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IPSC 2019

INDIAN PLANT SCIENCE CONGRESS

January 23 - 25, 2019, Chennai

PROCEEDINGS



Venue : Dr. T.P. Ganesan Auditorium
SRM IST, Kattankulathur, Chennai, India

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Poster No: 70

Enhancing stigma exertion trait in rice CMS through DH approach

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Success of hybrid rice technology depends upon viable seed production and goodness of hybrid varieties etc. Low seed producibility (1.5-2.0 t/ha) in seed parent of three-line hybrid remains a concern and it restricts hybrid seed abundancy and area expansion in India. Stigma exertion trait is found to be major out-crossing determinant in rice. Hence, efforts were made to improve stigma exertion trait in CMS line CRMS 32A which involved in several hybrids as parent. Twenty-one doubled haploids (DHs) of maintainers (CRMS32B/RTN12B and CRMS32B/IR79156B) were developed having substantial extent of stigma exertion and maintainer ability were tested crossed with CRMS 32A. Amongst, DH 79 (derivative of CRMS32B/RTN12B) was found to be good maintainer (maintains 100% male sterility of WA and Kalinga-1 cytoplasm) having substantial out-crossing feature i.e. stigma exertion is converted into new CMS through recurrent back-cross breeding. The converted line, DH-79A having >45% out-crossing (without GA3) and good combining ability, thus, might be useful for enhancing genetic gain in rice hybrids with viable seed producibility *per se* hybrids rice area expansion.

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Poster No: 71

Genetic variability and correlation in different red amaranthus (*Amaranthus tricolor* L.) under water stressed conditions

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Amaranthus (*Amaranthus tricolor* L.) is the most popular and widely grown leafy vegetable in Kerala due to its attractive colour, taste and nutritional value. Ten genotypes of red amaranthus (*Amaranthus tricolor* L.) were evaluated to determine the genetic variability, degree of association between yield and its component characters under water stress condition. High heritability with high genetic advance was observed for leaf width, number of branches, yield plant^{-1}, protein content, fibre content and vitamin A which in fact demonstrated the presence of additive gene effects. Correlation studies revealed that strong positive correlation of yield under water stress condition with leaf width, number of branches, yield plot^{-1}, membrane integrity, proline content of leaves and vitamin A, and negative correlation with Petiole length and percentage leachate at both phenotypic and genotypic level. The study concluded that high proline content in leaves and membrane integrity with low percentage leachates might be the stress responsive mechanisms in red amaranthus to overcome water stressed conditions.

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