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(Test day)

(a) (Peak Time) (Milk2x)

(c) (Persistence)

(b) (Peak Yield)

c b a

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a (P< /)

(P< /) c

(P< /) b (P< /) c a

(P> /)

(P< /) b (P< /) c

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(Borghese, 2005)

(Naderfard, 1997)

(Naderfard, 1997)

(a)

(c)

(b)

()

(Borghese, 2005)

/	/			Kg)
/	/	/	/	(Kg)
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/	/	/	/	(Kg)
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(Moradi Shahrababak,

.2001)

(Landete-Castillejos & Gallego,

.2000)

(Val-Arreola et al., 2004)

(1927) Gaines (1923) Brody et al.

Dhanoa (1987) Cobby & LeDu (1967) Wood

Wilmink (1984) Ferrell & Jenkins (1981)

(1988) Koops & Grossman (1987)

(Batra et al.,

.1987; Blanco et al., 2000; Tozer & Huffaker, 1999)

توجه به فرمول ۴ انتظار این است که تولید اوج در حیوانات دارای افزایش تولید زیاد (b بزرگتر) و تداوم شیردهی بیشتر (c کوچکتر) بالاتر باشد (Ferris et al., 1985).

b c

c b

c (Tekerli et al., 2000)

b
(Fernández et al., 2002; Osorio-Arce & Segura-Correa, 2005)

($t=$)

($y=$)

SAS

(GLM)

) III

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()

$$Y_{ijkl} = Herd_i + Year_j + Season_k + Lactation_l + bAge + e_{ijkl} \quad ($$

$= Y_{ijkl}$

$Herd_i$ = اثر i امین گله (۱ - ۷۴۳)

$Year_j$ = اثر j امین سال زایش (۱ - ۱۳)

$Season_k$ ($k = -$)

$Season_k$ ($k = -$)

$Lactation_l$ ($l = -$)

() = Age

$= e_{ijkl}$

(Pollott & Gootwine, 2000; Rekik et al., 2003; Tekerli et al., 2000, Val-Arreola et al., 2004; Varona et al., 1998)

$$y = at^b e^{-ct} \quad ($$

() : t

(Kg) : a

() : b

() : c

(Convergence)

(Ruiz et al., 2000)

$$\ln y = \ln a + b \ln t - ct \quad ($$

$\frac{b}{c}$

$$S = -(b+1) \ln c \quad ($$

$$y_{\max} = a \left(\frac{b}{c}\right)^b \exp^{-b} \quad ($$

از توابع شماره ۱ و ۲ و خصوصیات آن در بررسی‌های مختلفی استفاده شده است (Ferris et al., 1985; Grossman & Koops, 1987; Kaygisiz, 1999b; Osorio-Arce & Segura-Correa, 2005; Rekik et al., 2003; Shanks et al., 1981; Tekerli et al., 2000)

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(1998) Chhikara et al. (1998) Rodriguez et al. (1981) Shanks et al.
(1999b) Kaygisiz

(Blanco et al.,
2000; Kaygisiz, 1999b; Rodriguez et al., 1998;
.Schneeberger, 1981; Shanks et al., 1981)

a (1999a) Kaygisiz

(2001) Akpa et al. ($P < /$)

($P < /$) *c a*

c b a)
()
($P < /$)
(1994) Mourad & Metry

(1998) Chhikara et al. .

(Murrah)
(1998) Harding & Rasali

Tekerli et al. .

(2000) *c b* ($P < /$) *a*

($P < /$)
(1999a) Kaygisiz .

($P < /$) *a* ($P < /$)

Osorio- .

(2005) Segura-Correa & Arce

)
(Interaction) ()
.(Osorio-Arce & Segura-Correa, 2005)

c a
($P < /$)

b
(1994) Mourad & Metry

c b a)

...

(1994) Mourad & Metry

(2001) Akpa et al.

(2000) Tekerli et al.

(1998) Harding & Rasali

(1998) Chhikara et al.

(2005) Osorio-Arce

Varona et al.

(2000) Tekerli et al. (1998)

Tekerli et al. (1998) Chhikara et al.

(2003) Rekik et al. (2000)

($P < /$)

($P < /$)

(2003) Atashi (1981) Shanks et al.

(2000) Tekerli et al.

(2004) Macciotta et al.

Tekerli (1998) Chhikara et al. (1981) Shanks et al.

(2004) Macciotta et al. (2000) et al.

Tekerli et al. (1981) Shanks et al.

(2004) Macciotta et al. (2003) Atashi (2000)

(2000) Tekerli et al. (1981) Shanks et al.

(2004) Macciotta et al.

a

a

(1981) Shanks et al.

(2003) Atashi (2002) Fernández et al.

(2005) Segura-Correa & Osorio-Arce

b

b

Segura-Correa & Osorio- (2004) Macciotta et al.

(2005) Arce

c

c

از مرکز اصلاح نژاد دام و بهبود شیر کرج برای در
اختیار قرار دادن اطلاعات تشکر و قدردانی می‌گردد.

