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DEKALB Technical Bulletin

SAFE HARVEST DELAY WITH DEKALB

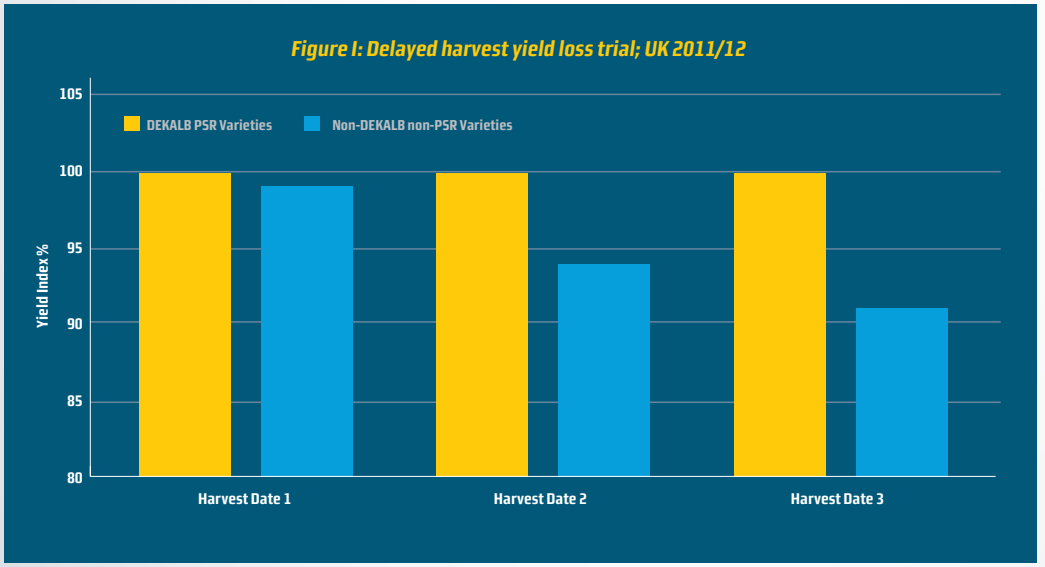
Pod shatter resistant DEKALB varieties are able to at least maintain their yield levels when harvest is delayed well beyond the optimal time while non-shatter resistant competitors suffer significant losses.

One of the main challenges in OSR production is the early shattering of the pods which leads to yield losses and also volunteers in the next season. Therefore, improving pod strength has been of great interest to scientists and breeders. Through the OGURA hybridation system DEKALB has succeeded to combine the shattering resistance from radish with oilseed rape and significantly lower the shattering susceptibility of germplasm.

In two field trials conducted in the 2011/12 season, the effect of a 7-day and a 14-day harvest delay on OSR yield in four pod shatter resistant varieties, DK Extrovert, DK Exstorm, DK Expower and DK Excellium, versus four non-shatter resistant competitors on the basis of yield data was tested.

Detailed statistical analysis shows that pod shatter resistant DEKALB varieties are able to at least maintain yield levels, with more varieties demonstrating yield increase, when harvest is delayed. In contrast, the four non-shatter resistant competitors suffer significant losses, with varieties showing yield losses of up to 15%. Across the two independent trials, the four non-shatter resistant competitors show an average yield level reduction compared with shatter resistant varieties of 6% and 9% after a 7-day and a 14-day harvest delay, respectively (Figure I).

Cultivation of shatter resistant DEKALB varieties helps protecting yield levels under presence of harsh weather condition in the run-up to harvest and if harvest is delayed (Picture I). In addition, DEKALB cultivation reduces yield losses when combining, lowers the volume of volunteers in stubble and following crops and reduces the green bridge for slugs and other pests.



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Picture I: Vast difference in shattering after a hail storm. Left strip; non-shatter resistant competitor and right strip; pod shatter resistant DEKALB variety.

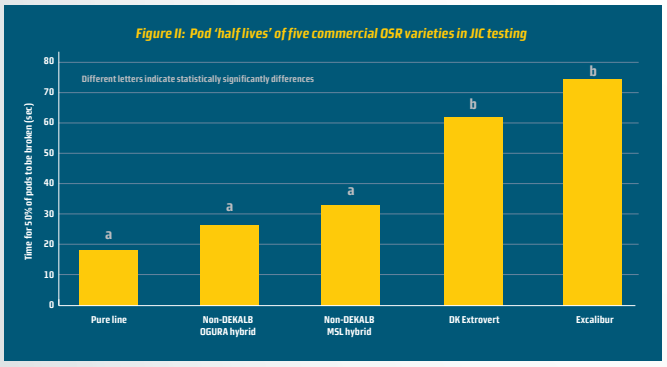
Strong DEKALB Pod Shatter Resistance Confirmed by John Innes Centre

Carefully-controlled testing by the John Innes Centre in Norwich has shown pods of DEKALB hybrids to be on average nearly three times as resistant to shattering as those of a pure line, non-DEKALB OGURA and MSL hybrids.

John Innes Centre's Random Impact Test (RIT); a test to determine pod strength reproducibly and reliably, to allow comparisons between lines to be made, have been used to determine the pod strength of five popular winter OSR varieties in a study including DK Extrovert, Excalibur, a pure line, a non-DEKALB OGURA hybrid and a non-DEKALB MSL hybrid.

The RIT technique involves automated shaking of pods in a cylindric container with metal ball bearings at a standard intensity (Picture II). After eight-second-intervals the percentage of broken pods are assessed allowing a 'decay' curve to be fitted for the broken pods of each variety. Using the curves, a half-life where 50% of pods are broken can be calculated and used for statistical analysis.

With DK Extrovert and Excalibur showing average pod breakage 'half lives' of 61.5 and 75.0 seconds, respectively, against 18.3, 26.4 and 32.8 seconds for the other three varieties (Figure II), these two DEKALB bred lines are concluded significantly stronger and more resistant than their competitors in the Random Impact Testing.



Picture II: Testing machine used at John Innes Centre to determine pod strength for five commercial OSR varieties.

For further information on DEKALB Hybrids email; dekalb.uk@monsanto.com, visit www.dekalb.co.uk or call the Technical Helpline on 01954 717575