

()

*

(// : // :)

()

MATVEC DFREML

() / () /

() / () /

() /

() /

/

() / ()

(Marti & Funk, 1994)

(Dekkers, 1991)

()

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

(Farhangfar & Naeimipoor, 2007)

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

()

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

y_{ijkl}
)

$$\mu \left(\begin{array}{l} Rys_i \\ H(Rys)_{j(i)} \\ b \\ AFC_k \\ A_l \\ e_{ijkl} \end{array} \right) \quad (Farhangfar \& \text{Naeimipoor, 2007})$$

(Rezaei, 2001)

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

(Farhangfar & Naeimipoor, 2007)

y_{ijklm}
 ()

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

...
 / ± /
 / ± /
 / ± /
) /
 () / (

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)

±
 / ± / / ± /
 / ± /
 / ± /
) /
 () / (

:

			PE _l
			()
			()
			()
			()
			()
			()
			()
			()

:

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

y_{ijklm}
 $ApMf_k$ (DO)

()

(Wang et al., 2000) MATVEC
 (Meyer, 1997) DFREML

±
 / ± /

/ /
(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 ²							
/	/	±	/	/	/	/	/
/	/	±	/	/	/	/	/
/	/	±	/	/	/	/	/
/	/	±	/	/	/	/	/

= pe²

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

/ /

/

()
 .() (

/ /

/ /

/ /

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 1st 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 1st 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.