

*

(// : // :)

ASAE,D /

(C B,A)

/ / / / / / / / /

:

(Grisso et

al., 2007)

.(Macmillan, 2002)

ASAE

(Grisso et al., 2007;

.ASAE Standards, 2006)

.(Al-Janobi & Al-Suhaibani, 1998)

E-mail: rmardani@ut.ac.ir

*

.(Tong & Moayad, 2006)

.(Behnam, 1996)

(ASAE)

(Arvidsson et

.al., 2004)

(Kepner et al., 1978; Macmillan,

.2002)

. (Upadhyaya et al., 1984)

(Al-

.Janobi & Al-Suhaibani, 1998)

(Grisso et al., 1994;

.Kepner et al., 1978)

.(Al-Suhaibani & Al-Janobi,1997)

.(Taniguchi et al., 1999)

ASAE, D /

.(Ashrafizadeh, 1995)

.(Moradi, 1995)

()

(Alimardani,

ASAE

.1997)

/ / () /

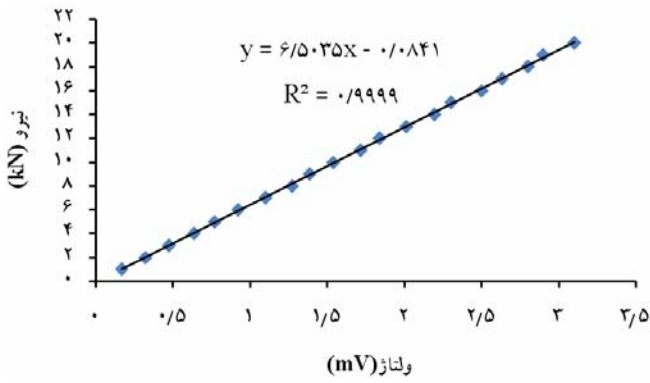
Amesler

() Type10z1032



(Abbaszadeh, 2006)

()



() ()

()

()

مشخصات	ادوات
نوع استاندارد معمولی، تک خیش، عرض کار 360 mm، زاویه استقرار 30°	گاوآهن برگرداندار
تک یشقابی، قطریشقاب 660 mm، زاویه تمایل 22°، زاویه برش 45°، زاویه استقرار 45°	گاوآهن یشقابی
تک شاخه، سطح مقطع 25 x 50 mm ² و زاویه حمله 30° و تیغه قلمی	گاوآهن قلمی

:

RNAM

(.RNAM, 1983)

(CR10X)

MT250D

"S"

(Afkari Sayah, 1989)

m × m

$$D = F_i [A + B(S) + C(S)^2] w.d$$

n D=SD.n.d
 ASAE, D /
 Fi (N) D
 w (km/h) S ()
 C,B,A (cm) d (m)
 Fi / /
 Fi (/ /)
 Fi
 w.d D

Taniguchi et

() () al.

C32A RS 232

Al-Janobi & Al-

() Al-Suhaibani & Al-Janobi () Suhaibani

()

()

()

() Al-Suhaibani & Al-Janobi

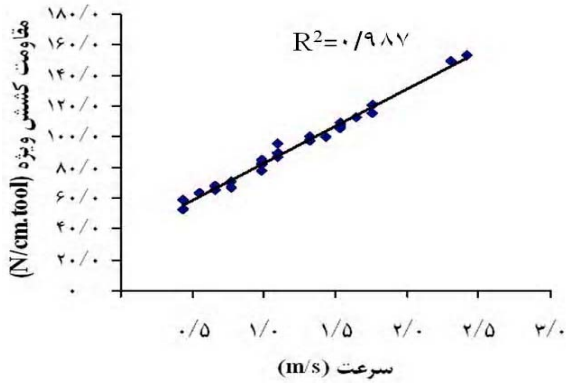
(ASAE Standards, 2006)

() ()

A D=SD.A

(d)

(w)



