EFFECT OF MULCHING AND SPACING ON SOIL MOISTURE, SOIL TEMPERATURE AND GROWTH OF EGGPLANT (SOLANUM MELONGENA L.)

OROKA, F.O.
Department of Agronomy, Delta State University, Asaba Campus, Asaba, Nigeria

ABSTRACT
The aim of this study was to determine the effect of mulching and spacing on soil moisture, soil temperature, growth and yield of eggplant (S. melongena). The experimental design was a 3 x 3 factorial scheme arranged in a randomized complete block design (RCBD) using three replicates. The first factor was mulching, consisting of three treatments namely; black polythene sheet, maize straw and a control. The second factor was spacing with plants sown at 60 cm x 25 cm (66,666 plants ha⁻¹), 60 cm x 50 cm (33,333 plants ha⁻¹), and 60 cm x 75 cm (22,222 plants ha⁻¹), corresponding to closer, medium and wider spacings. Plastic mulch conserved soil moisture more than maize straw and bare soil. Soil moisture showed a linear relationship with crop spacing. Soil temperatures were higher with plastic mulch and maintained at lower levels with medium and closer spacing. Tallest plants and maximum leaf area index were 247.33 cm and 25.15 respectively at 12 WAT from maize straw mulch. Highest numbers of fruits (128.33) and fruit weight per plant (2.50 kg) in eggplants were observed in maize straw. Plastic mulch was more effective in enhancing soil moisture and soil temperature while growth and yield components of eggplant were more enhanced by maize straw. Maximum growth attributes and yield were achieved with wider spacing of 60 cm x 75 cm (22,222 plants ha⁻¹). The study therefore recommends the use of maize straw mulch with spacing of 60 cm x 75 cm for optimum production of eggplant in the study area.

Keywords: Eggplant, moisture, mulch, straw, temperature
Correspondence: orkfra@yahoo.com