Management of Roi - et saline variant soil series on increasing yield of Physic nut

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Abstract

The management of Roi-et, saline variant soil series on increasing yield of Physic nut was conducted at Banphai district, Khon Kaen province from 2009-2011. The objectives were to study the effect of soil amendments on the chemical of soil and yields of physic nut variety 18/36.The experimental design was randomized complete block with 3 replications of 10 treatments were 1)control 2)chemical fertilizer 3)compost 2 kg/plant 4)compost 4 kg/plant 5)farmyard manure 2 kg/plant 6)farmyard manure 4 kg/plant 7)compost 2 kg/plant and bio-extract 8)compost 4 kg/plant and bio-extract 9)farmyard manure 2 kg/plant and bio-extract 10) farmyard manure 4 kg/plant and bio-extract respectively. The treatment 2-10 used chemical fertilizer 15-15-15 rate of 25 kg/rai and treatment 7-10 spraying by the bio-extract rate of 20 l/rai diluted 1:500 every month. The results showed that the effect of organic and chemical fertilizers on increasing growth rate of physic nut variety 18/36 but not significantly different with the control. The use of farmyard manure 4 kg/plant and chemical fertilizer 15-15-15 rate of 25 kg/rai and bio-extract showed highest physic nut yields of 325.81 kg/rai. For the chemical properties of soil showed that utilization of soil amendments resulted in increasing soil fertility i.e. organic matter 29.15-57.29%, available phosphorus 23.97-68.67% and available potassium 26.32-59.96% as compare to the control. While soil electrical conductivity (ECe) tended to decrease 41.94-85.81% but the variation was found due to the effect of salinity movement in the experimental area.

Keywords : Physic nut ; Roi-et ; saline variance ; soil series ; compost ; farmyard manure ; bio-extract