

( )

//

(MUN) (SUN)

( ) ( )

( )

MUN SUN (r = / )

(P< / ) MUN SUN

MUN SUN

) MUN SUN

(P< / ) ( ) (

SUN

SUN

MUN

:

(

(DIP)

(UIP)

(% % )

( )

( )

DIP

UIP

)



$$\begin{aligned} &= B_j \\ &= E_{ij} \end{aligned}$$

$$= T_i .$$

$$\begin{aligned} &= \mu \\ &= T_i B_j \end{aligned}$$

:

( )

:

/

chi-square

/

/

/

/

/ ± /

( )

/

/ %

%

%

/ %

/ %

/ %

/ %

(p < / )

× )

(

( )

/

/

/

/

/

/

/

/

/

/

/

/

/

/

/

/

/

/

/

/

/

SPSS

( SPSS INC) 9.0

:

( : :)

: ) ( )

( : :)

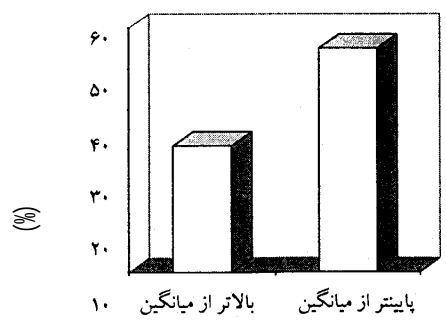
:

$$Y_{ijk} = \mu + T_i + B_j + T_i B_j + E_{ij}$$

:



:



( )

( )

( )

(  $l \pm l$  )

l)( )

( )

(

)

l ( )

l  
( )

( )

( )

$l \pm l$

( )

( )

( )

$l \pm l$

( )

( $p = l$ )

( )

( )

pH

( )

( )

( )

( )

( )

( )

( )

( )

( )

( )

( )

( )

( )

%

%

## REFERENCES

1. Alderton, B. W., D. L. Hixon, B. W. Hess, L. F. Woodard, D. M. Hallford, & G. E. Moss. 2000, Effect of supplemental protein type on productivity of primiparus beef cows. *Journal of Animal Science*. 78: 3027-3035.
2. Berardinally, J. G., J. Weng, P. J. Burfering, & R. Adair. 2001. Effect of excess degradable intake protein on early embryonic development, ovarian steroids, and blood urea nitrogen on days 2, 3, 4 and 5 of estrous cycle in mature ewes. *Journal of Animal Science*. 79: 193- 199
3. Blanchard, T., J. Ferguson, L. Love, T. Takeda, B. Henderson, Hesler & W. Chalupa.1990. Effect of dietary crude protein type on fertilization. *Journal of Veterinary Research*. 51: 995- 908.
4. Butler, W. R, J. J.Calaman, & S. W. Beam. 1996. Plasma and milk urea nitrogen in relation to pregnancy rate in lactating dairy cattle. *Journal of Animal Science*. 74: 855- 865.
5. Canfield, W. R., C. J. Sniffen, & W. R. Butler. 1990. Effect of excess degradable protein on postpartum reproduction and energy balance in dairy cattle. *Journal of Dairy Science*. 73: 2342-2349
6. Carlsson, J. & J. Bergström J. 1994. The diurnal variation of urea in cow's milk and how milk fat content, strategy and preservation effects analysis by a flow injection technique. *Acta. Vet. Scand*. 35(1): 67-77.
7. Carlsson, J., J. Bergström, & B. Pehrson. 1995. Variation with breed, age, season, yield, stage of lactation and herd in the concentration of urea in bulk milk and individual cow's milk. *Acta. Vet. Scand*. 36: 245-254.

