

( )

\*

( // : // : )

( )

**MATVEC DFREML**

( ) / ( ) /

( ) / ( ) /

( ) /

( ) /

/

( ) / ( )

(Marti & Funk, 1994)

(Dekkers, 1991)

( )

Farhangfar & (2001) Rezaei  
(2007) Hendabadi et al. (2007) Naeimipoor

(Farhangfar & Naeimipoor,  
2007)

Univariate SAS (SAS, 2002) Normal (Hendabadi et al., 2007)

( )

:  
$$y_{ijkl} = \mu + Rys_i + H(Rys)_{j(i)} + b.AFC_k + A_l + e_{ijkl} \quad ($$

$y_{ijkl}$   
)

$\mu$  (   
  $Rys_i$   
  $H(Rys)_{j(i)}$  (Farhangfar & Naeimipoor, 2007)  
  $b$   
  $A_l$   $AFC_k$   
  $e_{ijkl}$

: (Rezaei, 2001)  
$$y_{ijklm} = \mu + Rys_i + H(Rys)_{j(i)} + ApMp_k \quad ($$
  
$$+ A_l + PE_l + e_{ijklm} \quad (Hendabadi et al., 2007)$$

(Farhangfar & Naeimipoor, 2007)

$y_{ijklm}$   
( )

(CI) (CFS)  
 $ApMp_k$  (GL)

...

:

$$/ \pm / \quad / \pm /$$

$$/ \pm / \quad / \pm /$$

$$/ \pm /$$

$$) /$$

$$( \quad ) / ($$

$$)$$

PE<sub>1</sub>

( )

Perez-Cabal & Alenda, ( ) (2002; Kadarmideen et al., 2003; Muir et al., 2004

Safi Jahanshahi, 2000; Beigi Nasiri et al., ( ) (2004; Dadpasand Taromsari, 2005

(

---



---

	( )	
	( )	
/	/	( )
		( )
/	/	( )
		( )
		( )
		( )
		( )

---

:

Perez-Cabal & Alenda, 2002; ( ) (Kadarmideen et al., 2003

Safi Jahanshahi, ( ) 2000; Beigi Nasiri et al., 2004; Dadpasand ( / / ) (Taromsari, 2005

( / / ) (Rezaei, 2001; Beigi Nasiri et al., 2004; Dadpasand Taromsari, 2005)

(Perez-Cabal & Alenda, 2002; Kadarmideen et al., 2003)

$$y_{ijklm} = \mu + Rys_i + H(Rys)_{j(i)} + ApMf_k + A_l + PE_l + e_{ijklm} \quad ($$

y<sub>ijklm</sub>

ApMf<sub>k</sub> (DO)

( )

(Wang et al., 2000) MATVEC

(Meyer, 1997) DFREML

$$\pm$$

$$/ \pm / \quad / \pm /$$

$$/ \pm /$$

$$/ \pm /$$

$$) /$$

$$( \quad ) / ($$

±

/ ± /

/ /  
(Rezaei, 2001; Beigi Nasiri et al.,  
2004; Dadpasand Taromsari, 2005; Daliri et al.,  
.2007)

Perez-Cabal & Alenda, 2002; )  
) (Kadarmideen et al., 2003; Muir et al., 2004  
(

Marti & Funk, 1994; Kadarmideen et al., )  
(2003

/ /  
(Kadarmideen et al., 2003 )  
(Safi Jahanshahi, / /  
2000; Beigi Nasiri et al., 2004; Dadpasand  
.Taromsari, 2005; Daliri et al., 2007)

(Kadarmideen et al., 2003;  
Anderson-Ranberg et al., 2005; Jamrozik et al.,  
/ / 2005)  
/ )  
(2005) Jamrozik et al.

(Safi Jahanshahi, / /  
2000; Rezaei, 2001; Beigi Nasiri et al., 2004;  
Dadpasand Taromsari, 2005)

/ /  
(Kadarmideen et al., 2003 )  
/ /  
(Daliri et al., 2007 )

( / ± / )  
( / ± / )

/ /  
(Kadarmideen et al., 2003; Muir et al., 2004 )

±

---

± )

( )

---

/ / ± /  
/ / ± /  
/ / ± /  
/ / ± /  
/ / ± /  
/ / ± /  
/ / ± /  
/ / ± /  
/ / ± /

---

...

:

(2005) Jamrozik et al.

/ ) (2007) Farhangfar & Naeimipoor

( /

---



---

/ ± /		
/ ± /	/	/
/ ± /	/	/
/ ± /	/	/
/ ± /	/	/

---

± / )

( / /

( / / ± / )

/ /

(Kadarmideen et al., 2003; Muir et al., 2004)

/ /

(Mohammad Nazari et al., 2002; Farhangfar & Naeimipoor, 2007; Hendabadi et al., 2007)

/ /

/

Mohammad Nazari et al., )

(2002

/ /

(Marti & Funk, 1994; Kadarmideen et al., 2003; Jamrozik et al., 2005)

( )

( )

( / )

/

(Marti & /

Funk, 1994)

( / )

/ /

/

(Marti & Funk, 1994; /

Anderson-Ranberg et al., 2005; Jamrozik et al., 2005)

pe <sup>2</sup>							
/	/	±	/	/	/	/	/
/	/	±	/	/	/	/	/
/	/	±	/	/	/	/	/
/	/	±	/	/	/	/	/

= pe<sup>2</sup>

(Marti & Funk,  
 1994; Mohammad Nazari et al., 2002; Beigi Nasiri  
 et al., 2004; Farhangfar & Naeimipoor, 2007;  
 / Hendabadi et al., 2007)

/ /

/

( )  
 .( ) (

/ /

/ /

/ /

...

