

Random Impact Based Test for Pod Shatter Tolerance

Pod shatter is a longstanding challenge for canola growers, causing yield losses at harvest lowering grower profitability.

Varietal selection is one of the simpler and easier decisions a grower makes but plays a pivotal role in guiding growers toward optimal crop choices and management practices. However, to this point the comparison of varieties for pod shatter resistance has been difficult as there has been no standard test used across Canola breeding companies.

Seed breeders, including Nuseed, are bringing new varieties to market with increasing levels of pod shatter tolerance. But unlike other agronomic characteristics such as Blackleg resistance, there is no industry standard test or rating systems for pod shatter tolerance.

In order to select canola varieties with the best tolerance, seed breeders need an accurate, consistent and repeatable test that is able to discriminate effectively between varieties with differing degrees of shatter tolerance. A variety of different screening methods have been used historically to classify pod shatter testing with varying degrees of success. Many of these methods are quick and indicative in-field methods or more labour intensive lab-based methods.

To address this, Nuseed's scientists have developed a random impact based testing methodology to help growers and their advisors compare canola varieties on their relative levels of pod shatter tolerance. This methodology will also assist the R&D team at Nuseed to select varieties with optimum levels of pod shatter tolerance for commercial release.

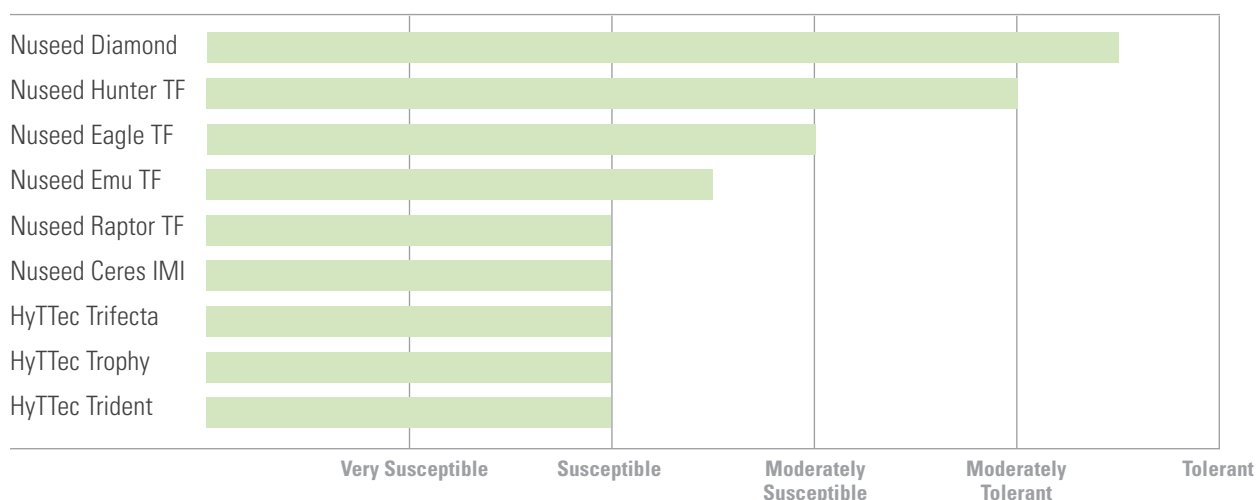


This methodology involves the following steps:

- 20 pods are harvested from a mature canola plant.
- Pods are pre-conditioned in an oven at 40° for 24 hours to standardise their moisture content.
- Pods are placed in a plastic container.
- 6 containers at a time are loaded in the Geno/Grinder®.
- Pods are shaken in a vertical up-down motion at 1000 RPM for 30, 60 and 90 seconds with shatter scoring after each time interval.
- Each 20-pod sample is scored according to the amount of seed loss that occurs after each time period.
- These scores are translated into a rating scale from Susceptible to Tolerant.

Through rigorous testing of this methodology, the scientists at Nuseed have developed an improved laboratory-based method for pod shatter tolerance classification that is higher throughput than the more labour-intensive lab-based methods, and delivers reliable data with a high degree of accuracy and reproducibility.

The following table shows the pod shatter tolerance ratings of Nuseed's current commercial portfolio:



Nuseed's development of a scientific methodology for rating canola varieties on pod shatter tolerance is a game-changer for the industry. It empowers both advisers and growers with the knowledge and tools needed to make informed decisions, minimize risk, and optimize canola production. This innovation not only addresses the challenges posed by pod shatter but also opens new horizons for sustainable and profitable canola farming. As the industry moves forward with this ground-breaking approach, the future of canola cultivation looks brighter than ever.

To learn more, go to www.nuseed.com/au/podshatter

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