8. Carroll, D. J., B. A. Barton, G. W. Anderson, & R. D. Smith. 1988. Influence of protein intake and feeding strategy on reproductive performance of dairy cows. *Journal of Dairy Science*.71: 3470- 3481.
9. Cottril, B. R., H. Biggodike, C. A. Collins, & S. B. Drew. 1997. The relationship between milk urea content and fertility in dairy cows. ADAS Bridgets Research Center, MartyrWorthy, Winchester, Hampshire So21 IAP, UK.
10. Decruyenarre, V., J. Febry, A. Van Rusel, & N. Bartiavx Thill. 1998. Monitoring of milk urea nitrogen across the seasonal feeding practices. Ministry of Small Enterprise and Agriculture Center for Agricultural Research of Gembloux. Belgium. Available in: [www.http.tamv.edq/conf/snh/post-online/postoo57/](http://www.http.tamv.edq/conf/snh/post-online/postoo57/).
11. Elrode, C. C. & W. R. Butler. 1993. Reduction of fertility and alteration of uterine pH in heifer fed excess ruminally degradable protein. *Journal of Animal Science*. 71: 694-701.
12. Elrod, C. C., M. V. Amburgh, & W. R. Butler. 1993. Alteration of pH in response to dietary crude protein in cattle is unique to the uterus. *Journal of Animal Science*. 71: 702-706.
13. Fahey, J., M. P. Boland, & D. O'Collaghan. 2001. The effect of dietary urea on embryo development in super-ovulated donor ewes and on early embryo survival and development in recipient ewes. *Brit. Journal of Animal Science*. 72: 395-400.
14. Ferguson, J. D. & W. Chalupa. 1989. Impact of excess degradable protein on postpartum reproduction and energy balance in dairy cattle. *Journal of Dairy Science*. 73: 2342-2349.
15. Ferguson, J. D., D. T. Galligan, T. Blanchard, & M. Reeves. 1993. Serum urea nitrogen and conception rate: the usefulness of test information. *Journal of Dairy Science*. 76: 3742-3746.
16. Folman, Y., H. Newmark, M. Kaim, & W. Koufmann. 1981. Performance, rumen and blood metabolites in high yielding cows fed varying protein percents and protected soybean. *Journal of Dairy Science*. 64: 759.
17. Gustaffson, A.H. & D. L. Palmquist. 1993. Diurnal variation of Rumen ammonia serum urea and milk urea in dairy cows at high and low yield. *Journal of Dairy Science*. 76: 476-484.
18. Hafez, E. S. E. & B. Hafez. 2000. *Reproduction in Farm Animals*. Seventh edition. Lippincott Williams & Wilkins. USA.
19. Hinders, R. 2001. Methionine, choline may improve metabolism in transition rations. *Feedstuffs*. 73(15):10.
20. Howard, H.J., G. P. Alseth, G. D. Adams, L. J. Bush, R. W. Mc New, & L. Y. Dawson. 1987. Influence of dietary protein in reproduction performance. *Journal of Dairy Science*.70: 1563-1571.
21. Jordan, E.R., T. C. Chapman, Q. Holtan, & L. V. Swanson. 1983. Relationship of dietary crude protein to composition of uterine secretions and blood in high Producing postpartum dairy cows. *Journal of Dairy Science*. 66: 1854-1862.
22. Kaim, M., Y. Folman, & H. Neumark. 1983. The effect of protein intake and lactation number on postpartum body weight loss and reproductive performance of dairy cows. . *Journal of Animal production*. 37: 235
23. Oltner, R., M. Emanuelson, & H. Wiktorsson. 1985. Urea concentration in milk in relation to milk yield, live weight, lactation numbers and amount and composition of feed given to dairy cows. *Livestock Production Science*. 12: 47.
24. Refsdal, A. O., L. Beaver, & R. Brufplot. 1985. Urea concentrations in bulk milk as an indicator of the protein supply at the herd level. *Acta Vet. Scand*. 26: 153-163.
25. Ropstate, E. & A. O. Rofsdal. 1987. Herd reproductive performance related to urea concentration in bulk milk. *Acta Vet. Scand*. 28: 55-63.
26. Rosler, D.K, J. D. Fergusen, C. J. Sniffen, & J. Herma. 1993. Dietary protein degradability effects on plasma and milk urea nitrogen and milk non-protein nitrogen in Holstein cows. *Journal of Dairy Science*. 76: 525-534.
27. Royal, M. D., A. O. Darwash, A. P. F. Flint, R. Webb, J. A. Woolims, & G. E. Lamming. 2000. Declining fertility in dairy cattle: changes in traditional and endocrine parameters of fertility. *Journal of Animal Science*. 70: 487-501.

28. SPSS 9.0, 1998 Advanced models syntax reference guide, SPSS INC, USA.
29. Wenninger, A. & O. Distal. 1994. Urea and acetone in milk as indicators for nutritionally caused fertility disorders of dairy cows. Available in: [http:// www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov).
30. Wittwer, F. G., P. Gallardo, J. Reyes, & H. Opitz. 1999. Bulk milk urea concentrations and their relationship with cow fertility in grazing dairy herds in southern Chile. *Preventive Veterinary Medicine*. 38: 159-166.



