

Effect of Different Mulching Materials on Weed abundance, Growth and Yield of Okra (*Hibiscus esculentus*) Under Drip Irrigation

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Abstract

A field experiment was conducted to assess the weed control efficiency of different mulching materials in okra cultivation under drip irrigation. In addition to this, effects of mulching materials on the population of different weed categories such as sedges, grasses and broad leaves, their emergence at different growth stages of okra and influences on the crop growth and development as well as in yield of okra by the weed suppression, modification of soil temperature and soil moisture conservation were studied. TV₈ which is the most popular local variety among Jaffna farmers because of its higher consumer demand due in Jaffna local markets and Haritha were chosen as two varietal treatments and five mulch treatments such as *Gliricidia* leaves, chopped rice straw, mulch film, black polythene and unmulched treatment were arranged in a Randomized Complete Block Design (RCBD) with three replicates as ten treatment combinations. There was no significant ($P>0.05$) interaction between varietal treatment and mulch treatments. Mulching proved their effectiveness in weed control, ameliorating the soil temperature and soil moisture conservation (1.98%). Due to these impacts, mulches except black polythene improved the crop growing environment and resulted in increment of crop growth (14.85cm) and yield (13.62 ton/ha). Sedges, especially, *Cyperusrotandus* emerged highest in numbers and also showed highest weed dry matter, than broad leaves and grasses. The weed emergence was more prominent in vegetative phase and lower in both reproductive and harvesting stages of okra. The crop growth (129.20cm) and yield (14.03ton/ha) performance of Haritha was higher than TV₈. The usage of organic mulches was economically feasible compared to unmulched and plastic mulched cultivation. Cultivation of Haritha variety under *Gliricidia* leave mulch (14.88ton/ha) recorded the best results compared to other combination of treatments.

Keywords:

Grapes

Berries quality
Berries yield
Gibberallic acid