Breeding and selection for faba bean seed quality

SHI YING YANG[1]
Samuel Catt[1] and Jeffrey Paull[1]

[1] The University of Adelaide

Global food production will need to continue to increase to meet the demand of the world's growing population. Faba bean (*Vicia faba* L*)* is one of the most important grain legume crops, for food and feed, both worldwide and in Austraia. It has the biggest seeds in the legume family,and its genome is the largest among legumes (13.4 Gb). Australian varieties occupy a significant share in international faba bean trade and the quality of the Australian varieties is generally well regarded. Usually, good quality faba bean seeds are consumed as food by humans and the lower quality seeds are used for animal feed or processing. The faba bean price is determined by both the seed quality and international supply and demand. With the faba bean price increasing dramatically last year to over $800 per tonne, even lower quality faba bean seeds were a valuable product. Hydration capacity, seed colour and 100-seed weight are among the most important quality traits that are tested in the faba bean breeding program. The seed quality data is combined with disease resistance and yield data for selection of breeding lines to progress to release as new varieties. The quality tests and selection have provided a valuable opportunity to generate the optimal use of resources and accelerate the improvement of faba bean breeding strategies.