

E-mail:mousavi22@yahoo.com

Kubota- KRA- 75

Yanmar- PR- 400

## **Effect of Slipping and Different Puddlings on Riding Type Transplanter Machine Performance**

**SR Mousavi Seyedi**

Agricultural Machinery Department, Faculty of Agriculture, Sari University, Sari, Iran  
E-mail:mousavi22@yahoo.com

### **Abstract**

This research was performed on the basis of a field experiment to evaluate the effects of puddling in machine slipping with three treatments and four replications. In order to determine proper transplanting, the variables such as planting depth, number of pigweeds in hill drop, row distance, hill drop distance, number of total lost hill drops and actual field capacity in one, two, and three times of puddling were measured. The seed of Belpanta variety of rice was for field tillage, the tiller

---

---

(Kubota- KRA- 75) with 1.35 m work width, 7.5 hp was used. The riding type transplanter machine (Yanmar-pr-400) had 4 rows with 30 cm distance between rows. Treatment means were compared by Duncan's multiple range test. The results indicated that the number of puddlings increases by slipping. There was no significant differences between five and three times of puddlings but the difference between three and one times puddlings was significant. One time of puddling was regarded the best conditions on the basis of transplanter performance but for weed burial three times of puddling was suggested. More than three times of puddling was not recommended because of technical and economical reasons.

**Keywords:** Mechanization, Planting, Puddling, Slipping, Transplanter machines

)

.(

.( )

)

.(

.( )

)

.(

( )

.( )

)

.(

(

(

(

(

(

.( )

---

<sup>1</sup>Slipping

Kubota-

Diesel- (2500-2600) RPM

KRA- 75

Yanmar-PR-400

d)  $\pi d n$

(

n =

[ ]

$L_2$   $L_1$   
(S)

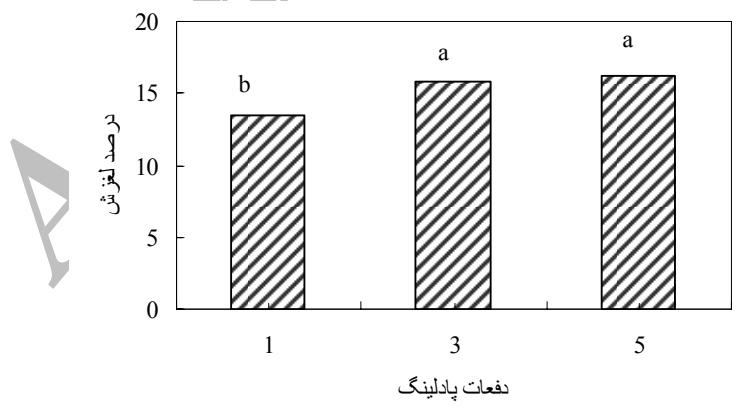
$$S\% = \frac{L_1 - L_2}{L_1} \times 100$$

[ ]

<sup>1</sup>Puddling  
<sup>2</sup>Penetrometer  
<sup>3</sup>Indika  
<sup>4</sup>Belpatna

/	**	/
/		/
		/
		%
		**

/	/
/	/
/	/



Archive of SID

%)  
( )  
( ) ( )  
( )  
( )  
( )  
( )  
( )  
( )  
( )

/	ns	/
/		/
		/

ns

/	/
/	/
/	/

/	*	/
/		/

%

\*

/	/
/	/
/	/

/	*	/
/		/
		/

%

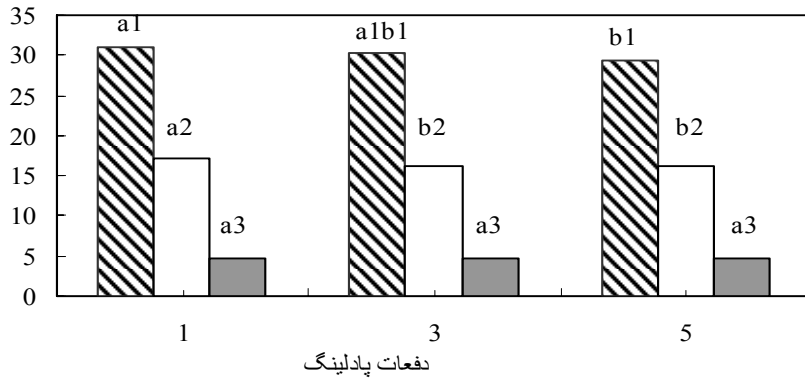
\*

Archive of SID

/ /

/ /  
/ /  
/ /

عمق کاشت، فاصله بین کپه و ردیف  
(واحد سانتیمتر)



