

PENGARUH PRAKTIK PERTANIAN ORGANIK DAN SEMI ORGANIK TERHADAP BEBERAPA SIFAT TANAH DI LERENG SELATAN GUNUNG MERAPI

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ABSTRAK

Aktivitas vulkanik memberikan kesuburan bagi lahan di lereng Merapi. Muntahan material dari erupsi Merapi mengandung banyak unsur hara. Kesuburan wilayah Merapi dimanfaatkan masyarakat lereng Merapi untuk menanam tanaman sayuran dan buah-buahan. Praktik pertanian yang dilakukan di lereng Merapi khususnya di lereng selatan Merapi umumnya berupa praktik pertanian semi organik, namun ada beberapa lahan yang praktik pertanian organik. Penelitian ini bertujuan untuk mengetahui pengaruh praktik pertanian organik dan semi organik terhadap beberapa sifat tanah di lereng selatan Gunung Merapi. Penelitian ini menggunakan metode survei, metode survei dilakukan untuk mengetahui kondisi wilayah penelitian. Lokasi penelitian pada praktik pertanian organik di Tani Organik Merapi (TOM), praktik pertanian semi organik 1 di Indmira dan praktik pertanian semi organik 2 di UPTD BP3MBTP Ngipiksari. Penentuan titik sampel dilakukan secara purposive berdasarkan praktik pertaniannya. Titik sampel pada praktik pertanian organik, semi organik 1 dan 2 sebanyak 9 titik sampel. Setelah itu dianalisis BV tanah, pH tanah, C-organik, KPK tanah, residu pestisida pada tanaman, ketersediaan hara N, P, K dan jumlah bakteri di dalam tanah. Hasil penelitian ini menunjukkan bahwa praktik pertanian organik mempunyai BV tanah $1,2 \text{ g/cm}^3$, pH tanah 7,36, KPK tanah $11,24 \text{ cmol(+)kg}^{-1}$, N tersedia 68,91 ppm, P tersedia 173 ppm, K tersedia 159 ppm, C-organik 2,06 %, jumlah bakteri $7,5 \times 10^5$ CFU/gram dan tidak ada residu pestisida di tanaman. Praktik pertanian semi organik 1 mempunyai BV tanah $1,18 \text{ g/cm}^3$, pH tanah 7, KPK tanah $9,13 \text{ cmol(+)kg}^{-1}$, N tersedia 65,74 ppm, P tersedia 96,6 ppm, K tersedia 62,33 ppm, C-organik 2,22 %, jumlah bakteri $1,65 \times 10^4$ CFU/gram dan residu pestisida di tanaman *methadation* 0,109 ppm dan *cypermenthrin* 0,0992 ppm. Praktik pertanian semi organik 2 mempunyai BV tanah $1,12 \text{ g/cm}^3$, pH tanah 6,84, KPK tanah $7,87 \text{ cmol(+)kg}^{-1}$, N tersedia 88,24 ppm, P tersedia 584 ppm, K tersedia 167 ppm, C-organik 2,43 %, jumlah bakteri $1,11 \times 10^4$ CFU/gram dan residu pestisida di tanaman *cypermenthrin* 0,4008 ppm. Praktik pertanian organik dapat meningkatkan pH tanah, KPK dan jumlah bakteri. Praktik pertanian organik tidak menggunakan pestisida sedangkan praktik pertanian semi organik menggunakan pestisida.

Kata kunci: *organik, semi organik, sifat tanah.*

THE INFLUENCE OF ORGANIC AND SEMI-ORGANIC FARMING PRACTICES ON SOME SOIL PROPERTIES ON THE SOUTHERN SLOPES OF MOUNT MERAPI

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ABSTRACT

Volcanic activity provides fertility for the land on the slopes of Merapi. The material from the eruption of Merapi contains many nutrients. The fertility of the Merapi area is used by the people on the slopes of Merapi to grow vegetable and fruit crops. Agricultural practices carried out on the slopes of Merapi, especially on the southern slopes of Merapi, are generally in the form of semi-organic farming practices, but there are some lands that are organic farming practices. This study aims to determine the influence of organic and semi-organic farming practices on several soil properties on the southern slopes of Mount Merapi. This research uses a survey method, the survey method is carried out to find out the condition of the research area. Research locations on organic farming practices in Tani Organik Merapi (TOM), semi-organic farming practices 1 in Indmira and semi-organic farming practices 2 at UPTD BP3MBTP Ngipiksari. Determination of sample points is carried out purposively based on their agricultural practices. Sample points in organic farming practices, semi-organic 1 and 2 as many as 9 sample points. After that, the soil BV, soil pH, C-organic, soil CEC, pesticide residues in plants, availability of N, P, K nutrients and the number of bacteria in the soil were analyzed. The results of this study showed that organic farming practices have a soil BV of 1,2 g / cm³, soil pH of 7,36, soil KPK of 11,24 cmol(+)kg⁻¹, N available 68,91 ppm, P available 173 ppm, K available 159 ppm, C-organic 2,06 %, the number of bacteria 7,5 × 10⁵ CFU / gram and no pesticide residues in plants. Semi-organic agricultural practices 1 have a soil BV of 1,18 g/cm³, soil pH 7, soil CEC 9,13 cmol(+)kg⁻¹, N available 65,74 ppm, P available 96,6 ppm, K available 62,33 ppm, C-organic 2,22%, bacterial count 1,65×10⁴ CFU/gram and pesticide residues in methodation plants 0,109 ppm and cypermenthrin 0,0992 ppm. Semi-organic agricultural practices 2 have a soil BV of 1,12 g/cm³, soil pH of 6,84, soil CEC of 7,87 cmol(+)kg⁻¹, N available of 88,24 ppm, P available 584 ppm, K available 167 ppm, C-organic 2,43%, number of bacteria 1,11×10⁴ CFU/gram and pesticide residues in cypermenthrin plants 0,4008 ppm. Organic farming practices can increase soil pH, CEC and the number of bacteria. Organic farming practices do not use pesticides while semi-organic farming practices use pesticides.

Keywords: *organic, semi-organic, soil properties.*