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Research
Note

Performance of fodder sorghum (*Sorghum bicolor* L.), maize (*Zea mays* L.) and cowpea [*Vigna unguiculata* (L.) Walp.] under sole and intercropping systems

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ABSTRACT

Field experiments were conducted during summer season 2007 to 2008 at college farm, Navsari campus on clayey in texture soils with different cereal-legume fodders under sole and intercropping systems for getting higher economics. The intercropping of sorghum with cowpea in a row ratio of 2:1 recorded maximum land-equivalent ratio (1.51), gross (Rs 60744/- ha⁻¹) and net (Rs 50031/- ha⁻¹) realization along with higher benefit: cost ratio (5.67).

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To meet the fodder requirement of huge livestock population in the country, it is hardly possible with present negligible area under forage crops. Availability of green forage to animals is the key to success of dairy enterprises and it is difficult to maintain the health and milk production of the livestock without supply of the green fodder. Availability of green forage to animals is the key to success of dairy enterprises and it is difficult to maintain the health and milk production of the livestock without supply of the green fodder. Green fodder not only helps for easy digestion, but also abundant quantity of the vitamin-'A' and important minerals like Ca and Fe in addition to energy for the animals. Another dimension is to reduce the cost of milk production. The present availability of green fodder is about 513 million tonnes projecting a deficit of 53 per cent and that of dry fodder is around 400 million tonnes against the requirement of 676 millions tonnes (Mukherjee *et al.*, 1998). Cereal-legume intercropping has been recognised as a beneficial system of crop production as well as is one of the potent means of better utilization of resources and higher fodder production per unit area per

unit time. Nimbalkar and Dombale (1983) observed that if certain crops are intercropped with sorghum the combined yield obtained from both crops may be higher without reducing the yield of the main crop. They further observed that sorghum intercropping with blackgram gave the highest monetary returns as compared to sorghum alone.

An experiment was conducted during summer season of 2007 to 2008 at the Farm of the College of Agriculture, Navsari, Gujarat. The soil of the experimental field was clayey in texture, medium in available nitrogen (259 kg ha⁻¹) and phosphorus (30.63 kg ha⁻¹) and fairly rich in available potassium (348 kg ha⁻¹) with pH 7.7. Total 9 treatments consisted of T₁: sole sorghum, T₂: sole maize, T₃: sole cowpea, T₄: sorghum + cowpea 1:1, T₅: sorghum + cowpea 1:2, T₆: sorghum + cowpea 2:1, T₇: maize + cowpea 1:1, T₈: maize + cowpea 1:2 and T₉: maize + cowpea 2:1 in RBD with three replications. The varieties GFS-5, African tall and EC-4216 were used as test crop, respectively for sorghum, maize and cowpea and were sown with 30 cm spacing in row proportion as per