عمق نشاء a3 فاصله بین کپه a2b2 فاصله بین ردیف a1b1

Archive

%

:/ \*

:/

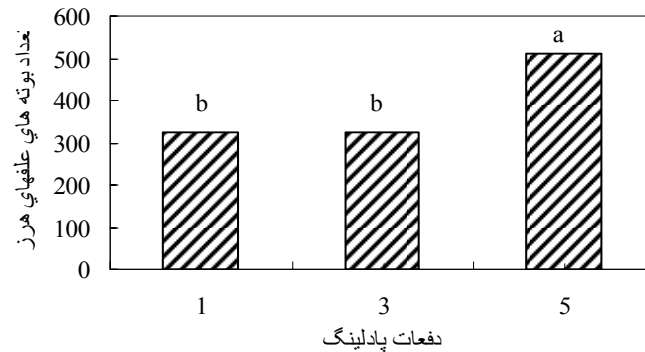
:/

:/

% \*

/ /  
/ /  
/ /





Archive of SID

Behera BK and Varashney BP, 2003. Studies on optimization of puddled soil characteristics for self-propelled rice transplanter. *Agric Mech Asia Afr Lat Am* 34 (3): 12-16.

Hemmat A and Taki O, 2003. Comparison of compaction and puddling as pre-planting soil preparation for mechanized rice transplanting in very gravelly calcisols in central Iran. *Soil & Tillage Research* 70: 65-72.

Hobbs P and Morris M, 1996. Meeting south Asia's future food requirement from rice-wheat cropping systems: issues facing researchers in the post-green revolution era. NRG paper 96-01 CIMMYT Mexico DF.

JICA. 2000. Farm mechanization course- rice transplanter. Tsukuba International Centre. Japan.

Kisu M, 1978. Tillage properties of wet soils. Pp. 307-316. In: *Soil and Rice*. International Rice Research Institute, Los Banos, Philippines,

- 
- 
- Lal R, 1985. Tillage in lowland rice-based cropping system. In: Soil Physics and Rice. International Rice Research Institute, Los Banos, Philippines, Pp. 283-307.
- Mabbayad MO, Pablico PP and Moody K, 1983. The effect of time and method of land preparation on weed population in rice. Pp. 357-368. Proc. 9th Asian-Pac. Weed Sci Soc Conf, Manila, Philippines.
- Moddy K, 1977. Weed control in rice. Fifth Biotrop Weed Science Training Cours. Rubber Research Institute, Malaysia. pp. 374-424.
- Moddy K, 1982. Weed control in sequential cropping in rainfed lowland rice growing areas. I. tropical Asia. Weed control in small farms. Weed Sci Soc Biotrop spec Publ No 15. pp. 374-424.
- Razavi SJ and Mirlohi AF, 1996. Study of present condition of rice production in Isfahan province. Final Research Report. Isfahan University of Technology, Isfahan, Iran.
- Sakurai, H. 2000. Soil mechanics for agricultural machinery. Tsukuba International Centre, Japan.
- Sharma PK and De Datta SK, 1986. Physical properties and processes of puddled rice soils. Adv. Soil Sci 5: 139-178.
- Sharma SK, Tomar RK and Gangwar KS, 1995. Effect of crop establishment and tillage practices on yield and economic of irrigated rice (*Oryza sativa*)-wheat (*Triticum aestivum*) system. Indian Journal of Agricultural Sciences 65 (9): 636-638.
- Tanaka T, 1984. Operation in paddy field: state of art report. J Terramesh. 21 (2): 153-179.