Entry No. IRRC-0375

Category	: International Rice Research Conference
Select Theme	: Genes for Hybrid Rice
Endorsement email	:
Genes for Hybrid Rice Keyword 1	: male sterile
Genes for Hybrid Rice Keyword 2	: EGMS
Genes for Hybrid Rice Keyword 3	: stamen and carpel traits
Title of Entry	: New Temperature Sensitive Genic Male Sterile Lines with desirable floral traits for hybrid rice breeding in Tamil Nadu, India
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Select only one type of presentation	: 3-5 minute flash talk
Abstract	: The two line breeding system utilizing thermo . sensitive genic male sterility (TGMS) is economically feasible as well as viable alternative to three line breeding. Evaluation of TGMS lines for floral and morphological traits is a pre requisite to find out commercially usable TGMS lines. An investigation was carried out to identify promising TGMS lines with desirable floral and out crossing related traits. A total of 73 TGMS lines were raised during summer 2012 for sterility confirmation during high temperature condition. Pollen sterility and desirable morphological and floral characters were studied for all the TGMS lines. Among the 73 TGMS lines, 43 TGMS lines were identified as promising based on their complete sterility, uniformity in plant type and floral characteristics. Stubbles of these TGMS lines are maintained and seeds were multiplied. These above TGMS lines were tested continuously and screened under sterility favoring environment for tgms gene expression during summer and sterility limiting environment during winter at Paddy Breeding Station, Coimbatore for the past five years. Out of 43 TGMS lines, 20 lines showed stable performance for sterility and thirteen TGMS lines viz.,TNAU 14 S, TNAU 15 S, TNAU 18 S, TNAU 19 S, TNAU 39S, TNAU 45 S, TNAU 50 S, TNAU 53 S, TNAU 60S, TNAU 61 S,TNAU 95 S, TS 29 100Gy, TS 29 150 Gy were identified as promising and utilized for the development of two line Hybrids. The TGMS lines showed higher panicle exsertion rate (> 85 percent), wide angle of glume opening (> 25o) and longer duration of glume opening which favours the out crossing potential. Further they had higher pollen sterility percentage, higher panicle and stigma exsertion percentage, higher anther length and breadth and sigma length and breadth. The identified promising TGMS lines were utilizedin

the hybridization programme for the development of two line hybrids and the developed two line hybrids are presently in advanced stages of evaluation.

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