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(/ / / / / / / / /)

(P< /)

(P< /)

(P< /)

(R2= /)

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.()

NRC ()

()

.()

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.()

()

)
(

/ () ()
NRC ()

(HPLC) ()

C ()
()
(PITC)

AOAC ()

() NRC () ()

/ / / /
/ / / / /

W36

()

$$= \dots * (\dots)$$

(EDTA)

(.)

/

$$E_x = \frac{C_{18}}{E_m} =$$

(.) SAS

$$y_i = \mu + \alpha_i + e_{ij}$$

(.) SAS NLIN

:()

$$y_i = A + B (x_R - x_{LR})$$

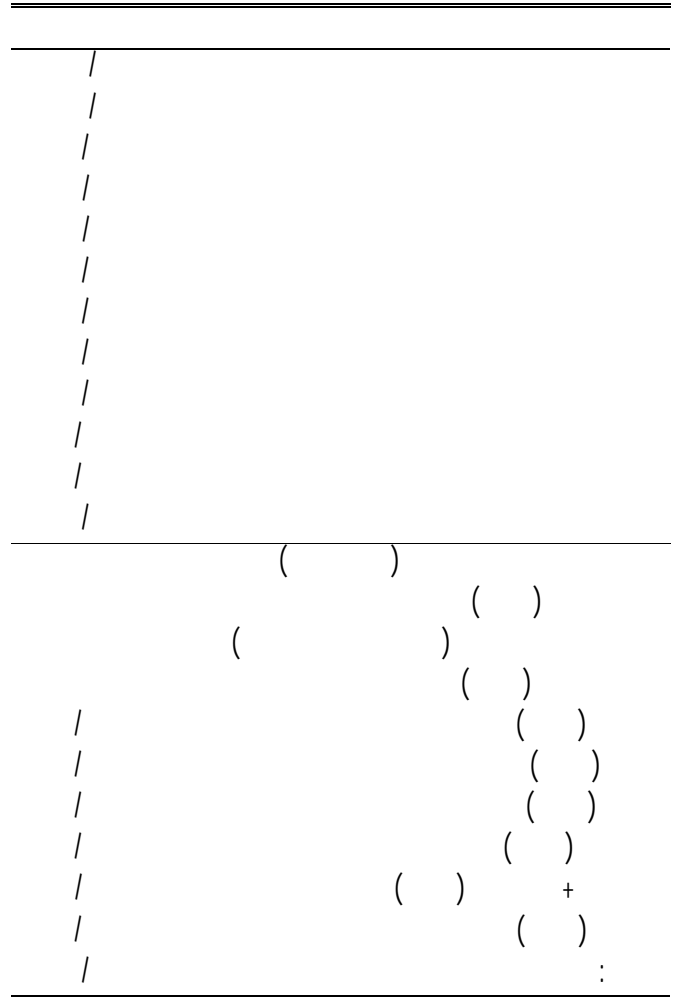
$$y_i = A$$

$$x_i < x_R$$

$$x_i > x_R$$

1. Egg Mass Output

3. Orthopthaldehyde (OPA)



E A
C D₃
K

/ /

y_i

()

X_R

B

A .

X

X_{LR}

)

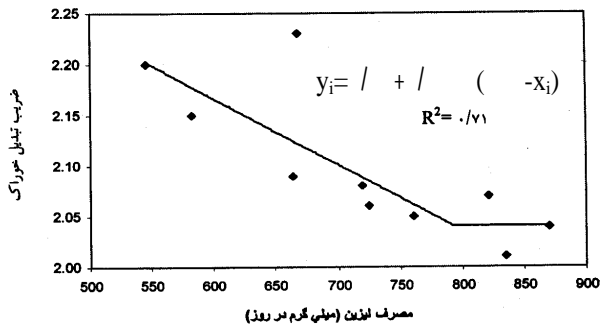
X_i

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\pm

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($P < /$)

/ / /

($p < /$)

