

Evaluating the Potential Organic Manure for Improving Wheat Yield and Quality under Agro-Climatic Conditions of Pakistan

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Abstract

Use of organic manures for crop productivity not only improve crop production but also improving soil physicochemical properties. It also reduces soil and water pollution by acting as chelating agent for inorganic nutrients. Keeping these things in view an experiment was carried out aiming the use of different organic manures for improving crop productivity and to select a potential organic manure that improve crop productivity compared to others. All the manures were applied at the same rate 5 tons ha⁻¹. The results revealed that all the wheat parameters were significantly affected by differences in nature of organic manures except days to emergence. Plots receiving Poultry manures has high Spikes m⁻² (274), Grains spike⁻¹ (60), more 1000 grain weight (42.287 g), high biological yield (11435 kg ha⁻¹) and high grain yield (3996 kg ha⁻¹). Similarly, Sheep manure had also great effect on wheat parameters such as higher emergence m⁻²(103), Tillers m⁻² (308), plant height (104.50 cm), Grains spike⁻¹ (60) and similar 1000 grain weight compared to poultry manures (42.200). Cattle and Farmyard manure were also

Days to emergence

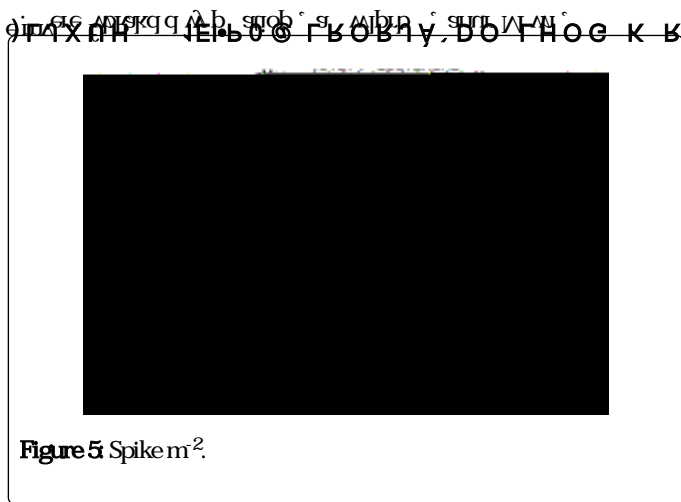


Figure 5 Spike m².

Thousand grains weight

Threshed seeds of each plot were collected and placed separately, thousand seeds were taken and weighed using electronic balance (Figure 6).

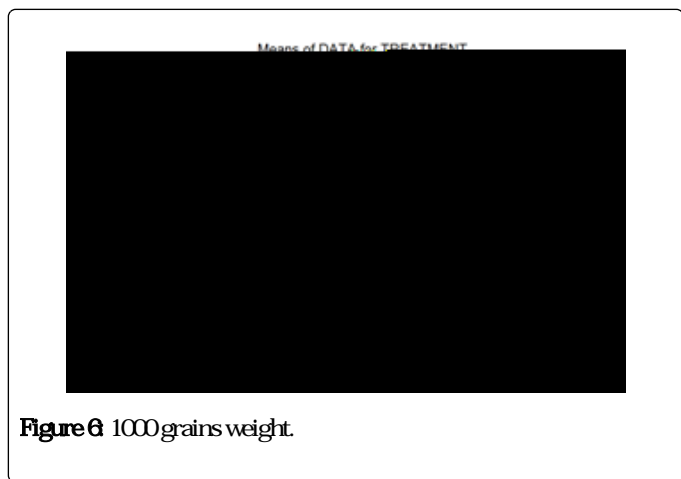


Figure 6 1000 grains weight.

Biological yield (kg ha⁻¹)

Randomly equal rows were harvested in each plot and then sundried and were weighed separately (Figure 7) and then converted into kg ha⁻¹ by using following formula

$$\text{Biological yield} = \frac{\text{Biological yield (kg)}}{\text{R-Length} \times \text{No. of Rows} \times \text{R-R distance}}$$

LR showed poor effect on seed emergence m² and were significantly different from all others. Tillers m² had showed greater response to sheep manure which is not significantly different than poultry manure followed by cattle manure and farmyard, legume residues had showed lowest response so tiller m². Organic manures improve nutrients uptake by providing ideal conditions for both microbial activity and to uptaking nutrients from soil [12,13] manures provide ample nutrients to plants that can improve growth parameters of wheat crops [14].

Treatments	Days to emergence	Emergence m⁻²	Tiller m⁻²	Plant height	Spikes m⁻²	Grain spike⁻¹
1	11a	102AB	294 B			