

**KAJIAN AKTIVITAS MAKROFAUNA TANAH PADA LAHAN
SAWAH POKOK MURAH DAN SAWAH KONVENSIIONAL
DI NAGARI BALAI GURAH KECAMATAN AMPEK
ANGKEK KABUPATEN AGAM**

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KAJIAN AKTIVITAS MAKROFAUNA TANAH PADA LAHAN SAWAH POKOK MURAH DAN SAWAH KONVENSIONAL DI NAGARI BALAI GURAH KECAMATAN AMPEK ANGKEK KABUPATEN AGAM

ABSTRAK

Penggunaan pupuk anorganik dan pengolahan tanah secara intensif pada sistem sawah konvensional dapat menurunkan kualitas biologis tanah, sehingga diperlukan sistem budidaya yang lebih berkelanjutan. Salah satu alternatif yang mulai diterapkan adalah sistem Sawah Pokok Murah yang mengutamakan pengurangan penggunaan pupuk anorganik dan pengelolaan tanah yang lebih ramah lingkungan. Penelitian ini bertujuan untuk mengkaji aktivitas makrofauna tanah pada lahan Sawah Pokok Murah dan Sawah Konvensional di Nagari Balai Gurah, Kecamatan Ampek Angkek, Kabupaten Agam. Penelitian menggunakan metode *purposive random sampling*. Pengamatan makrofauna dilakukan dengan metode *hand sorting*, sedangkan analisis tanah meliputi pH, C-organik, suhu, kadar air, dan respirasi tanah. Hasil penelitian menunjukkan bahwa Sawah Pokok Murah memiliki kondisi biologis tanah yang lebih baik dibandingkan Sawah Konvensional. Populasi makrofauna pada Sawah Pokok Murah mencapai 11 individu per lapisan monolit, sedangkan Sawah Konvensional hanya 4 individu. Kandungan C-organik pada Sawah Pokok Murah (3,11%) lebih tinggi dibandingkan Sawah Konvensional (2,26%), demikian pula respirasi tanah masing-masing sebesar 34,53 dan 32,92 mgCO₂/m²/hari. Makrofauna didominasi oleh Clitellata (cacing tanah). Penerapan sistem Sawah Pokok Murah selama tiga musim tanam menunjukkan potensi meningkatkan kualitas biologis tanah.

Kata kunci: makrofauna tanah, Sawah Pokok Murah, sawah konvensional.



Study of Soil Macrofauna Activity in the Low-Cost Rice Farming System and Conventional Rice Farming System in Balai Gurah Village Ampek Angkek District Agam Regency

ABSTRACT

The intensive use of inorganic fertilizers and intensive tillage practices in conventional rice farming systems can reduce soil biological quality. Therefore, a more sustainable cultivation system is needed. One alternative that has recently been introduced is the Low-Cost Rice Farming System, which emphasizes reducing the use of inorganic fertilizers and adopting more environmentally friendly soil management practices. This study aimed to evaluate soil macrofauna activity in the Low-Cost Rice Farming System and the Conventional Rice Farming System in Balai Gurah Village, Ampek Angkek District, Agam Regency. The research employed a purposive random sampling method. Soil macrofauna were observed using the hand sorting method, while soil analyses included pH, organic carbon, temperature, moisture content, and soil respiration. The results showed that the Low-Cost Rice Farming System exhibited better soil biological conditions than and the Conventional Rice Farming System. The macrofauna population in the Low-Cost Rice Farming System reached 11 individuals per monolith layer, where as only 4 individuals were found in and the Conventional Rice Farming System. Soil organic carbon content was higher in the Low-Cost Rice Farming System (3.11%) than in and the Conventional Rice Farming System (2.26%), as was soil respiration, with values of 34.53 and 32,92 mgCO₂/m²/hari, respectively. The macrofauna community was dominated by Clitellata (earthworms). The implementation of the Low-Cost Rice Farming System for three consecutive cropping seasons demonstrated its potential to improve soil biological quality.

Keywords: soil macrofauna, Low-Cost Rice Farming System, conventional rice farming