

Long Term Effect of FYM and Green Manure on Infiltration Characteristics Under Vertisol

Authors : Tripti Nayak, R. K. Bajpai

Abstract : An ongoing field experiment was conducted at Long term fertilizer experiment, Raipur, to study the Effect of fertilization (both organic and inorganic) on soil Physical properties (infiltration rate) of Vertisol of ten treatments viz. The treatment combinations for were T1(Control),T2(50%NPK), T3(100%NPK), T4(150%NPK), T5(100%NPK+Zn), T6(100%NP), T7(100%N), T8(100%NPK+FYM), T9 (50%NPK+BGA) and T10(50%NPK+GM). Farmyard manure and green manure is applied at the treatment of T8 (100%NPK+FYM) and T10 (50%NPK+GM). Result showed that the highest infiltration rate recorded T8(100%NPK+FYM) and T10 (50%NPK+GM). These considerations have led to a renewed interest in the organic manures such as FYM, compost and green manures, which are formulations helps in sustainable agriculture production either by providing plants with fixed nitrogen, available P or by other plant growth promoting substances. Organic matter (OM) is the life of the soil because it contains all the essential elements required for plant growth. It also serves as food for soil bacteria. Decomposed OM, known as humus, improves the soil tilth, quality and helps the plant to grow. In general among all the other treatments and control gave poorest infiltration rate. Incorporation of organic sources considerably improved the soil physical properties such as decrease in bulk density and increase in infiltration rate and available NPK status of the soil. Study showed that wherever, nitrogen was substituted through GM, FYM or crop residue (rice straw) in rice, Corresponding decrease in bulk density favorably enhanced the infiltration rate and it was found to be highest in the green-manured plot, FYM and lowest in control. Concluded that Continuous monitoring of physical properties should be carried out for maintaining soil health and enhancing the crop production.

Keywords : long term effect, FYM, green manure, infiltration rate, soil health, crop productivity, vertisol

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020