

Quantitative determination of the strength of rapeseed pod dehiscence

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Abstract: Rapeseed pods are easy to shatter which causes yield loss during harvest, and the fragile pod of rapeseed is not suitable for mechanical harvest. Quantitative determination of the strength of rapeseed pod dehiscence is necessary for studying the mechanism of rapeseed pod shattering and breeding the shattering tolerance rapeseed varieties. A "ripping" method was developed to quantitatively determine the pod dehiscence strength. To conduct the comparison of different tests, six pods per variety were balanced in a chamber at temperature of 25°C and humidity of 50% for two weeks, then the pods were encircled with metallic thread at 2.5 cm to the pod base and stuck to a plate. Making the plate immobile, and moving the probe up to rip the pod, the maximal force that probe monitored was the pod dehiscence strength. Results of 47 varieties tests show that the pod dehiscence strength among *B. napus* varied greatly, so selecting the shattering tolerance rapeseed among *B. napus* for mechanical harvest was feasible. The "ripping" method for quantitative determination of the pod dehiscence strength has a potential value in rapeseed breeding and biological research.

Key words: quantitative determination; ripping method; pod dehiscence; rapeseed

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(本刊 王应宽 供稿)