

**AKTIVITAS MIKROORGANISME TANAH PASCA
KEBAKARAN HUTAN DI KECAMATAN PALUPUH
KABUPATEN AGAM PROVINSI SUMATERA BARAT**

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ABSTRAK

Kebakaran hutan menyebabkan kerusakan ekosistem, terutama terhadap sifat biologis tanah. Kebakaran hutan terjadi di Kecamatan Palupuh yang berbatasan dengan Global Atmosphere Watch, lokasi pemantauan pencemaran udara. Penelitian ini bertujuan untuk mengetahui aktivitas mikroorganisme pada beberapa periode waktu setelah terjadinya kebakaran hutan. Penelitian dilakukan di Kecamatan Palupuh Kabupaten Agam dalam tiga periode waktu (12, 13, dan 17 bulan) pasca kebakaran hutan dan di Laboratorium Mikrobiologi dan Fitopatologi, Jurusan Hama dan Penyakit Tumbuhan, Fakultas Pertanian Universitas Andalas Padang, dari bulan Januari sampai Mei 2021. Ordo tanah di lokasi penelitian adalah Inceptisol. Penelitian dilakukan dengan metode survei dan pengambilan sampel tanah dilakukan pada setiap periode waktu (purposive sampling) pasca kebakaran pada kedalaman tanah 0-20 cm dan 20-40 cm. Sampel tanah juga diambil dari hutan yang tidak terbakar. Parameter yang dianalisis meliputi pH tanah, C-organik, N total, rasio C/N, P total, total populasi mikroorganisme, respirasi mikroorganisme, dan biomassa C-mikroba. Hasil analisis dan pengamatan menunjukkan bahwa total populasi bakteri berkisar antara 6,0-7,2 CFU, sedangkan total populasi jamur sekitar 5 CFU. Berdasarkan data yang dihasilkan, dijelaskan bahwa aktivitas mikroorganisme meningkat seiring dengan bertambahnya lamanya hutan pasca kebakaran. Namun kebakaran hutan tetap menyebabkan jumlah populasi mikroorganisme, respirasi mikroorganisme pada semua periode waktu pasca kebakaran hutan menurun. Hal ini disebabkan karena kematian mikroorganisme dan pembakaran bahan organik yang merupakan sumber energi bagi mikroorganisme. Oleh karena itu, kebakaran hutan menyebabkan rendahnya aktivitas mikroorganisme tanah.

Kata Kunci: aktivitas mikroorganisme, pasca kebakaran hutan, respirasi mikroorganism, total populasi mikroorganisme

SOIL MICROORGANISM ACTIVITIES POST FOREST FIRE IN PALUPUH DISTRICT, AGAM REGENCY, WEST SUMATERA PROVINCE

ABSTRACT

Forest fire causes damage to the ecosystem, especially to soil biological properties. Forest fire was occurred in Palupuh Subdistrict which is adjacent to Global Atmosphere Watch, a location to monitor air pollution. This study was aimed to determine the activity of microorganisms at some periods of time after the occurrence of forest fire. The study was conducted in Palupuh District, Agam Regency in three time periods (12, 13, and 17 months) post-fire forest and at the Microbiology and Phytopathology Laboratory, Department of Plant Pests and Diseases, Faculty of Agriculture, Andalas University, Padang from January to May 2021. The soil order in the research site is Inceptisol. The research was conducted using survey methods and the soil was sampled in each time period (purposive sampling) of the post fire at 0-20 cm and 20-40 cm soil depth. Soil samples were also taken from unburnt forest. The parameters analyzed consisted of soil pH, organic-C, total-N, C/N ratio, total-P, total population of microorganisms, respiration of microorganisms, and C-microbial biomass. The results of the analysis and observation showed that the total population of bacteria ranged from 6.0-7.2 CFU, while the total population of fungi was around 5 CFU. Based on the data resulted, it was explained that the activity of microorganisms increased along with the increase in the duration of the forest after the fire. However, the forest fires still caused the total population of microorganisms, the respiration of microorganisms in all periods of time post forest fire decreased. This was due the death of microorganisms and the burning of organic matter which is a source of energy for microorganisms. Therefore, forest fire caused low activity of soil microorganisms.

Keywords: microorganism activity, post forest fire, microorganism respiration, total microorganism population