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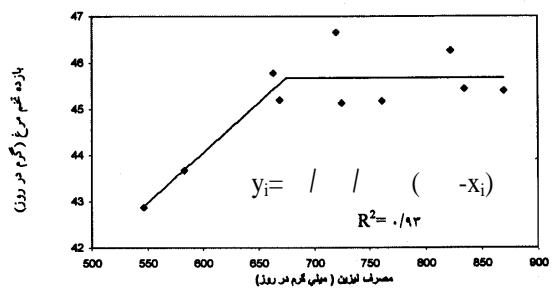
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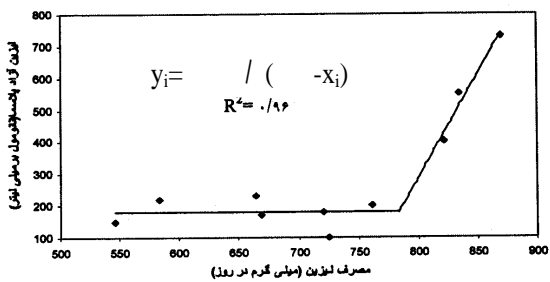


($P < /$)

($P < /$)

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/	/	/	/	/	/	/	/	/	/	/	(/)
/	/ ab	/ abc	/ abc	/ abc	/ a	/ a	/ bc	/ bc	/ bc	/ c	()
/	/ a	/ a	/ a	/ ab	/ ab	/ a	/ a	/ ab	/ bc	/ c	(/ /)
/	/ bc	/ c	/ ab	/ bc	/ bc	/ ab	/ bc	/ a	/ bc	/ bc	(/ /)
/	/ c	/ c	/ bc	/ bc	/ bc	/ bc	/ bc	/ a	/ abc	/ ab	

*

NRC ()

NRC ()

(p < /)

()

()

()

() () (R = /)
/ / /
(R²= /)

()

()

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()

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REFERENCES

3. AOAC, 1990. Official methods of analysis (15th edition). Association of Official Analytical Chemists, Washington D.C.
4. Austic, R.E. 1986. Biochemical description of nutritional effects. In Nutrient Requirement of Poultry and Nutritional Research, Fisher, C. and Boorman, K.N. (eds.), Butterworths, London, pp. 59 - 77.
5. Chi, M.S. & G.M. Speers. 1976. Effects of dietary protein and lysine levels on plasma amino acids, nitrogen retention and egg production in laying hens. J. Nutr. 106: 1122 – 1131.
6. Fisher, C. 1994. Response of laying hen to amino acids. *in*: Amino acids in farm animal nutrition. J.P.F., D,Mello, CAB international . London.UK.
7. Harms, R. H. & F. J. Ivey. 1993. Performance of commercial laying hens fed various supplemental amino acids in a corn- soybean meal diet. J. App. Poult. Res. 2: 273-282.
8. Hy-line. 2000. Hy-line W36 management guide. Hy-line international. Iowa.
9. Leeson, S. & J. D. Summers. 2001. Scott's Nutrition of the Chicken, University Books, Guelph, Ontario, Canada.
10. Leeson, S. & J.D. Summers. 1997. Commercial poultry nutrition. 2nd Edi. University Books.Guelph.
11. Morris, T.R. 1999. Experimental design and analysis in animal sciences. CAB International.UK.
12. Nathanael, A. S. & J. L. Sell. 1980. Quantitative measurement of lysine requirement of the laying hen. Poult. Sci. 59: 594-597.

:

13. National Research Council. 1994. Nutrient Requirement of Poultry. 9th rev. ed. National Academy Press, Washington, DC.
14. Prochaska, J.F., J.B. Carey & D.J. Shafer. 1996. The effect of L-Lysine intake on egg component yield and composition in laying hens. *Poult. Sci.* 75: 1268 - 1277.
15. SAS Institute. 1998. SAS User's Guide, Version 9 edition. SAS Institute Inc., Cary, NC.
16. Schutte, J. B. & W. Smink. 1998. Requirement of the laying hen for apparent fecal digestible lysine. *Poult. Sci.* 77: 677-701.
17. Sibbald, I.R. 1976. A bioassay for true metabolizable energy in feedstuffs. *Poult. Sci.* 55: 303-308.
18. Sohail, S.S., M.M. Bryant & D.A. Roland. 2003. Influence of adding synthetic lysine in corn-soy diets for commercial leghorns. *Int. j. Poult. Sci.* 2: 335-340.
19. Yamamoto, A. & T. Ishibashi. 1997. Usefulness of plasma lysine concentration as a parameter to estimate lysine requirement in a shorter period in laying hens. *Animal Science Technology (Jpn)*. 68:360-366.