c

REFERENCES

1. Akpa, G. N., Asiribo, E. O., Oni, O. O. & Alawa, J. P. (2001). The influence of non-genetic factors on the shape of lactation curves in Red Sokoto goats. *Animal Science*, 72, 233-239.
2. Atashi, H. (2003). *Determining the best equation for describing the lactation curve in Iranian Holstein cows*. Msc dissertation. Faculty of Agriculture, Tehran University, Iran. (In Farsi).
3. Batra, T. R., Lin, C. Y., McAllister, A. J., Lee, A. J., Roy, G. L., Veseley, J. A., Wauthy, J. M. & Winter, K. A. (1987). Multitrait estimation of genetic parameters of lactation curves in Holstein heifers. *Journal of Dairy Science*, 70, 2105-2111.
4. Blanco, M., Gasque, R., Avila, A. & Rosas, M. (2000). *Parameters of the lactation curve of Jersey cattle*. from <http://www.congresocbta.unam.mx/PA03.htm>.
5. Borghese, A. (2005). *FAO Regional Office for Europe, Inter Regional Cooperate Research Network on Buffalo*. FAO, Rome.
6. Chhikara, S. K., Singh, N. & Dhaka, S. S. (1998). Effect of some non-genetic factors on peak yield and days to attain peak yield in Murrah buffaloes. *Proceedings of the 6th World Congress on Genetics Applied to Livestock Production*, 11-16 January, Armidale, NSW, Australia. Volume 24, Sheep and goats (fibre); sheep and goats (meat and milk); poultry, horses; buffaloes, Pp. 481-484.
7. Fernández, C., Sánchez, A. & Garcés, C. (2002). Modeling the lactation curve for test-day milk yield in Murciano-Granadina goats. *Small Ruminant Research*, 46, 29-41.
8. Ferris, T. A., Mao, I. L. & Anderson, C. R. (1985). Selecting for lactation curve and milk yield in Dairy cattle. *Journal of Dairy Science*, 68, 1438-1448.
9. Grossman, M. & Koops, W. J. (1987). Multiphasic analysis of lactation curves in dairy cattle. *Journal of Dairy Science*, 71, 1598-1608.
10. Kaygisiz, A. (1999a). *Lactation curve traits of native buffaloes (Turkish)*. Kahramanmaraş Sütçü İmam University Department of Animal Science, Kahramanmaraş, 5(1), 1-8, from http://tarimbilimleri.agri.ankara.edu.tr/eng/cilt51_eng.htm#demir.
11. Kaygisiz, A. (1999b). Lactation Curve Traits of Simmental Cattle's. *Turkish Journal of Veterinary and Animal Sciences*, 23(1), 15-23.
12. Landete-Castillejos, T. & Gallego, L. (2000). Technical note: the ability of mathematical models to describe the shape of lactation curves. *Journal of Animal Science*, 78, 3010-3013.
13. Macciotta, N. P. P., Vicario, D., Corrado Di Mauro & Cappio-Borlino, A. (2004). A Multivariate approach to modeling shapes of individual lactation curves in cattle. *Journal of Dairy Science*, 87, 1092-1098.
14. Metry, G. H. & Mourad, K. A. (1994) Lactation curves for first lactation Egyptian buffalo. *Journal of Dairy Science*, 77, 1306-1314.
15. Moradi Shahrababak, M. (2000). Persistency in dairy cattle. *Iranian Journal of Agricultural Sciences*, 32(1), 193-202. (In Farsi).
16. Naderfard, H. R. & Qanemy, A. W. (1997). Buffalo breeding in Islamic Republic of Iran. *5th world buffalo congress* (proceedings). Caserta, Italy, Pp: 942-943.
17. Osorio-Arce, M. M. & Segura-Correa, J. C. (2005). Factors affecting the lactation curve of Bos taurus×Bos indicus cows in a dual purpose system in the humid tropics of Tabasco, Mexico. *Tecnica-Pecuaria-en-Mexico*, 43(1), 163-171.
18. Pollott, G. E. & Gootwine, E. (2000). Appropriate mathematical models for describing the complete lactation of dairy sheep. *Animal Science*, 71, 197-207.
19. Rasali, D. P. & Harding, A. H. (1998). Factors affecting the lactation curves in the hill buffaloes and their Murrah crossbreds raised under farmers' management in the western hills of Nepal. *Nepal Agricultural Research Journal*, 2, 1-7.
20. Rekik, B., Ben Gara, A., Ben Hamouda, M. & Hammami, H. (2003). Fitting lactation curves of dairy cattle in different types of herds in Tunisia. *Livestock Production Science*, 83, 309-315.
21. Rodriguez, J. R. G., Pelaez, C. G. V., Ruiz-Lopez, F. D. J., Lagunes, J. L., Robles, R. C. & Hernandez, J. R. (1998). Environmental factors that affect the lactation curve of Brown Swiss cows in subtropical climates. *Tecnica Pecuaria en Mexico*, 36(2), 163-171.
22. Ruiz, R., Oregui, L. M. & Herrero, M. (2000). Comparison of models for describing the lactation curve of Latxa sheep and an analysis of factors affecting milk yield. *Journal of Dairy Science*, 83, 2709-2719.
23. Schneeberger, M. (1981). Inheritance of lactation curve in Swiss Brown cattle. *Journal of Dairy Science*, 64, 475-483.
24. Shanks, R. D., Berger, P. J., Freeman, A. E. & Dickinson, F. N. (1981). Genetic aspects of lactation curves. *Journal of Dairy Science*, 64, 1852-1860.
25. Tekerli, M., Akinci, Z., Dogan, I. & Akcan, A. (2000). Factors affecting the shape of lactation curves of Holstein cows from the Balikesir province of Turkey. *Journal of Dairy Science*, 83, 1381-1386.
26. Tozer, P. R. & Huffaker, R. G. (1999). Mathematical equations to describe lactation curves for Holstein-Friesian cows in New South Wales. *Australian Journal of Agricultural Research*, 50, 431-440.

27. Val-Arreola, D., Kebreab, E., Dijkstra, J. & France, J. (2004). Study of the lactation curve in dairy cattle on farms in Central Mexico. *Journal of Dairy Science*, 87, 3789-3799.
28. Varona, L., Moreno, C., Garcia Cortes, L. A. & Altarriba, J. (1998). Bayesian analysis of Wood's lactation curve for Spanish dairy cows. *Journal of Dairy Science*, 81, 1469-1478.