

EVALUASI AKURASI PENGAMBILAN BIBIT PADA ALAT TANAM PADI TAPAK MACAN DENGAN VARIASI SUDUT JARI PENANAMAN DAN PERGESERAN *TRAY*

INTISARI

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Sistem tanam tapak macan merupakan sistem tanam padi model baru dengan pola tiga titik tanam berbentuk segitiga di mana setiap titik tanam hanya berisi satu batang padi. Pola titik tanam (segitiga) yang dihasilkan memiliki panjang sisi berkisar 5-7 cm dengan jarak setiap rumpunnya adalah 30 cm. Untuk membantu penerapan pola tanam tapak macan, telah dibuat prototipe alat tanam padi semi mekanis buatan Laboratorium Energi dan Mesin Pertanian, Departemen Teknik Pertanian, Universitas Gadjah Mada di mana setiap gerakan pengambilan bibit dan penanaman bibit disebabkan oleh putaran roda. Berdasarkan pada hasil pengujian performa, diketahui bahwa alat tanam padi model Tapak Macan generasi pertama memiliki beberapa kekurangan dalam penerapannya. Beberapa kekurangan tersebut seperti penggunaan *tray* model pita yang membutuhkan waktu cukup lama dalam persiapan bibitnya dan jumlah bibit terambil yang masih jauh dari ketentuan. Selanjutnya dari temuan tersebut, dibuat prototipe baru dengan beberapa modifikasi yang diharapkan dapat memenuhi persyaratan jumlah bibit padi pada sistem tanam tapak macan. Akan tetapi, prototipe tersebut belum dilakukan pengujian performa pengambilan bibit. Oleh karena itu, penelitian ini dilakukan bertujuan untuk melakukan uji kinerja prototipe alat tanam padi untuk pola tapak macan dengan variasi sudut jari penanaman dan pergeseran *tray*. Metode yang dilakukan dalam penelitian ini yaitu dengan melakukan variasi sudut jari penanaman dan pergeseran *tray* yang dilakukan dengan cara mengatur panjang baut penahan dan mengatur pemilihan lubang lengan *roller*. Dari uji kinerja yang telah dilakukan, diperoleh hasil kombinasi variasi dengan hasil pengambilan bibit terbanyak yaitu pada variasi X1Y3 dengan hasil rata-rata sebanyak 2,81 batang bibit padi. Sedangkan, variasi dengan hasil jumlah pengambilan bibit terkecil yaitu pada variasi X4Y1 dengan hasil rata-rata sebanyak 1,29 batang padi.

Kata kunci: teknologi, pertanian, padi, sistem tapak macan, alat tanam padi.

EVALUATION OF THE ACCURACY OF PICKING SEEDLINGS ON “TAPAK MACAN” RICE TRANSPLANTER WITH VARIATIONS IN PLANTING FINGER ANGLES AND TRAY SHIFTS

ABSTRACT

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“Tapak Macan” planting system is a new model of rice planting system with a triangular three-point planting pattern where each planting point contains only one rice stalk. The resulting planting point (triangle) pattern has a side length ranging from 5-7 cm with a distance of 30 cm between each clump. To help the application of tiger tread planting patterns, a prototype of semi-mechanical rice planting equipment has been made by the Laboratory of Energy and Agricultural Machinery, Department of Agricultural Engineering, Gadjah Mada University where every movement of picking seeds and planting seedlings is caused by the rotation of the wheel. Based on the results of performance testing, it is known that the first generation Tapak Macan model rice planting tool has several shortcomings in its application. Some of these shortcomings such as the use of ribbon model trays which take a long time in preparing the seeds and the number of seeds taken which are still far from the provisions. Furthermore, from these findings, a new prototype was made with several modifications that are expected to meet the requirements for the number of rice seedlings in the tiger tread planting system. However, the prototype has not yet tested the performance of seedling picking. Therefore, this study was conducted to test the performance of rice planting tool prototypes for tiger tread patterns with variations in planting finger angles and tray shifts. The method carried out in this study is by varying the angle of the planting finger and shifting the tray which is done by adjusting the length of the retaining bolt and adjusting the selection of the roller arm hole. From the performance tests that have been carried out, the results of the combination of variations with the results of taking the most seeds, namely the X1Y3 variation with an average result of 2.81 rice stalks. Meanwhile, the variation with the result of the smallest number of seeds taken is in the X4Y1 variation with an average yield of 1.29 rice stalks.

Keywords: technology, agriculture, rice, “tapak macan” system, rice transplanter.