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Influence of planting method and plant density on grain yield of hybrid maize under field condition at South Sulawesi, Indonesia

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Maize is called king of cereals because of its productivity potential compared to any other cereal crop. Planting method is soil management tool which affect plant growth and yield. Optimum plant density of maize crop varies considerably depending upon climatic conditions of the growing area and fertility status of the soils. Maize is a plant with individual productivity, therefore, plant density determines yield significantly. Optimal plant density can be affected by the genetic properties and the given hybrid, just as by the conditions of the production area, by the extent of water and nutrient supply. Plant distance is an important factor for higher production and gives equal opportunity to the plants for their survival and best use of other input. A field experiment was conducted at Bajeng Experimental Station, South Sulawesi, Indonesia, during dry season 2016 by using pump to irrigated plant. The aim is to find out optimum population density and system of planting to enhance hybrid maize yield. Fifteen treatments of planting methods consist of 5 levels of population density (71.428 plants ha-1, 74.074 plants ha-1, 79.365 plants ha-1, 88.888 plants ha-1 and 95.238 plants ha-1) and two spacing methods (flat and twin) were compared. The experiment was conducted in Randomized Complete Block Design with three replications. Maize variety Bima-4 was used for the study. The experiment was planted on April and harvested on August 2016. The result of the experiment showed that the combination of twin spacing method (100-40 cm×15 cm) and population density of 95.238 plants ha-1 produced highest maize yield of 10.97 t ha-1.

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