

INTISARI

Sistem tanam konvensional dapat menimbulkan dampak negatif pada lingkungan, sehingga perlu upaya pendekatan menuju sistem tanam organik yang lebih ramah lingkungan. Perbedaan sistem tanam menyebabkan terjadinya variasi jenis dan dominansi gulma. Penelitian ini bertujuan mempelajari pengaruh sistem tanam di lahan sawah konvensional, transisi, dan organik pada jarak tanam tegel dan jarak legowo 4:1 terhadap pertumbuhan dan hasil padi serta komposisi dan dominansi gulma. Penelitian dilaksanakan pada Desember 2023-April 2024 di Gabungan Kelompok Tani Organik Sawangan dan Gabungan Kelompok Tani Gondarum, Sawangan, Magelang, Jawa Tengah. Penelitian merupakan percobaan lapangan dengan membandingkan antar lokasi (multilokasi) lahan pertanaman padi varietas Mentik Wangi. Penelitian disusun dengan rancangan multilokasi (*oversite design*), dengan rancangan perlakuan faktor tunggal dan tiga ulangan. Faktor yang diujikan adalah jarak tanam yang terdiri dari dua taraf yaitu tegel dan jarak legowo 4:1. Hasil penelitian menunjukkan bahwa pertumbuhan dan hasil sistem tanam organik belum dapat menyamai konvensional. Sistem transisi menunjukkan pertumbuhan yang signifikan lebih tinggi daripada konvensional pada bobot kering tajuk, serta mampu mengimbangi konvensional pada seluruh parameter hasil. Jarak tanam jarak legowo 4:1 memiliki pertumbuhan lebih tinggi daripada tegel sampai umur 35 hst. Sistem tanam organik memiliki keragaman gulma tertinggi dibandingkan konvensional dan transisi. Gulma dominan pada fase vegetatif awal di ketiga sistem tanam adalah *Echinochloa crusgalli*. Pada umur lanjut, gulma *Echinochloa crusgalli* tetap dominan pada konvensional, sedangkan *Alternanthera philoxeroides* dominan pada sistem transisi dan *Pistia stratiotes* pada sistem organik. Jarak tanam tegel dan jarak legowo tidak mempengaruhi pertumbuhan dan hasil padi serta keragaman dan dominansi gulma secara signifikan.

Kata kunci: jarak tanam, komposisi gulma, konvensional, organik, transisi

ABSTRACT

*Conventional planting systems can have negative impacts on the environment, so it is necessary to take an approach towards a more environmentally friendly organic planting system. Differences in planting systems cause variations in the types and dominance of weeds. This study aims to study the effect of planting systems in conventional, transitional, and organic rice fields on the spacing of tegel and jajar legowo 4:1 on the growth and yield of rice as well as the composition and dominance of weeds. The study was conducted in December 2023-April 2024 at the Sawangan Organic Farmers Group Association and the Gondoarum Farmers Group Association, Sawangan, Magelang, Central Java. The study was a field experiment by comparing between locations (multi-locations) of Mentik Wangi rice planting land. The research was structured using an multilocations (oversite design), with a single factor treatment design and three replications. The factor tested was the planting distance consisting of two types, namely tegel and jajar legowo 4:1. The results showed that the growth and yield of the organic planting system could not match the conventional one. The transition system showed significantly higher growth than the conventional one in dry weight of the shoots, and was able to match the conventional one in all yield parameters. The 4:1 jajar legowo planting distance had higher growth than the tegel until the age of 35 hst. The organic planting system had the highest weed diversity compared to the conventional and transitional systems. The dominant weed in the early vegetative phase in the three planting systems was *Echinochloa crusgalli*. At an advanced age, the weed *Echinochloa crusgalli* remained dominant in the conventional system, while *Alternanthera philoxeroides* was dominant in the transitional system and *Pistia stratiotes* in the organic system. The tegel and jajar legowo planting distances did not significantly affect the growth and yield of rice as well as the diversity and dominance of weeds.*

Keywords: planting distance, weed composition, conventional, organic, transition