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About Journal@rchive

Journal List

Journal/
Society Search

GO

News



Science Links Japan

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The Crop Science Society of Japan [Info](#) [Link](#)[TOP](#) > [Journal List](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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Mass Selection and Grain Yield of Improved Population in Pearl Millet (*Pennisetum typhoideum* Rich.)

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Abstract:

Mass selections for germination at low temperature, heavy grain weight and early heading were applied in a pearl millet population. Selection for short plant height was also applied by the ear-to-row method. Heritability estimated from the genetic gain were 0.26, 0.04 and 0.77 for germination, grain weight and heading, respectively. No genetic gain was obtained for plant height. Grain yield of original population (C0), population after one cycle of selection (C1) and two cycles of selection (C2) for early heading were compared. Yield was 371-511 gm⁻² for May planting and 164-239 gm⁻² for August planting. The population selected for early heading had more ears and a higher grain yield than C0. The difference between C1 and C2 was not significant. No significant interactions for traits studied between planting density and cycle of selections were detected.

Keywords:

Genetic gain, Genotype-environment interaction, Grain yield, Improved population, Mass selection

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