:

\* ( ) ( )

صفت	Milk	Fat	Fat%	Pro	Pro%	CI	DO	CFS	GL
Milk	/	/	/	/	/	/	/	/	/
Fat	/	/	/	/	/	/	/	/	/
Fat%	/	/	/	/	/	/	/	/	/
Pro	/	/	/	/	/	/	/	/	/
Pro%	/	/	/	/	/	/	/	/	/
CI	/	/	/	/	/	/	/	/	/
DO	/	/	/	/	/	/	/	/	/
CFS	/	/	/	/	/	/	/	/	/
GL	/	/	/	/	/	/	/	/	/
= DO	= CI	= Pro%	=Pro	=Fat%	=Fat	=Milk *	= GL	= CFS	

(Mohammad Nazari et al., 2002; Beigi Nasiri et al., 2004; Muir et al., 2004; Farhangfar & Naeimipoor, 2007; Hendabadi et al., 2007)

Kadarmideen et al.

( / ) (2003)

## REFERENCES

1. Anderson-Ranberg, I. M., Klemetsdal, G., Heringstad, B. & Steine, T. (2005). Heritabilities, genetic correlations, and genetic change for female fertility and protein yield in Norwegian Dairy cattle. *J. Dairy Sci*, 88, 348-355.
2. Beigi Nasiri, M. T., Rostami Enkasi, M. & Dabiri, N. (2004). Investigation of the genetically potential of milk production of H.F. dairy cattle in sari, In: Proceeding of 1<sup>st</sup> Congress on Animal and Aquatic Sciences 31 Aug.-2 Sep., Karaj, Iran, pp. 621-624. (In Farsi).
3. Dadpasand Taromsari, M. (2005). *Comparison between different methods for genetic parameters estimation and genetic evaluation of productive life in Holstein cattle of Iran*. Ph. D. dissertation, University of Tehran, Iran. (In Farsi).
4. Daliri, Z., Hafezian, S. H., Shadparvar, A. A. & Rahimi, G. (2007). Prediction of true herd life using genetic evaluation of first lactation traits, In: Proceeding of 2nd Congress on Animal and Aquatic Sciences, 16 -17 May, Karaj, Iran, pp. 1147-1149. (In Farsi).
5. Dekkers, J. C. M. (1991). Estimation of economic values for dairy cattle breeding goals: bias due to sub-optimal management policies. *Livest. Prod. Sci*, 29, 131-149.
6. Farhangfar, H. & Naeimipoor, H. (2007). A study of phenotypic and genetic correlations among production and reproduction traits in Iranian Holsteins using a multivariate animal model, In: Proceeding of 2nd Congress on Animal and Aquatic Sciences 16 -17 May, Karaj, Iran, pp. 1248-1251. (In Farsi).
7. Hendabadi, M., Shodja, J. & Aligani, S. (2007). Genetic and phenotypic parameters estimates for yield and reproductive traits of Holstein, In: Proceeding of 2nd Congress on Animal and Aquatic Sciences, 16 -17 May, Karaj, Iran, pp. 1371-1374. (In Farsi).
8. Jamrozik, J., Fatehi, J., Kistemaker, G. J. & Schaeffer, L. R. (2005). Estimates of genetic parameters for Canadian Holstein female reproduction traits. *J. Dairy Sci*, 88, 2199-2208.
9. Kadarmideen, H. N., Thompson, R., Coffey, M. P. & Kossaibati, M. A. (2003). Genetic parameters and evaluations from single and multiple trait analysis of dairy cow fertility and milk production. *Livest. Prod. Sci*, 81, 183-195.
10. Marti, C. F. & Funk, D. A. (1994). Relationship between production and days open at different levels of herd production. *J. Dairy Sci*, 77, 1682-1690.
11. Meyer, K. (1997). DFREML version 3.0. User notes. Animal genetics and breeding unit, Univ. New England, Armidale, NSW, Australia.
12. Mohammad Nazari, B., Vaez Torshizi, R., Moradi Shahrehabak, M. & Sayadnezhad, M. B. (2002). Estimation of genetic parameters of milk production and reproduction traits in Iranian Holsteins, In: Proceeding of 1<sup>st</sup> Seminar on Genetics and Breeding Applied to Livestock, Poultry and Aquatics, 20 -21 Feb, Karaj, Iran, pp. 95-105. (In Farsi).
13. Muir, B. L., Fatehi, J. & Schaeffer, L. R. (2004). Genetic relationships between persistency and reproduction performance in first-lactation Canadian Holsteins. *J. Dairy Sci*, 87, 3029-3037.
14. Perez-Cabal, M. A. & Alenda, R. (2002). Genetic relationship between lifetime profit and type traits in Spanish Holstein cows. *J. Dairy Sci*, 85, 3480-3491.
15. Rezaei, H. (2001). *Estimation of genetic parameters of type, production and herd life in Iranian Holstein cows*. M. Sc. Thesis, University of Guilan, Iran (in Farsi).
16. Safi Jahanshahi, A. (2000). *Estimation of genetic parameters for milk yield traits in Holstein cattle of Iran using different animal models*. M. Sc. Thesis, University of Tarbiat Modares, Iran. (In Farsi).
17. SAS Institute. (2002). SAS/STAT. 9 user's guide. Vol. 1, 2, and 3. SAS Inst., Cary, NC.
18. Wang, T., Fernando, R. L. & Kachman, S. D. (2000). MATVEC User's Guide. version 1.03.