

Response of Pearl Millet – Guar Mixture to Farmyard Manure Fertilization under Calcareous Soil Conditions

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TWO FIELD experiments were performed at Mariut Research Station, Desert Research Centre (DRC) during 2006 and 2007 growing seasons to study the effect of organic manure levels viz. 0, 10 and 20 m³/fed and the effect of five cropping patterns, *i.e.* Millet pure stand, Guar pure stand and millet/ guar (3:1), (2:2) and (1:3) patterns on some growth parameters, forage yield and chemical composition.

Results can be summarized as follow:

1. Increasing organic manure significantly increased number of tillers and leaves of millet plants. Moreover increased plant height, number of branches and number of leaves of guar plants. Fresh and dry yield of each pearl millet or guar plants significantly increased due to increasing organic manure as well as the accumulated yield.
2. Growing pearl millet with guar plants significantly increased number of leaves of guar plants than sole cropping while the increase of millet growth not reach to significant level under intercropping. Fresh and dry yield of millet insignificantly increased under cropping compared to sole cropping. While the reverse was for guar plants which decreased. Total mixtures as well as accumulated yield were increased.
3. Organic manure significantly decreased crude fiber percentage mixture while the reverse was for ash content of plants. Guar plants surpassed millet and other intercropping in its content of crude protein, crude fiber and ash content comparing to sole millet or different intercropping.
4. Interaction effect was superior for total fresh and dry yield under 20 m³/fed. Organic manure with intercropping (3: 1) M: G.

Keywords: Pearl millet, Guar. Crop patterns. Forage, Organic manures, Calcareous soils.

The newly reclaimed calcareous soils at west of Alexandria are about 100,000 ha. Great efforts have been undertaken to solve soils problems, *i.e.* hardness of soil surface, compaction of surface layer, less organic content, low availability of phosphorus and micronutrients, physical and chemical properties. One of such efforts depends on the application of organic manure, as a soil amendment which reduce crusting and high soil temperature in summer season. It also supply some essential nutrients to the growing plants over a wide range of pH which inturns