RESULT IN BREEDING A NEW IMPROVED PROMISING LINE OF KHANG DAN 18 (DCG72) WITH SHORT GROWTH DURATION AND LOW AMYLOSE CONTENT

Pham Van Cuong, Nguyen Thanh Tung, Nguyen Quoc Trung, Nguyen Van Hoan

Summary

This study conducted to breeding new promising line using pedigree selection method from a crossing between Khang Dan 18 (KD18), a variety with diversity ecological adaptaiion and high yield and TSC3 with short growth duration and low amylose content of grain. In winter-spring season, 26 plants with total growth duration less than 100 days was selected from BC$_2$F$_2$ population. The next generation, 32 plants (BC$_2$F$_3$) with growth duration less than 110 days and individual grain higher than KD 18, were selected from 32 lines in spring season at Hanoi location. Then, 16 plants (BC$_2$F$_4$) with growth duration less than 100 days and individual grain yield higher than KD18, were selected in autumn season 2013 at both Thai Nguyen and Lao Cai location. Among 16 lines developed from 16 plants, 5 promising lines (BC$_2$F$_5$) with growth duration less than 100 days, good plant type and individual grain yield higher than KD18, were selected in winter-spring season in Soc Trang location. These promising lines were tested in three locations such as Gia Lam- Hanoi, Dai Tu- Thai Nguyen and Bat Xat- Lao Cai and the result manifested a promising line DCG 72-1-3-1 (DCG72) with total growth duration of 95 days in autumn season and 108 days in spring season, 14-23 days shorter than KD18, were selected. This promising line showed average grain yield (6.84 ton per ha) significantly higher than KD 18 (6.47 ton per ha), whereas grain amylose content (22.38%) much lower than KD 18 (28.48%).

Keyword: Rice promising line, short growth duration, low amylose content, pedigree selection.