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()
(*Cynara scolymus*)

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(// : // :)

()

(*Cynara scolymus* L.)

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6P= K= kg/h)

/ /

(N = , P= , K = kg/h) (N=

+)

(N= , P= , K= kg/ha +

) (N= , P= , K= kg/h

/ /

/ /

WSC , DMD

ADF

DMD

ADF

(*Cynara scolymus* L.) :

l)

(
(Prasad, 1996)

LDL

(Bonomi, et al., 1999b;

Bonomi, 1999a; Bonomi, et al. 1999c; Meneses, et
al., 2007; Ziai, et al., 2004)

(Ziai, et al., 2004)

(Adediran, et al.,

2004; Sabahi, 2006)

(1996) Elia, et al. .

(NH₄/NO₃)

(:) (:) (:) (:)

(:)

(2007) Meneses et al. (Ghosh, et al., 2004)

(Adediran et

al., 2004; Eltun, et al., 2002; Ghourttapfeh, 2003;
Sabahi, 2006)

(Kurle et al., 2006;

Poudel et al., 2001)

(Elia et al., 1996; Loecke

et al., 2004; Dent & Jones, 1997)

(Ward, 2001)

(Loecke, et al., 2004; Elia, et al., 1996; Dent

and Jones, 1997)

(*Cynara scolymus*)

Asteraceae

(Ziai, et al., 2004)

Cynara scolymus

... () :

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(

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OC%	(K)mg/kg	(P)mg/kg	%N	dS/m	pH
/	/	/	/	/	/
/	/	/	/	/	/

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()

N,P,K

(NIR)

Tone/ha	(kg/ha)					
	N	P	K	N	P	K

(LSD) Mstat-c SAS

(Excel)

%

() (ADF)

()

() % () ()

(ADF) (CP)

(WSC)

+ N P K) (DMD⁵) (ASH)

() NIR

(2003) Jafari et al.

1. Crude protein
2. Acid detergent fiber
3. Water soluble carbohydrate
4. Ash
5. Dry matter digestibility

()

... () :

(*Cynara Scolymus*)

WSC			DMD			ADF			CP				
/	ns	/	**	/	**	/	*	/	**	/	*	/	ns
/	**	/	**	/	ns	/	*	/	**	/	*	/	**
/		/		/		/		/		/		/	

ns ** *

()

(Adediran, et)

al., 2004; Fallah, 2006; Ghourttappeh, 2003;
Lebaschi, 2000; Sharifi Ashor Abadi, 1998; Ward,
.2001)

()
N P K)
(+
+ N P K)
(

()

()

(Eltun, et al., 2002;

Fallah, 2006; Ginting, et al., 1998; Pouryosef, 2007;
.Sharifi Ashor Abadi, 1998; Eghbal, et al., 2001)

(2004) Ghosh et al.

% % %

Adediran et (1999) Eghbal & Power .

()

(2004) al.

()

(2002) Kramer et al.

()

()

()

P N

K

(%CP)

(2006) Sabahi

(1988) Acharya et al.

%

()

% ()

(1993)El-Abagy .

+

N

P

K

kg K)

(kg N

kg P

g K)

(

kg

kg K)

(kg N

kg P

(kg N P

(*Cynara scolymus*)

%K	%p	(%) ASH	WSC(%)	(%) DMD	(%) ADF	(%) CP	()
/ c	/ cde	/ abc	/ a-d	/ e	/ a	/ d	g
/ c	/ e	/ c	/ a-d	/ bcd	/ a	/ bcd	ef
/ c	/ de	/ abc	/ ab	/ cde	/ a	/ a-d	d
/ bc	/ bc	/ abc	/ cd	/ bc	/ a	/ abc	de
/ c	/ bcd	/ c	/ ab	/ a	/ a	/ ab	c
/ c	/ cde	/ ab	a	/ ab	/ a	/ a-d	bc
/ a	/ b	/ abc	a-d	/ abc	/ a	/ bcd	def
/ a	/ bcd	/ abc	/ ab	/ abc	/ a	/ bcd	a
/ abc	/ b	/ abc	/ a	/ b-e	/ a	/ a-d	b
/ abc	/ bcd	/ abc	/ abc	/ b-e	a	a-d	def
/ abc	/ b	/ a	/ a-d	/ de	/ a	a	ef
/ abc	/ bcd	/ abc	/ d	/ cde	/ a	/ cd	g
/ abc	/ b	/ abc	/ bcd	/ b-e	/ a	/ bcd	g
/ ab	/ b	/ abc	/ a-d	b-e	/ a	/ d	f
a	/ a	/ a	/ a-d	/ b-e	/ a	/ bcd	def

... () :

()

(mg/kg)	(mg/kg)	(%)	(%)	(%) ADF	(%)	(%)	(Ton/ha)
ns	ns	*	**	**	ns	*	**
**	**	ns	**	*	ns	ns	**
**	**	*	**	ns	ns	*	**
**	*	**	**	*	ns	**	**
**	**	ns	*	**	*	ns	**
ns	ns	**	ns	ns	ns	**	**
*	**	**	ns	*	ns	ns	**
ns	ns	ns	*	**	ns	ns	**
ns	**	*	ns	ns	ns	ns	**
ns	ns	**	ns	ns	ns	ns	ns
*	ns	*	*	**	ns	ns	*
ns	ns	*	ns	*	ns	**	ns
**	ns	ns	**	**	*	**	ns
*	*	*	ns	**	ns	ns	**

[() ()] -

ns ** *

/ /

(2001) Eghbal et al.

(Reiad, et al., 1995; Kurle, et al.,
(1994) Mousawipoor .2006)

%
% / % /

(1993) Cox et al. (1998) Mehrparwar .

(ADF)

(ADF)

ADF

(1999) Eghbal & Power .

ADF

(Rostamza, 2004)

(DMD) %

N P K) ADF

(+ % /

(Acharya et al., 1998) % / (N P K)

()

% / % /

ADF

% / % / % /

DMD % / % /

ADF

(Sabahi, 2006)

(%)

() (DMD ADF (Buxton et al., 1999)

DMD ADF

ADF

()

ADF

ADF (2007) Ramroodi .

ADF

(2006) Mohsenabadi .

(1990) Francis et al. .

1. Dry matter digestibility

... ()

:

.() .

% %

(2007) Ramroodi . /

(DMD)

(Ash)

(1982) Hacker .

()

(1996) Buxton et al.

/ /

(WSC)

pH

.(Ward, 2001)

()

%

% /

% /

()

% / % /

WSC

.(Pomares et al., 1993 Adediran, et al., 2004)

(1995) Reiad et al. .

(2007) Ramroodi .

WSC

(1995) Reiad et al. .

(1993) Aghaalikhani

WSC

(P)

()

%

(1988) Gabal et al.

P

()

P, K
P
K mg/kg mg/kg
% / % /

% %

(1998) Ginting, et al.

(K)
()
%

Ghosh et al. (2005) Blaise et al. .

(2004)

%
% /
()

% / % /

(1999) Mitra et al.

(1999) Rodríguez & Reynaldo

(1993) Pomares et al.

N, P, K

(1993) Allievi et al.

... () :

()

(Gerakis & Honma, 1969)

(Blaise et al., 2005)

(1969) Gerakis & Honma

K)

kg N/ha

+

N P

%

(

%

%

()

(P<0.01)

% /

% /

(%CP)

%

(P<0.05)

(P<0.05)

(ADF)

(P<0.01)

ADF

(N P K)
 (N P K)

(×)

()

N P K)
) (+
 + N P K
 (

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