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RESEARCH ARTICLE

Browsing for improved grain quality characteristics in rice hybrids developed from *indica* CMS lines and aerobic rice cultures

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SUMMARY

In the present study, 88 hybrids were evaluated under aerobic and flooded conditions, out of which 35 hybrids were identified for grain quality analysis based on single plant yield, grain type, and parental line flowering synchronization. The grains of 35 high yielding hybrids and their respective parents were subjected to grain quality analysis as per the procedures given in the standard evaluation system. The released rice hybrids ADTRH 1 and CORH 2 and the popular fine grain varieties ADT 43 and BPT 5204 were used as standard checks for effective comparison. Data were recorded for the following quality characters like milling quality traits, physical grain quality traits and cooking quality traits. The hybrid COMS 14A × IR 62161-184-3-1-3-2 was identified as the best hybrid since it recorded the highest total score followed by IR 68888A × IR 69715-72-1-3, IR 68888A × WGL 32100, IR 68897A × IR 72875-94-3-3-2, COMS 14A × IR 69715-72-1-3 and COMS 14A × WGL 14, COMS 14 A × IR55838-B2-2-3-2-3 and IR 68897 A × IR 71604-4-1-4-7-10-2-1-3. These hybrids had good scores for more number of quality traits such as milling per cent, head rice recovery, chalkiness, volume expansion, intermediate GT, soft gel consistency and amylose content. The parents of these hybrids also had higher total score for most of the quality traits. These hybrids with higher yield and good grain quality, can be exploited commercially for grain yield and quality improvement. The male parents *viz.*, WGL 14, IR 71604-4-7-10-2-1-3, IR 62161-184-3-1-3-2, IR55838-B2-2-3-2-3, IR 62030-54-1-2-2, PSBRC 82, IR 36,and female parents *viz.*, IR 68888A, IR 68897A and COMS 14A, with desirable grain quality had produced hybrids with superior grain quality. These parents could also be exploited further for developing heterotic rice hybrids with improved grain quality.

Key Words : Grain quality, CMS lines, Restorers, Rice hybrids

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