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Productivity and Quality of Sweet Potato Leaves (*Ipomoea batatas*) as Animal Feed in Integrated System in the Abadoned Limestone Mining Site

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Abstract: The negative impact of the limestone mining activities is the formation of bare land which results in ecosystem changes to the limestone mountain. Changes in the ecosystem will reduce the productivity, quality and continuity of forage availability so that it can reduce the performance and development of goats farming in the limestone mountain areas. Therefore, it is necessary to utilize the abandoned-limestone mining site through an integrated system of livestock with sweet potato plants (*Ipomoea batatas*) as feed and forage sources. This study aims to determine the interaction effect between local sweet potato types and the level of goat compost fertilization on the productivity and quality of sweet potato leaves as small ruminants' feed. The study was conducted through an experimental method in bare land of abandoned limestone mining site applying factorial complete randomized design complete (CRD) with 3 replicates. The first factor was three types of local sweet potatoes namely purple (V), white (W) and orange (O); the second factor was fertilization levels of goat litter compost namely k1 (0.5 kg m^{-2}), k2 (1.0 kg m^{-2}), k3 (1.5 kg m^{-2}) and k4 (2.0 kg m^{-2}) fertilizations. The parameters measured were the productivity and quality of sweet potato leaves. The results showed that the productivity of sweet potato leaves was influenced by the type of sweet potato and the level of goat compost fertilization; the quality of sweet potato leaves was only affected by sweet potato types. Orange (O) sweet potato with a minimum level of goat compost fertilization of 1.5 kg/m^2 (15 tonnes/ha) (k3) was the suitable formula to be developed in former limestone mining areas.

Keywords: Goat compost, Sweet potato leaves, Limestone mountain