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Correlation and path analysis for assessing direct and indirect effects of grain yield with iron chlorosis in aerobic rice (*Oryza sativa* L.)

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Fifty promising genotypes along with three checks which were evaluated for yield and related components and screened for reaction to iron chlorosis to vertisol for this investigation. Nature of association among different yield attributes and their direct and indirect contribution towards yield. The analysis of variance revealed that there were significant differences among the genotypes for all the characters studied. Additive gene effects were predominant for characters number of effective tillers plant-1, number of filled grains panicle-1, number of unfilled grains panicle-1, gel consistency, flag leaf area, straw yield, grain yield plot-1 and grain yield plant-1.The genotypes PBNR 03-10, GK 5022, PBNR 04-28, TJP 148, R 2212-RF-75, CRR 596-8-1, BAU 408-05, PBNR 03-07, MAULS-15, PBNR 08-07, CRR 614-4-1, PBNR 08-04 and PBNR 03-20 showed tolerant reaction to iron chlorosis. The genotypes PBNR 03-07, PBNR 03-20, PBNR 04-28, PBNR 08-04, CRR 596-8-1, CR 3690-1-1, MAULS-15,R 1700-2240-4-2295-1, and UPRI 499-11-2-12-1 were having preferred level of grain quality parameters like intermediate amylose content and soft gel consistency. The maximum protein content was recorded in genotypes PAU 3832-79-4-3-1, UPRI 2012-16 and CB 09-513. Correlation revealed that plant height, panicle length, number of effective tillers plant^{-1}, number of effective tillers meter length^{-1}, flag leaf area, number of filled grains panicle-1 and 1000 grain weight had positive and significant association with grain yield plant^{-1}, however, significant negative correlation was recorded by days to 50% flowering, days to maturity, iron chlorosis reaction and number of unfilled grains panicle^{-1}. Whereas, path analysis indicated that number of effective tillers plant-1 had maximum positive direct effect on grain yield plant^{-1} followed by number of grains panicle^{-1}.

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