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ASAE,D /

(C B,A)

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(Grisso et

al., 2007)

.(Macmillan, 2002)

ASAE

(Grisso et al., 2007;

.ASAE Standards, 2006)

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

(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)

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(Alimardani, ASAE 1997)

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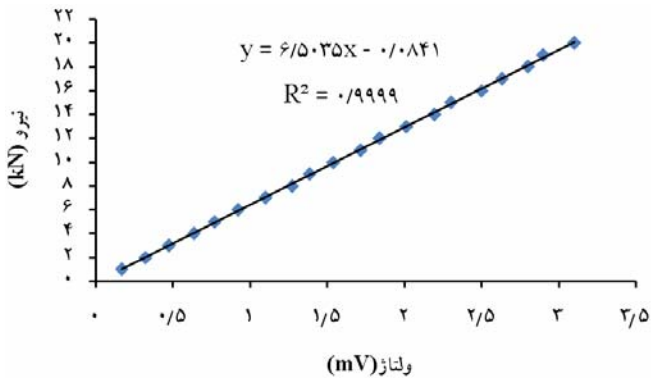
Amesler

() Type10z1032



(Abbaszadeh, 2006)

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(MPa)

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مشخصات	ادوات
نوع استاندارد معمولی، تک خیش، عرض کار ۳۶۰ mm، زاویه استقرار ۳۰°	گاوآهن برگرداندار
تک یشقایی، قطرشقاب ۶۶۰ mm، زاویه تمایل ۲۲°، زاویه برش ۴۵°، زاویه استقرار ۴۵°	گاوآهن یشقایی
تک شاخه، سطح مقطع ۵۰ × ۲۵ mm ² و زاویه حمله ۳۰° و تیغه قلمی	گاوآهن قلمی

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RNAM

(RNAM, 1983)

(CR10X)

MT250D

"S"

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.(Afkari Sayah, 1989)

m × m

$$n \quad D=SD.n.d$$

$$D= F_i [A+B(S)+C(S)^2] w.d \quad \text{ASAE, } D \quad / \quad ($$

F_i (N)

D

w (km/h)

S ()

C, B, A

(cm)

d (m)

F_i

/ /

(/ /)

F_i

$w.d \quad D$

Taniguchi et

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() al.

C32A RS 232

Al-Janobi & Al-

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

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() Al-Suhaibani & Al-Janobi

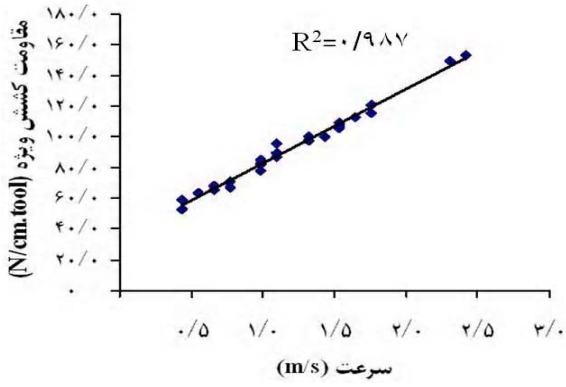
.(ASAE Standards, 2006)

() ()

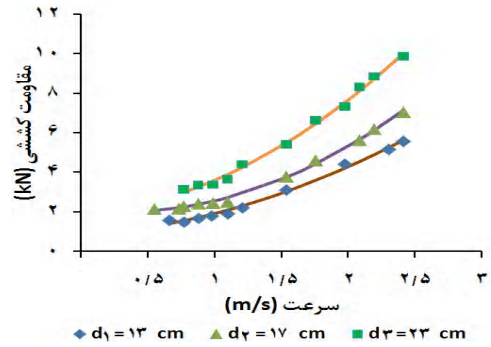
$A \quad D=SD.A$

(d)

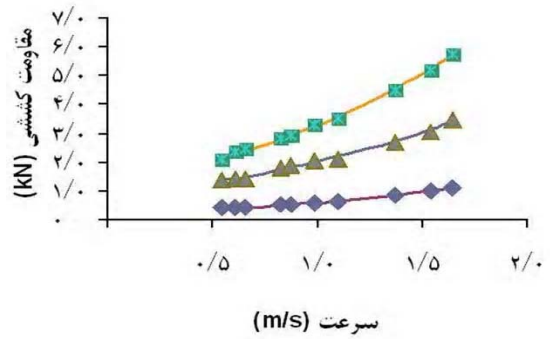
(w)



(C B,A)
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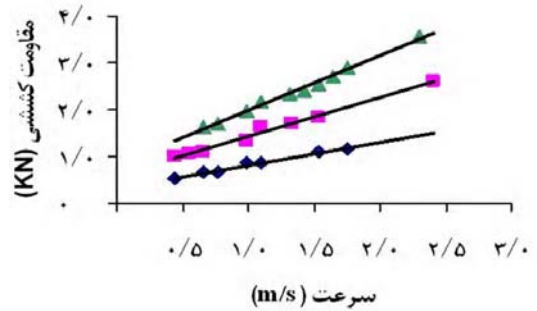


(R ²)	ضریب تبیین	احتمال	ضرایب رگرسیون		نوع گاوآهن
			مقدار	نماد	
. / ۹۹۱	ns	. / ۸۷۹	۲۵۶ / ۲۶۱	A	برگرداندار
			۲ / ۲۸۲	B	
			۱۲ / ۱۱۳	C	
. / ۹۸۷	ns	. / ۷۷۸	۱۵۲ / ۲۸۸	A	پشقی
			۳ / ۷۹۵	B	
			۹ / ۶۶۴	C	
. / ۹۸۷	**	. / ۳۷۸	۳۶ / ۹۰۷	A	جیزل
			۱۲ / ۱۸۴	B	
			۰ / ۱۳۱	C	
	%	**	ns		



◆ d₁=7cm ▲ d₂=17cm ■ d₃=24cm

(R²)



◆ d₁=10 cm ■ d₂=17 cm ▲ d₃=24 cm

() Al-Suhaibani & Al-Janobi

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ASAE

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SD = / + / S+ / S ()

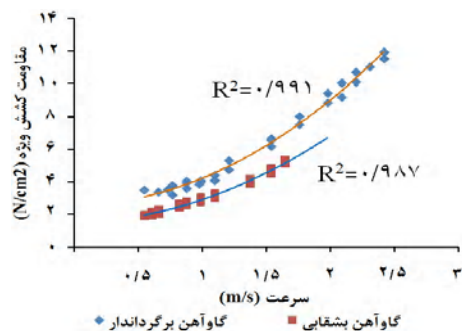
SD = / + / S+ / S ()

SD = / + / S+ / S ()

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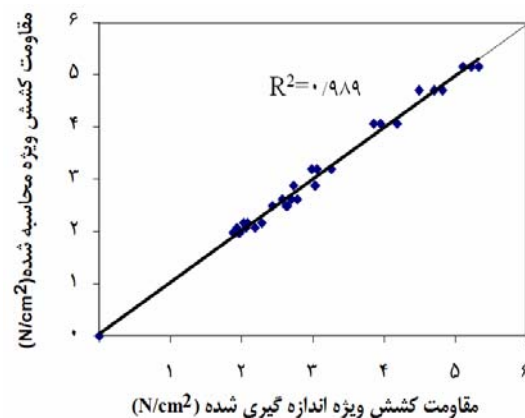
◆ گاوآهن برگرداندار ■ گاوآهن پشقی

ASAE

(C B,A)

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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.

