

Nateephat luangwilai 2014: Comparison of Kamphaeng Saen Sugarcane Varieties from Different Crosses to Nitrogen Fertilizer. Master of Science (Agronomy), Major Field: Agronomy, Department of Agronomy. Thesis Advisor: Associate Professor Rewat Lersrutaiyotin, D.Agr. 132 pages.

Sugarcane hybrids from different crosses under conditions of without and with nitrogen fertilizer were studied to evaluate the potential of hybrids and crosses under without nitrogen fertilizer. Split plot in RCBD with 3 replications having factor of without and with 50 kg./rai nitrogen fertilizer as main plot and 18 sugarcane hybrids from 6 crosses, each cross had 3 hybrids, as sub plot. Crosses of this study had 2 pairs of reciprocal crosses and 4 crosses having the same female parents. Each plot had 2 rows of 8 m. in length and spacing between row was 1.5 m. The results revealed that no significantly difference in cane yield, CCS and sugar yield were observed in sugarcane hybrids of without and with nitrogen fertilizer in every crosses and hybrids. However, potential in cane yield and sugar yield were observed in cross and hybrids of Kamphaeng Saen 94-13 and Kamphaeng Saen 01-8-8 under without nitrogen fertilizer condition, Sugar yield under without nitrogen fertilizer of this cross and its hybrid, Kamphaeng Saen 07-10-6, were observed to be 20.8 and 35.6 percentage higher than those under with nitrogen fertilizer. Even though, nitrogen fertilizer decreased sugar content, the level of effect was different depended no stage of sugar accumulation and method of measuring. Effect of no nitrogen fertilizer was observed to decrease stem diameter, but was observed to have tendency to have high stem length. In growth characters, cross of Kamphaeng Saen 94-13 and Kamphaeng Saen 01-8-8 also had potential in plant height, while hybrid of Kamphaeng Saen 07-10-3 had potential in stem number per rai. In leaf characters, significantly higher nitrogen content was observed under with nitrogen fertilizer than under without nitrogen fertilizer in 3 of 6 crosses, while level of greenish in leaf were about the same, except cross of Kamphaeng Saen 94-13 and Kamphaeng Saen 01-8-8.

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