(R ²)	ضریب تبیین	احتمال	ضرایب رگرسیون		نوع گاوآهن
			مقدار	نماد	
0.991	ns	.000	256/261	A	برگرداندار
			2/282	B	
			12/113	C	
0.987	ns	.000	152/288	A	بشقابی
			3/795	B	
			9/664	C	
0.987	**	.000	36/907	A	جیزل
			12/184	B	
			0/131	C	
	%		**		ns

(R²)

() Al-Suhaibani & Al-Janobi

()

ASAE

()

() () ()

: () () ()

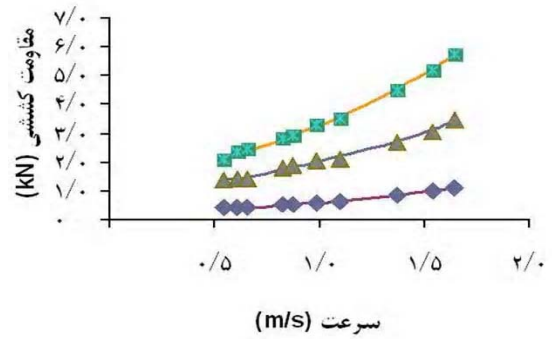
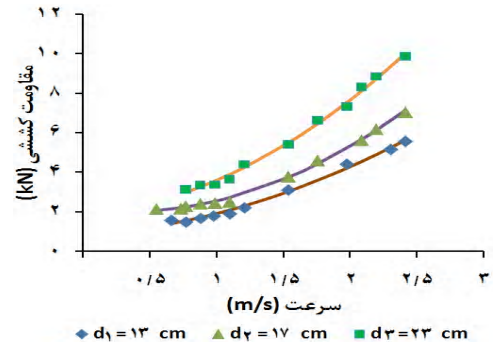
$$SD = \frac{1}{S} + \frac{1}{S} + \frac{1}{S} \quad ()$$

$$SD = \frac{1}{S} + \frac{1}{S} + \frac{1}{S} \quad ()$$

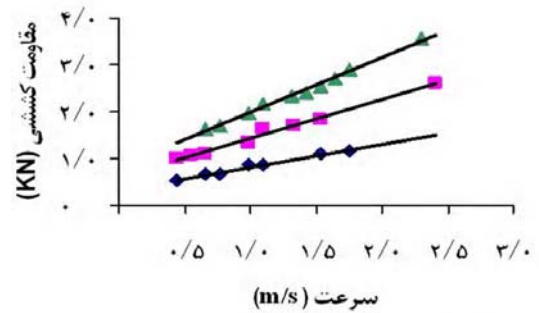
$$SD = \frac{1}{S} + \frac{1}{S} + \frac{1}{S} \quad ()$$

(C B,A)

()

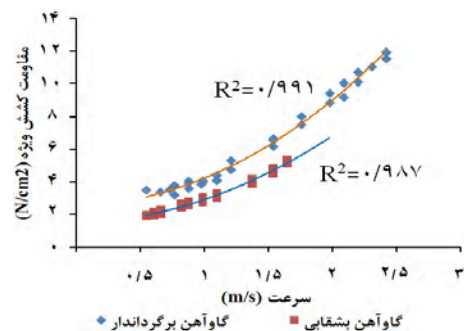


d₁=7cm d₂=17cm d₃=24cm

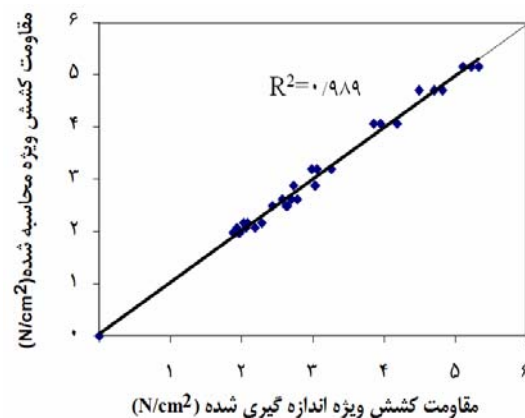


d₁=10 cm d₂=17 cm d₃=24 cm

() () ()



ASAE
(C B,A)
/ / / / /
/ / / / /



REFERENCES

Abbaszadeh, R. (2006). *Test and evaluation of three points hitch dynamometer*. M.Sc. Thesis. Agric. Machinery Engineering Dept. Faculty of Biosystems Engineering, University of Tehran (in Farsi).

