2022 February 18-19 Webinar

14th International Conference on

Biofuels and Bioenergy

Integrated Management of Compost Types, Phosphorus and Potassium on Oil Yield of Soybean under Semiarid Climate

Amanullah

The University of Agriculture Peshawar, Pakistan

Increase in population per unit area demand more oil and protein has increasing pressure on natural resources and environment. Sustainable crop production practices including nutrients management practices are important to increase crop productivity and sustainability. Two field experiments were conducted: (1) to study the impact of integrated use of compost types and phosphorus levels (0, 30, 60 and 90 kg P ha-1 with (+) and without (-) phosphate solubilizing bacteria (PSB); and (2) to study the impact of integrated use of compost types and potassium levels (0, 30, 60 and 90 kg K ha-1) with (+) and without (-) irrigation on oil and protein yields of soybean (Glycine max L. Merrill). The results revealed that sole application of poultry manure compost (6 t ha-1) or integrated use of poultry manure compost + cattle manure compost (3 t ha-1 each) improved both oil and protein yields. The increase in P and K levels resulted in higher oil and protein yields. Plots treated with PSB (+) was more economical in terms of higher oil and protein yields than without (-) PSB. Plots under irrigation (no moisture stress) had produced higher oil and protein yields than without irrigation (moisture stress) condition. We concluded from this study that application of highest P and K level (90 kg P ha-1) along with sole poultry manure compost (6 t ha-1) or combined (integrated) use of poultry + cattle manure composts (3 t ha-1 each) increase oil and protein yields of soybean under semiarid climates.

Key words: compost, phosphorus, potassium, phosphate solubilizing bacteria (PSB), water stress, oil yield, protein yield

amanullah@aup.edu.pk

Received: December 05, 2022 | **Accepted:** December 12, 2022 | **Published:** February 19, 2022