INTISARI

EVALUASI KUALITAS TANAH, PERTUMBUHAN, DAN HASIL PADI ‘MENTHIK WANGI’ PADA SISTEM SAWAH ORGANIK, TRANSISI DAN KONVENSIONAL

INTISARI

Penggunaan pupuk dan pestisida kimia sintetik pada sistem budidaya padi bersifat tidak berkelanjutan dan menyebabkan penurunan produksi sehingga berkelanjutan yaitu pertanian organik. Konversi sawah konvensional menjadi sawah organik perlu melalui tahapan transisi. Penelitian ini bertujuan untuk mengevaluasi secara komprehensif perubahan yang terjadi pada suatu lahan yang dikonversi menjadi lahan organik meliputi sifat-sifat dan kualitas tanah sawah, serta pertumbuhan dan hasil tanaman padi. Penelitian ini menggunakan lima jenis sawah yaitu sawah konvensional, transisi I, transisi II, transisi III dan organik untuk mensimulasi proses konversi lahan organik. Hasil penelitian menunjukkan terjadi perbaikan sifat-sifat tanah dan peningkatan kualitas tanah yang mampu mendukung pertumbuhan tanaman padi pada sistem transisi dan organik. Peningkatan kualitas tanah dapat mendukung pertumbuhan padi pada sistem transisi dan organik sehingga mendekati pertumbuhan padi konvensional yang dibuktikan dengan berat kering tanaman, laju asimilasi bersih dan laju pertumbuhan tanaman yang tidak berbeda nyata pada semua sistem sawah. Sistem transisi dan organik belum mampu menyamai sistem konvensional namun sistem organik mampu meminimalkan terjadinya penurunan hasil hingga hanya sebesar 9,50% dibanding sistem konvensional.

Kata Kunci: Konversi Organik, Sistem Sawah, Pertanian Berkelanjutan

EVALUATION OF SOIL QUALITY, GROWTH AND YIELD OF PADDY MENTHIK WANG' WITHIN ORGANIC, TRANSITIONS AND CONVENTIONAL PADDY FIELD

ABSTRACT

The high use of chemical fertilizer and pesticide in paddy field practice was not sustainable and result in the decline of production therefore organic farming being one of the solutions. A conventional paddy field is required to undergo a conversion within some transitions period before become an organic paddy field. This research aims to comprehensively describe changes occurs during the paddy field organic convention including soil properties and quality alongside growth and yield. This research used 5 different paddy fields: conventional, transition I, transition II, transition III and organic to simulate the conversion progress form conventional to organic paddy field. Our result demonstrates that an enhancement in soil properties and soil quality occurred from the early stage of conversion at the transition I period and go on toward the organic stage. As improvement of soil were made, transitions and organic paddy field were able to grow in a comparable rate to the conventional paddy field demonstrated by plant dry weight, net assimilation rate, and plant growth rate were insignificantly different within all paddy field systems. The organic still has a lower yield compared to conventional system. However, the yield gap in organic paddy field could be suppressed by only 9,50%.

Keyword: Organic conversion; paddy fields; sustainable agriculture