

*

()

% / % / NaBPh₄ (r²= / p < /)
 NaBPh₄
 (SE) (r²)
 .(/ / r²)
 (r²=0.99)

()
 .(Chute and Quirk, 1967; Grimme, 1974)

Cox and)
 .(Joern, 1997

(NH₄OAc 1M)

;Richards Barber and Mathews, 1962)
 et al., 1994; Mengel and Uhlenbecker, 1993 et al., 1988;
 .(Rahmatullah

McLean and)

.(Watson, 1985

.(Cox et al., 1999)

Stehouwer and)

(Johnson, 1991

()

Portela,)

(Eckert and Watson, 1996; 1993

(Cassman *et al.*, 1990)

() Dhillon and Dhillon .

0.3M NaBPh₄

() Pratt

()

HNO₃

H₃O⁺

K

%

() Smith *et al.*

(Cox *et al.*, 1996)

NaBPh₄

Smith and Scott

(NaBPh₄)

Carey and Metherel

() Cox and Joern .

()

()

K⁺ BPh₄⁻

Cox and

(KBPh₄)

() Joern

NaBPh₄

KBPh₄

(Cox *et al.*, 1999)

() Carey and Metherel .

KBPh₄

BPh₄⁻

Hg²⁺

NaBPh₄

() Cox *et al.* .

() Reed and Scott

NaBPh₄

BPh₄⁻

Hg²⁺ Cu²⁺

(Cox *et al.*, 1999; Cox and Joern, 1997)

NaBPh₄

NaBPh₄

()

()

Rahmatullah *et al.*,)

Sadusky *et al.*, Mengel and Uhlenbecker, 1993; 1994

(Martin and Sparks, 1983 Havlin *et al.*, 1985; 1987;

()

Dhillon () Towfighi

(Chapman, 1965) pH = /

() Smith *et al.* () and Dhillon

Knudsen *et al.*

()

() Towfighi .

0.5M CaCl₂

KBPh₄ AgNO₃

KCl

(2M NaCl-0.01M NaEDTA-0.2M NaBPh₄)

Cox *et al.* () Reed and Scott ()

() ()

(2M NaCl-0.01M NaEDTA-0.2 M NaBPh₄)

(r²) (SE)

SE = [Σ(q - q*)² / (n - 2)]^{1/2}

q* q

n HCl 50%

CuCl₂

(Knudsen *et al.*, 1982)

() ()

(CEC) 2M NaCl- ()

(CCE) (0.01M NaEDTA-0.2 M NaBPh₄)

SP (g kg ⁻¹)	CCE (g kg ⁻¹)	OC (g kg ⁻¹)	Clay (g kg ⁻¹)	CEC (Cmol _c kg ⁻¹)	EC (dSm ⁻¹)	pH	
/	/	/	/	/	/	/	Typic Haplocambids
/	/	/	/	/	/	/	Typic Haploxerepts
/	/	/	/	/	/	/	Typic Calcixerepts
/	/	/	/	/	/	/	Typic Haploxerepts
/	/	/	/	/	/	/	Typic Xerofluvents
/	/	/	/	/	/	/	Typic Calcisteps
/	/	/	/	/	/	/	Typic Calcisteps
/	/	/	/	/	/	/	Xeric Haplocalcids
/	/	/	/	/	/	/	Xeric Torrifluvents
/	/	/	/	/	/	/	Typic Endoaquepts
/	/	/	/	/	/	/	Typic Endoaquolls
/	/	/	/	/	/	/	Typic Haploxerolls

()

()

()

() Scott and Reed

()

/ /

()

()

Reed and .(Reed and Scott, 1966)

() Scott

%

()Bailly,

%

() Reed and Scott .

