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Effect of planting density and seeding date on the tiller occurrence, growth and yield of sorghum (*Sorghum bicolor* L.)

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Abstract

This experiment was conducted to investigate the aspect of tiller occurrence, growth and yield of sorghum according to planting density and sowing date. The subject of this experiment is to supply basic data to inhibit non-productive tillers uneconomical and cumbersome for mechanical harvesting. Also another subject was to evaluate optimum planting density and sowing date in central district area. Total number of tillers was more in 80 cm ridge than 60 cm ridge and it was increased as the planting distance was wider from 15 cm to 30 cm on the each ridge. Ratio of effective tillers was higher in 60 cm ridge than 80 cm ridge and it was decreased as planting distance was wider from 15 cm to 30 cm. The lower the planting density, the more increased total number of tillers, whereas effective tillers were decreased as planting density was high. Average of total number of tillers of three varieties was higher in sowing date of 2 May (1st sowing date), whereas ratio of effective tillers was the highest in sowing date of 23 May (2nd sowing date). Hwanggeumchal showed the highest total number of tillers (1.2 tillers), while Moksaksusu had the lowest total number of tillers (0.8 tillers) among three varieties. There were no significant difference between planting density and days to heading and ripening date from seeding. Culm length increased as planting density was high, but ear length, grains per ear and 1000 grain weight were decreased on the other hand. The highest yield of sorghum per 10a was obtained from 60×20 cm planting density among 6 planting densities.

Keywords: planting density, sowing date, tiller, sorghum, growth and yield

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