3RD KENYA RICE RESEARCHERS FORUM SYMPOSIUM

Venue: **KARI Headquarter**

Date: **28th June 2012**

Time: **9.00 A.M**

Book of Abstracts

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Breeding & Genetics

High Temperature Compensation to Make Pgms Completely Sterile Under Short Day Length Growth Conditions

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Abstract

Frequent food shortages in Kenya will require adoption of new technologies to overcome it. In rice production, one main problem contributing to this is low yield per hectare, which can be increased by use of hybrid rice seed technology. Among the methods used to produce hybrid rice seeds is by use of Photosensitive genic male sterile lines (PGMS) and thermosenstive genic sterile lines. These lines contain genes which make them to be sterile in long day-light length and high temperature growth conditions. Thus male emasculation is genetic. The objective in this research was to increase the day-light length to 14hours and to raise temperature to above 36°C and 20˚C day and night respectively so as to induce complete sterility in the PGMS and TGMS rice lines. Two PGMS (V1PGMS, V3PGMS) and one TGMS (v2TGMS) rice lines were obtained from International Rice Research Institute (IRRI) and sown in greenhouse at Kari Mwea- Kimbimbi station. At premordial stage PGMS and TGMS were treated with long day length and high temperature. All the PGMS and TGMS grown under long day length and High temperature growth conditions recorded over 98% spikelet sterility indicating that they can be used as female parents during crossbreeding to produce hybrid seeds without risk of contamination by self bred seeds.

Key words: Rice, PGMS, TGMS, Pollen, spikelet sterility.

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