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Arable Horizons interactive lectures



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Watch the Farmers Weekly Arable Horizons lecture on YouTube. Presented in association with Syngenta, Dr Alison Bentley (below), Director of Genetics and Breeding at NIAB, gives her insight into '**Developments in crop breeding and genetics**', and their potential for future food production.



[Watch the Arable Horizons lecture on the Farmers Weekly YouTube channel here](#)

Broadcast live from Syngenta Jealott's Hill International Research Centre last Thursday (17th November 2016) and now available to watch on YouTube, it's a great opportunity for you to look into the future for the potential of plant breeding and productivity.

The narrow genetic base of bread wheat means that, with current breeding techniques, the potential for genetic gain has effectively hit a brick wall, reported Dr Bentley. That makes the case for new technologies and innovation more imperative than ever, she claimed.

"Genome sequencing, to understand the genetic instructions of a plant, has been an incredibly enabling tool for plant breeders," she said.

"We now know the wheat plant is incredibly complex, with its genome 6x larger than the human genome."

Once a gene can be associated with an identifiable phenotype, however, it can be tracked through the breeding process to make selection for any given trait faster and far more accurate, she explained.



The technology will also be crucial in the successful implementation of gene editing technology. Dr Bentley highlighted the capability was now readily available to snip DNA in in precise places to effectively remove the function of an unwanted gene. She cited products in the R&D pipeline could see OSR crops resistant to SU herbicides that would revolutionise weed control, for example, or wheat plants that would not be susceptible to powdery mildew.

"With gene editing we have the opportunity to adapt what is already there quickly and in a very controlled way, to deliver desirable traits in the field or for the market," advocated Dr Bentley.

However, she highlighted questions remained over the regulatory interpretation of the technique, and the public perception.

"It's a big challenge for scientists to put technically complicated methods into understandable dialogue," she said.

"Farmers have a role in shaping how we, as scientists, and how the public view gene editing in the future."



Introducing the lecture, Farmers Weekly Editor, Karl Schneider (above) said: "This is the first in our series of interactive lectures on some of the most exciting and innovative research set to revolutionise agriculture.

"Working with Syngenta we look forward to bringing the latest in science and technology to a wider audience across the farming industry in the future."

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