

ANALISIS KINERJA MESIN TANAM PADI SISTEM TANAM JAJAR LEGOWO 6 BARIS TIPE KEMUDI

INTISARI

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Mesin tanam padi sistem tanam jajar legowo 6 alur tanaman tipe kemudi merupakan hasil dari rekayasa ulang yang dilakukan oleh Balai Besar Pengembangan Mekanisasi Pertanian. Sebelum mesin tanam padi jajar legowo tipe kemudi diterapkan ke masyarakat, perlu dilakukan pengujian untuk mengetahui kinerja dari mesin tanam padi tersesbut. Penelitian ini bertujuan untuk melakukan uji fungsional di laboratorium dan melakukan uji kinerja di lapangan serta memberikan evaluasi terhadap mesin tanam padi jajar legowo tipe kemudi. Variasi yang dilakukan yaitu dengan perlakuan kecepatan teoritis 3,22 km/jam dan perlakuan kecepatan teoritis 4,69 km/jam. Parameter yang dilakukan untuk mengukur kinerja mesin tanam padi jajar legowo tipe kemudi antara lain kapasitas lapang, kenyamanan kerja dan kualitas hasil penanaman. Hasil penelitian diperoleh sebagai berikut: (1) Hasil uji fungsional menunjukkan mesin tanam padi jajar legowo tipe kemudi sudah dapat berfungsi dengan baik dan dapat difungsikan di lapangan, (2) Hasil uji lapangan menunjukkan mesin tanam padi jajar legowo dengan perlakuan kecepatan teoritis 3,22 km/jam memiliki Kapasitas Lapang Efektif 0,35 ha/jam dengan efisiensi lapang 63,67 % dan efisiensi kerja 66,86% sedangkan perlakuan kecepatan teoritis 4,69 km/jam memiliki Kapasitas Lapang Efektif 0,27 ha/jam dengan efisiensi lapang 34,21 % dan efisiensi kerja 53,68%., (3) Mesin tanam padi direkomendasikan untuk operator agar dioperasikan selama 4 jam kerja perhari setiap operator supaya tidak melebihi nilai ambang batas kebisingan mesin, namun getaran mesin masih aman untuk dioperasikan oleh operator, (4) Hasil kualitas penanaman menunjukkan perlakuan kecepatan teoritis 4,69 km/jam memiliki hasil yang lebih seragam dengan nilai koefisien variasi jarak tanaman dalam baris 0,62%, nilai koefisien variasi dibanding perlakuan kecepatan teoritis 3,22 km/jam, (5) Perbaikan *side marker* perlu dilakukan karena jarak antar baris tanaman dari hasil pengujian sebesar 28,10 cm perlakuan kecepatan teoritis 3,22 km/jam dan 31,72 cm pada perlakuan kecepatan teoritis 4,69 km/jam.

Kata kunci: mesin tanam padi, tipe kemudi, uji fungsional, kinerja lapang, kualitas penanaman, *side marker*

**PERFORMANCE ANALYSIS OF RIDING TYPE RICE TRANSPLANTER
WITH 6 ROWS JAJAR LEGOWO PLANTING SYSTEM**

ABSTRACT

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The riding type rice transplanter with 6 rows jajar legowo planting system is the result of re-engineering carried out by the Balai Besar Pengembangan Mekanisasi Pertanian. Before the jajar legowo riding type transplanter is applied to the community, it is necessary to do a test to determine the performance of the the jajar legowo riding type transplanter. This study aims to carry out functional tests in the laboratory and perform performance tests in the field and provide an evaluation of the jajar legowo riding type transplanter. The variation is done by treating the theoretical speed of 3.22 km/hour and the treatment of theoretical speed of 4.69 km/hour. Parameters used to measure the performance of the the jajar legowo riding type transplanter include field capacity, work comfort and quality of planting results. The results of the study were obtained as follows: (1) The results of the functional test showed that the the jajar legowo riding type transplanter was able to function properly and could be used in the field, (2) the field test results showed the the jajar legowo riding type transplanter with a theoretical speed of 3.22 km/hour has an Effective Field Capacity of 0.35 ha/hour with field efficiency of 63.67% and work efficiency of 66.86% while the theoretical speed treatment of 4.69 km/hour has an Effective Field Capacity of 0.27 ha/hour with field efficiency 34.21% and work efficiency 53.68%, (3) The the jajar legowo riding type transplanter is recommended for operators to operate for 4 working hours per day each operator so as not to exceed the machine noise threshold value, but the machine vibration is still safe to be operated by the operator, (4) The results of the quality of planting show that the theoretical speed treatment of 4.69 km/hour has more uniform results with a coefficient of variation of plant spacing in rows of 0.62%, the coefficient value of n variation compared to the theoretical speed treatment of 3.22 km/hour, (5) Side marker improvement needs to be done because the distance between the rows of plants from the test results is 28.10 cm the theoretical speed treatment is 3.22 km/hour and 31.72 cm in the treatment theoretical speed of 4.69 km/hour.

Keywords: *rice transplanter, riding type, functional test, field performance, planting quality, side marker*