieties.

National List testing is a legal requirement which ensures that a variety can only be brought to market if it is deemed to be genuinely distinct from other varieties and a significant improvement over what is currently being marketed. To be added to the NL varieties must be proven to be Distinct, Uniform and Stable (DUS) and have satisfactory Value for Cultivation and Use (VCU).

Historically breeders have provided additional data for inclusion in the Recommended List (RL) and Descriptive List decision-making process, so it was a natural progression for BSPB to take on the VCU part of the NL trials programme when the official National Listing process was reviewed four years ago. BSPB took over responsibility for co-ordinating National List trials on a pilot basis in 2004, beginning with spring peas and oats. In subsequent years this was extended to cover all cereals, pulses and sugar beet varieties, followed by maize, oilseed rape and herbage. BSPB is now contracted by the official testing

authorities to carry out NL trials on all crop species with the exception of potatoes.

## Independent scrutiny

National List trials are either conducted by BSPB members or carried out under contract by testing organisations such as NIAB. All trials are subject to independent scrutiny by the testing authorities. The evaluation process itself is extremely rigorous, with trials grown across a range of geographical locations and many different characters assessed to check in-field performance and end-use quality against benchmark varieties. Independent analysis of all trials data is undertaken by external organisations.

Typically it takes two years of comparative trials such as these before a variety can be included on the NL. Only around 25% of varieties entered make it onto the NL.

## Improved efficiency

Restructuring the statutory National List system in this way has strengthened its technical relevance and compatibility with Recommended and Descriptive List protocols, while at the same time delivering cost-savings of over £1

million a year, by improving efficiency, removing duplication and reducing unnecessary red tape.

Data generated from NL trials also provide the basis on which Recommended List candidates are selected, and account for around half the data requirements to determine which varieties ultimately gain Recommended status.

## Funded by breeders

National List trials are operated on a full cost-recovery system, funded by breeders. The only additional outside support comes from Defra's continued funding of strategically important disease resistance testing. Defra and HGCA also fund jointly the UK cereal pathogen virulence survey. This disease survey provides an important early-warning system of value to farmers and breeders alike, and ensures that disease testing for National and Recommended Lists uses the most relevant pathogen races. With this exception the entire National List trials programme, and therefore half the data used for Recommended List decisions, is funded by the plant breeding industry.

## Adding value through variety evaluation

By Ben Mifflin, CEL Chairman

In surveys of UK cereals and oilseed levy payers, the HGCA Recommended List always comes at or near the top in terms of relevance and value.

Various estimates of this value have been made and suggest that careful use of the Recommended List can improve yields by up to 4% above a random choice from varieties that have been Nationally Listed.

Recently, HGCA commissioned Anderson Consultants to calculate a value, which was then checked with independent agronomists. The final agreed value was 41p/tonne based on a wheat price of £80/t. At current wheat prices this equates to more than 80p/t.

This value arises from various sources. It is absolutely dependent on the skill of plant breeders in choosing the parents of new crosses and the

early selection of new varieties from the offspring. Later generations are tested by breeders and then entered for the National Listing trials, funded by BSPB. This data is then used for selecting varieties into Recommended List Trials.

Finally, all of the data gathered is used to make recommendations. Other partners, involved in the production, trade and end-use of cereals and oilseeds, participate in the recommendation process. The data from millers, maltsters and distillers are essential for a market-focused RL.

As one industry group spokesman said of the RL; "Every sector puts something in, every sector gets something out. The collective benefit to the UK cereals and oilseeds industry is greater than the sum of its parts."



# New on-line FSS declarations save time and effort

BSPB has developed a simpler, more user-friendly format for growers wishing to submit their farm-saved seed declarations electronically.

The new on-line forms, available from this spring, will enable growers to register and complete their returns in a matter of minutes, using drop down menus to select from on-screen lists of crops, varieties and processors.

Sara Seekings, IP Enforcement Officer at BSPB, is urging growers to try out the new on-line system.

"Many farmers are now using computers for everyday business planning, record-keeping and communication. The new on-line system for farm-saved seed declarations has been re-designed to offer an easy, four-step process – removing the need for paperwork, form-filling and postage,

## Four steps to on-line declaration

Step 1 – Select cropping period

Step 2 – Enter personal details

Step 3 – Enter crops sown

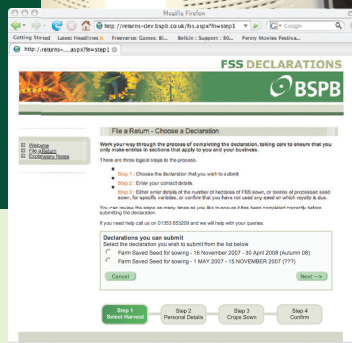
Step 4 – Confirm and return

and allowing growers to maintain electronic records of their returns.

"We have also removed the need for growers to contact BSPB for a password to make their declarations on-line. Under the new system, growers simply key in their unique farm-saved seed reference number and contact details to gain access.

"By enabling automatic data entry and invoicing, the new process will also improve BSPB's own efficiency in managing the farm-saved seed payment system, so further reducing administration costs and ensuring as much of the income received as possible can be re-invested in future breeding programmes," adds Sara.

Earlier this year, BSPB took the new system on-farm to gauge the response from a sample of growers. Adrian Peck, who farms at Dry Drayton in Cambridgeshire, was impressed with the result.



BSPB's Sara Seekings demonstrates the new on-line system to Adrian Peck

"It's a big improvement on the previous version, which was just an electronic copy of the paper declaration form. The new system allows you to work through each crop in turn, using drop down menus to select the right varieties, and automatically updating the return as each new entry is made."

"For me, the main benefit will be the time saved by simply clicking on a button to enter information rather than writing or typing it all out by hand. The new system also calculates the total farm-saved seed payment due, so there's no need to work through with a calculator cross-checking against a separate list and I know exactly how much is due before the invoice arrives," said Adrian.

The new on-line forms can be accessed via the farm-saved seed declarations section of the BSPB web-site at [www.bspb.co.uk](http://www.bspb.co.uk)

## BSPB supports new All-Party Group

BSPB is a founding sponsor of the new All-Party Parliamentary Group on Science and Technology in Agriculture, alongside the NFU, AIC, NIAB, CPA and abc.

Chaired by David Kidney, Labour MP for Stafford, the group held its inaugural meeting in March 2008, at which Lord Selborne and Dr Evan Harris MP were elected Vice-Chairs. To date the group has attracted more than 40 members from both Houses of Parliament.

Faced with a new agricultural agenda of climate change, population growth and sustainable development, the group will provide a dedicated forum for UK politicians and stakeholders not only to

debate the role of science and technology in addressing these challenges, but also to understand and highlight any policy, knowledge-based or regulatory barriers to their adoption.

Announcing the group's formation, David Kidney said:

"I am convinced that advances in science and technology are essential to help UK agriculture respond effectively to future production challenges. But I am also concerned that without a more balanced and informed debate, these goals may be missed, and opportunities for British farmers may be lost."



David Kidney MP chairs the new All-Party Parliamentary Group on Science and Technology in Agriculture



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