

# Enhancing potato (*Solanum tuberosum* L.) yield by using biological organic fertilizers and soil conservation practices on the slope andisol

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<b>Abstract</b>	The purposes of this research were to determine the influence of biological organic fertilizer (BOF), chemical fertilizer and methods of soil conservation to decrease soil erosion and to enhance potato yield. This study used 3 factors, first factor is P1 (20 tons chicken manure ha <sup>-1</sup> ), P2-P6 (20, 15, 10, 5 and 2,5 tons BOF ha <sup>-1</sup> ); second factor is K1 (1 ton ZA ha <sup>-1</sup> 250 kgs Phonska ha <sup>-1</sup> ), K2 (300 kgs Urea ha <sup>-1</sup> + 500 kgs SP-36ha <sup>-1</sup> ) 300 kgs KCl ha <sup>-1</sup> ) 200 kgs CaCO <sub>3</sub> ha <sup>-1</sup> ), K3 (1/2 K2 dose) and K4 (1/4 K2 dose) and third factor is LI (the same direction slope), L2 (10% angel to contour) and L3 (parallel with contour). The observed variables were potato yield, soil erosion and P uptake. The result showed the highest potato yield in L3was 16.33 tons ha <sup>-1</sup> . In the same BOF dose compared to chicken manure enhanced potato yields up 2 tons ha <sup>-1</sup> . Using of inorganic fertilizer with at K2or K3 or K4 add more potato yield 0.2 tons ha <sup>-1</sup> compared to inorganic fertilizer. The correlation between Potato yield and soil erosion was -0.99, while potato yield and P sorption was 0.76.
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