%

% /

106 mg K/10

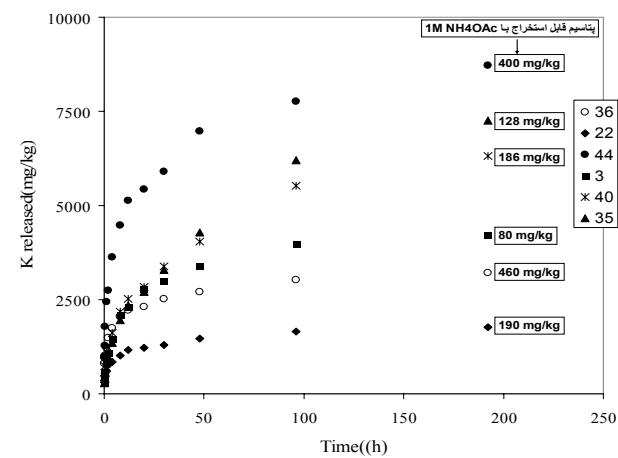
.(Reed and Scott, 1962)

.(Reed and Scott, 1962)

%

()

g



NaBPh₄

NaBPh₄

(K₀ - K_t) = a - bt ()

b a

()

$$q = (1/\beta) \ln \alpha \beta + (1/\beta) \ln t \quad ()$$

$$\beta \quad \alpha \quad t \quad q$$

(b)

$$\ln(K_0 - K_t) = a - bt \quad ()$$

$$1/(K_0 - K_t) = a + bt \quad ()$$

K_0

t t K_t

b a

()

SE r²

(a)

Polyzopoulos *et al.*)

(*al.*, 1986; Aharoni and Ungarish, 1976

$$[q = (1/\beta) \ln \alpha \beta + (1/\beta) \ln(t+t_0)] \quad t_0$$

Chien and (t+t₀) q
 t₀=0 () Clayton

α

β

$$q = at^b \quad ()$$

b a

$$\ln q = \ln a + b \ln t \quad ()$$

r²)

(/ / /

(SE)

() b (c)

b

() Cox and Joern

(Havlin *et al.*, 1985) Great Plains

:

$$q = a + bt^{1/2} \quad ()$$

b

a

Low,)

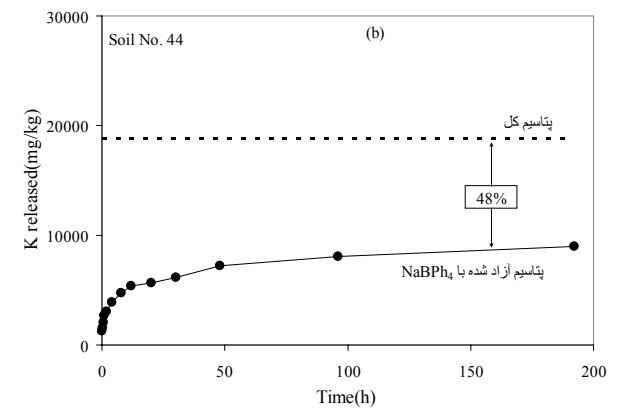
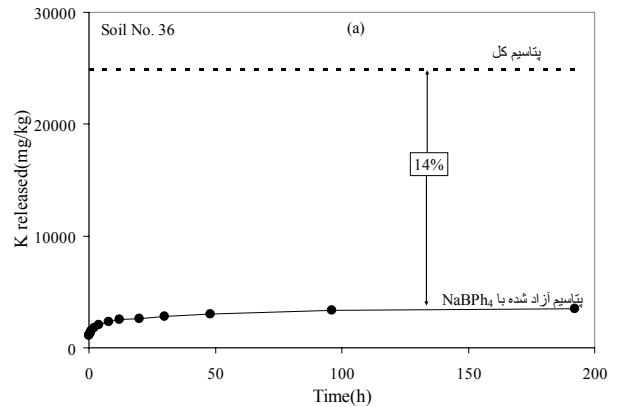
(1960

()

()

:

(Sparks, 1998)



