

strongly influenced by how much seed reaches the bin rather than how much biological yield is formed before harvest. This makes synchrony of maturity, pod shatter management, and machine adjustment part of the variety's practical cultivation package.

7.3 Future improvement of variety performance

Future breeding priorities for cultivars like Qianjiang 661 are relatively clear even without exhaustive current data. First, stronger stability under delayed sowing would be especially valuable in rice-based systems, where the rapeseed season often begins under time pressure. Second, improved lodging resistance and a more machine-friendly canopy structure would further reduce operational loss. Third, clearer advances in oil quality and disease robustness would strengthen both market value and agronomic confidence.

It is also likely that future improvement will increasingly connect conventional field selection with molecular breeding tools. In rapeseed more broadly, genomic and SNP-based resources have already become important in breeding research and cultivar development. Even so, the practical target in a system like rice-rapeseed rotation remains the same: a variety that behaves reliably under operational constraints, not merely one that performs impressively in a controlled setting.

7.4 Future development of rice-rapeseed rotation systems

The future of rice-rapeseed rotation will depend on system integration. Variety improvement alone is not enough. Successful large-scale rotation requires aligned sowing and harvesting machinery, better drainage and field-turnover logistics, region-specific extension guidance, and seed systems capable of maintaining varietal purity while scaling supply.

The broader literature on sustainable agriculture suggests the same conclusion in more general terms: crop diversification and sustainable intensification work best when system elements are redesigned together rather than adjusted piecemeal (Gurr et al., 2016; Pretty, 2018). In the Chinese context, this means that the future of winter rapeseed in rice areas will likely be shaped by how well breeding, mechanization, extension, and regional policy are coordinated.

8 Conclusions and Perspectives

8.1 Main application advantages of Qianjiang 661

Qianjiang 661 can be understood as a practical rapeseed cultivar whose main value lies in agronomic balance and production fit rather than in any single extreme trait. Based on the evidence assembled in this review, its most important advantages are its apparent compatibility with rice-rapeseed calendars, its orderly field phenotype, its relevance to mechanized cultivation, and its usefulness in converting winter land from fallow to productive use.

8.2 Overall evaluation of promotion value

The promotion value of Qianjiang 661 appears strongest where rotation systems are tight, mechanization is increasingly necessary, and farmers need a cultivar that is dependable rather than merely impressive in isolated trials. The present evidence supports a positive but cautious evaluation. The variety looks commercially meaningful in Zhejiang and similar eastern Chinese rice areas, but the current public record is still stronger for applied demonstration than for broad independent comparative proof.

8.3 Future prospects for large-scale application

The future prospects of Qianjiang 661 are therefore promising under a realistic condition: promotion should continue to be matched with region-specific management guidance, stronger multi-location validation, and transparent performance data. If these elements develop together, the variety could become a useful component of rice-rapeseed rotation systems that aim to raise winter land-use efficiency, support farmers' income, and contribute to regional oilseed security.

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