

Response of Local Cowpea to Intra Row Spacing and Weeding Regimes in Yobe State, Nigeria

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Abstract : Weeds are known to interfere seriously with crop growth, thereby affecting the productivity and quality of crops. Crops are also known to compete for natural growth resources if they are not adequately spaced, also affecting the performance of the growing crop. Farmers grow cowpea in mixtures with cereals and this is known to affect its yield. For this reason, a field experiment was conducted at Yobe State College of Agriculture Gujba, Damaturu station in the 2014 and 2015 rainy seasons to determine the appropriate intra row spacing and weeding regime for optimum growth and yield of cowpea (*Vigna unguiculata* L.) in pure stand in Sudan Savanna ecology. The treatments consist of three levels of spacing within rows (20 cm, 30 cm and 40 cm) and four weeding regimes (none, once at 3 weeks after sowing (WAS), twice at 3 and 6WAS, thrice at 3WAS, 6WAS and 9WAS); arranged in a Randomized Complete Block Design (RCBD) and replicated three times. The variety used was the local cowpea variety (white, early and spreading) commonly grown by farmers. The growth and yield data were collected and subjected to analysis of variance using SAS software, and the significant means were ranked by Students Newman Keuls test (SNK). The findings of this study revealed better crop performance in 2015 than in 2014 despite poor soil condition. Intra row spacing significantly influenced vegetative growth especially the number of main branches, leaves and canopy spread at 6WAS and 9WAS with the highest values obtained at wider spacing (40 cm). The values obtained in 2015 doubled those obtained in 2014 in most cases. Spacing also significantly affected the number of pods in 2015, seed weight in both years and grain yield in 2014 with the highest values obtained when the crop was spaced at 30-40 cm. Similarly, weeding regime significantly influenced almost all the growth attributes of cowpea with higher values obtained from where cowpea was weeded three times at 3-week intervals, though statistically similar results were obtained even from where cowpea was weeded twice. Weeding also affected the entire yield and yield components in 2015 with the highest values obtained with increase weeding. Based on these findings, it is recommended that spreading cowpea varieties should be grown at 40 cm (or wider spacing) within rows and be weeded twice at three-week intervals for better crop performance in related ecologies.

Keywords : intra-row spacing, local cowpea, Nigeria, weeding

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020