Afkari Sayah, A. H. (1989). A computer model to predict the pull force for moldboard, disk and chisel plows. *Agricultural Science Journal of Faculty of Agriculture, University of Tabriz*. Vol. 7. No. 1 and 2: 95-109 (in Farsi).

Alcock, R. (1986). *Tractor-implement systems*. AVI Publication Company.

Alimardani, R. (1997). Design and contraction of tractor mounted penetrometer. In: *The Joint International Conference on Agricultural Engineering Technology*. Daaka, Bangladesh.

Al-Janobi, A.A. & Al-Suhaibani, S.A. (1998). Draft of primary tillage implements in sandy loam soil. *ASAE Transactions*, Vol.14(4):343-348

Al-Suhaibani, S. & Al-Janobi, A. (1997). Draught requirements of tillage implements operating on sandy loam soil. *Journal of Agricultural Engineering Research* 66:177-182.

Arvidsson, J., Keller, Th. & Gustafsson, K. (2004). Specific draught for moldboard plough, chisel plough and disc harrow at different water contents, *Soil & Tillage Research* 79 : 221-231

ASAE Standards, D 497.5 FEB. (2006). *Agricultural Machinery Management Data*. St. Joseph, MI.

Ashrafizadeh, R. (1995). *Avaluation of chisel plow draft in different level of soil moisture content and tillage depth*. M.Sc. Thesis. Agric. Machinery Engineering Dept. Faculty of Agriculture. University of Shiraz (in Farsi).

Behnam, S. (1996). *Avaluation of Disk plow draft in different conditions of moisture content and common tillage depths and their effects on soil crushing and inverting*. M.Sc. Thesis. Agric. Machinery Engineering Dept. Faculty of Agriculture. University of Shiraz (in Farsi).

Grisso, R.D., Perumpral, J.V. & Zoz, F.M. (2007). Spreadsheet for matching tractors and drawn implements. *ASAE Transactions*. Vol. 23 (3): 259-265.

- Grisso, R. D., Yasin, M. & Kocher, M. F. (1994). Tillage implements forces operating in silty clay loam. *ASAE paper* No.94-1532.St.Joseph, MI.
- Kepner, R. A., Bainer, R. & Barger, E. L. (1978). *Principle of farm machinery*. AVI Publication Company.
- Macmillan, R. H. (2002). *The Mechanic of tractor and tillage implement performance*. Theory and worked examples. University of Melbourne. Printed from <http://www.eprints.unimelb.edu.au>.
- Moradi, A. (1995). *Avaluation of moldboard plow draft in different conditions of soil moisture content and common tillage depths of different cultivations*. M.Sc. Thesis. Agric. Machinery Engineering Dept. Faculty of Agriculture. University of Shiraz (in Farsi).
- Regional Network for Agricultural Machinery (RNAM). (1983). *Test Codes and Procedures for Farm Machinery*. Technical series No 12. 2nd edition.
- Taniguchi, T., Makanga, J.T. & Kishimoto, K. (1999). Draft and manipulation by a moldboard plow under different forward speed and body attachments, *ASAE Transaction*, 99:1577- 1521.
- Tong, J. & Moayad, B. Z. (2006). Effect of rake angle of chisel cutting on soil cutting factors and power requirement: A computer simulation. *Soil and Tillage Research* 88: 55-64.
- Upadhyaya, S. K., Williams, T. H., Kemble, L. J. & Collins, N. E. (1984). Energy requirement for chiseling in coastal plain soils. *ASAE Transactions*, 27(6): 1643-1649.

