

**EFFECT OF TEA BAGASSE WASTE AND CHICKEN MANURE
FERTILIZER ON AGGREGATE STABILITY AND N IN VOLCANIC
ASH REGOSOL**

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ABSTRACT

Regosols have the potential to be managed as agricultural land, but have constraints on their fertility such as aggregate stability and low N nutrients. This study aims to determine the effect of tea bagasse waste and chicken manure fertilizer on aggregate stability and N in volcanic ash Regosol. This study used a potting system experiment with 2.03 kg of wind-dried soil arranged using a two-factor Completely Randomised Design (CRD), with the first factor being the tea grounds waste treatment consisting of 4 levels: 0 g/pot (A0), 7 g/pot (A1), 14 g/pot (A2), 28 g/pot (A3). The second factor is chicken manure fertilizer treatment consisting of 3 levels: 0 g/pot (P0), 23 g/pot (P1), 46 g/pot (P2), resulting in 12 treatment combinations, where each treatment combination was repeated three times and then incubated for 40 days. The final analysis after treatment consisted of BV, BJ, total porosity, polysaccharide, aggregate stability, C-organic, N-total, C/N ratio. Data were analysed using ANOVA at the 5% level, followed by DMRT test at the 5% level. The best treatment in increasing aggregate stability was the treatment with 28 g/pot of tea pulp waste without chicken manure equivalent to 36.4 tonnes/ha of tea pulp waste without chicken manure fertilizer (A3P0), while the best treatment for increasing N was the treatment with 14 g/pot of tea pulp waste + 46 g/pot of chicken manure equivalent to 18.2 tonnes/ha of tea pulp waste + 60 tonnes/ha of chicken manure fertilizer (A2P2).

Keywords: aggregate stability, chicken manure fertilizer, nitrogen, tea grounds waste, volcanic ash Regosol