NaBPh₄

b

a

Cox and Dhillon and Dhillon; 1992) NaBPh₄

Ca²⁺

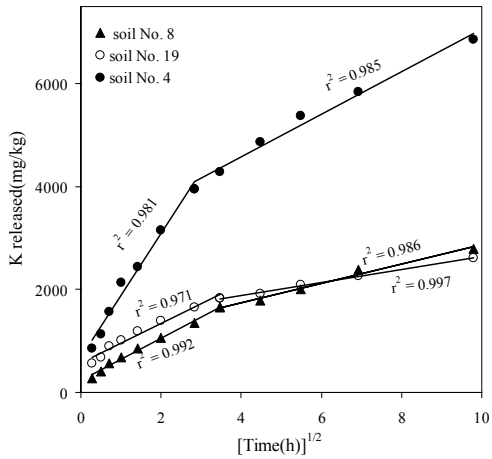
(Joern, 1997;

(Jardine and Sparks, 1984)

Bolt .

(Bolt *et al.*, 1963)

() *et al*



NaBPh₄

SE r²

()

NaBPh₄

SE

r²

NaBPh₄

(Jardine and Sparks, 1984; Chute and Quirk, 1967)

()

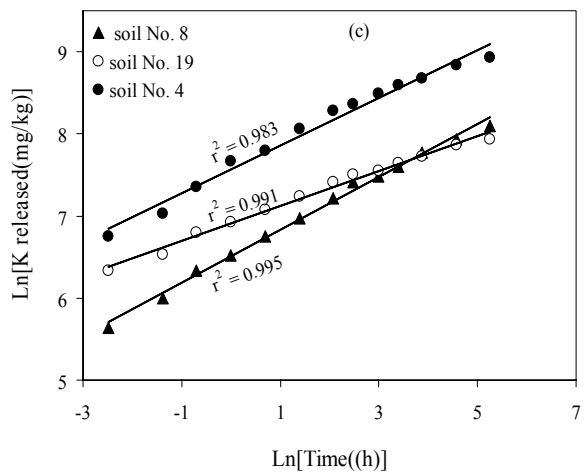
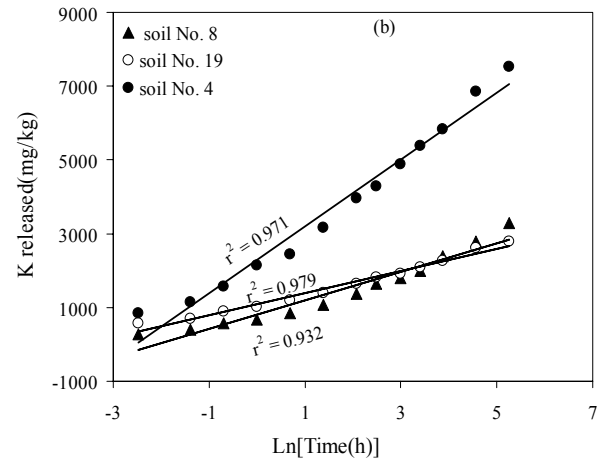
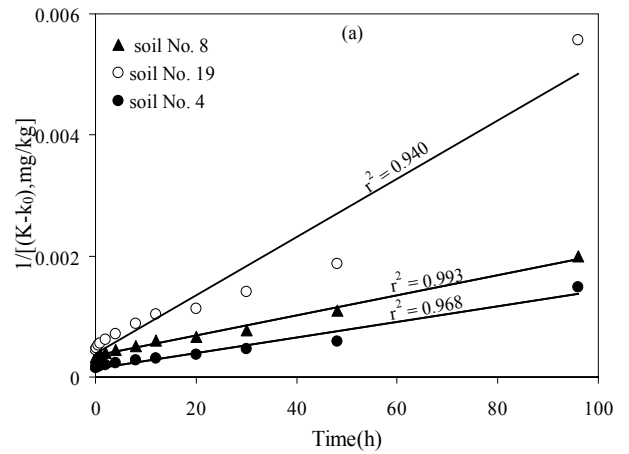
(Jardine and Sparks, 1984)

(b = 239.9-1711.7 mg kg⁻¹h^{-1/2})

)

(b = 80.1-662.8 mg kg⁻¹h^{-1/2})

(



NaBPh₄

c

b

a

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