



Building OSR Resilience (4)

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Shattering interest

Seed shedding in the run up to and at harvest is invariably a problem with oilseed rape. In most cases, its true extent only becomes apparent in forests of volunteers on land left uncultivated for several weeks after harvest.

Independently estimated to average as much as 15-20%, OSR shedding losses can become acute at 50-70% or more after summer storms as a number of eastern growers found to their cost last season. They can be similarly high where harvesting is unduly delayed by either the weather or workloads.

The risk of losses also frequently leads to earlier-than-ideal oilseed rape desiccation and harvesting. With each day of seed filling lost known to reduce yield by 1-2%, this can easily be responsible for a 10% yield penalty. And, since most oil is accumulated later in seed fill, early harvesting can seriously compromise oil content, not to mention crop marketing through red seed.

Quite apart from the loss of revenue, of course, seed shedding has major implications for volunteer OSR control in subsequent crops, every 100 kg/ha of seed lost being 2000 potential plants/m² to deal with in future management

“Solved by cereal breeding thousands of years ago, seed shedding remains a serious issue in oilseed rape,” stresses Professor Lars Østergaard, institute programme leader at the John Innes Centre.

“Our research into pod shattering led to the development of a proven random impact testing protocol. Employing it we have found pods of commercial varieties from the Dekalb breeding programme to be significantly stronger and more resistant to shattering than those of other hybrid and pure line varieties tested alongside them.

“It’s really encouraging to confirm such clear pod shatter resistance in modern varieties,” he stressed. “We know how important the character is and, after more than 10 years exploring its genetics, see it as having great potential to reduce seed losses, helping to make OSR yields more predictable and volunteers less troublesome.”

Early on in their development of the OGURA hybridisation system, Dekalb breeders became aware that the radish genetics it included could make a major contribution to overcoming the particular susceptibility of oilseed rape pods to shedding.

While selection for improved performance led this character to be lost in other breeding programmes, they were able to preserve a high level of shatter resistance in their parent lines, identify the genes involved and build upon them in variety development.

“As well as JIC’s random impact testing, the presence and value of pod shatter resistance in our varieties has been confirmed through independent laboratory measurements of the force required to open pods and a series of delayed harvesting field trials as well as extensive commercial experience,” pointed out Dekalb breeder, Matthew Clarke.

“Under notably low shedding conditions, for instance, trials have shown our shatter resistant varieties out-yielding non-resistant controls with the same yield potential by an average of 6% - or around 0.25 t/ha – following a seven day delay in harvesting.

“Other field trials have shown losses as low as zero from delayed harvesting with our most advanced genetics compared



to as much as 25% with non-resistant varieties alongside them.

“On average too, volunteer oilseed rape populations following the harvesting of shatter-susceptible varieties have been found to be 17 times higher than after our genetics,” Matthew Clarke explained. “As well as putting extra pressure on weed control in the succeeding crop, this provides a substantial green bridge for slug survival.

“Under these circumstances, it’s not surprising the pod shatter resistance we have pioneered is becoming so widely appreciated by growers.”

At Campney Grange Farm, Bucknall near Lincoln, pod shatter resistance is one of the first things Henry Moreton looks for in a variety.

“It gives you that extra confidence to hold off on your harvesting to bring in the biggest crop even if, like us, you don’t have a ‘fancy’ combine header,” he said. “You know you’ll harvest more if you leave the pods on the lower side branches to fill for a few more days. And you know your oil content is going to be up the fitter your rape is. But in the back of your mind there’s the worry that a lot of your seed could wind-up on the floor.

“Shatter resistant varieties take away this worry, helping to give us the across-the-farm performance consistency that’s the first priority in all our cropping.”

[Click here to find out more about our Pod Shatter varieties](#)