

Thanaporn Heathisong 2012: Selection of Salinity Tolerant and Photoperiod Insensitive Rice Lines from Induced Mutation of KDML 105. Master of Science (Genetics), Major Field: Genetics, Department of Genetics. Thesis Advisor: Professor Pradit Pongtongkam, M.S. 65 pages.

Seeds of M_5 generation of two salt tolerant and photoperiod insensitive KDML 105 mutant lines were grown and 6 hills of each line were selected. The 12 lines of M_6 generation were compared to the controlled KDML 105 using RCBD (randomized complete block design) with 3 replications. They were further self-pollinated to produce M_7 generation. Comparing the characteristics, the tillers/hill, panicles/hill, seeds/panicle, and yield/rai of these 12 M_6 lines were not statistically different from the controlled KDML 105. Four lines (K1, K3, K7, K9) from the 12 M_6 lines with strong tendency to have superior yield/rai were selected and these lines were DNA analyzed using AFLP with 15 pairs of primer. The results showed a total of 239 bands having 211 (88.33%) monomorphic and 28 (11.67%) polymorphic bands. They were also 86.66-88.33% similar in genetic composition to the controlled KDML 105.

Student's signature

Thesis Advisor's signature