

# The Effects of Hen Age, Genotype, Period and Temperature of Storage on Egg Quality (Tavuk Yaşı, Genotip, Depolama Süresi ve Sıcaklığının Yumurta Kalitesine Etkisi)

Zehra BOZKURT \*  Mustafa TEKERLİ \*

\* Department of Animal Science, Faculty of Veterinary Medicine, Afyonkarahisar - TÜRKİYE

## Makale Kodu (Article Code): 2009/041-A

Formula present in the paragraph 5 in the Material and Methods section page 518 in Volume 15, Number 4, Year 2009 were written erroneously. Corrected formula was given below.

Dergimizin 2009 Yılı, 15. Cilt, 4. sayısının, 517-524. sayfalarında basılan makalenin 518. sayfasındaki MATERIAL and METHODS bölümünün 5. paragrafındaki formüller hatalı basılmıştır. Düzeltilmiş formüller aşağıda yeniden verilmiştir.

### **Wrong Formula/Hatalı Formül**

Haugh units = [HU = 100 log (H-1.7W<sup>0.37</sup> + 7.57)]<sup>18</sup>

Albumen index = yolk height/(long diameter of albumen + short diameter of albumen/2) x100<sup>16</sup>

Yolk index = yolk height/yolk width x 100<sup>32</sup>

Shell density = shell weight/3.9782 x egg weight<sup>0.662</sup> x shell thickness<sup>33</sup>

Shell weight per unit surface = shell weight/4.835 W<sup>3.9782</sup> x egg weight<sup>0.7056</sup><sup>34</sup>

### **Corrected Formula/Düzeltilmiş Formüller**

Haugh units = [100 log (H-1.7W<sup>0.37</sup> + 7.57)]<sup>18</sup>

Albumen index = Albumen height/albumen width<sup>16</sup>

Yolk index = Yolk height/yolk width<sup>32</sup>

Shell density = Shell weight/(3.9782 x egg weight<sup>0.7056</sup>) x shell thickness<sup>33</sup>

Shell weight per unit surface = Shell weight/(3.9782 x egg weight<sup>0.7056</sup>)<sup>34</sup>

In addition, there are some mistakes in Table 1, Table 2 and Table 3 on pages 519, 520 and 521 of the same article. Corrected tables were also given below.

We sincerely apologize for the mistake.

Ayrıca, aynı makalenin 519, 520 ve 521. sayfalarında yer alan Tablo 1, Tablo 2 ve Tablo 3'teki verilerin bir kısmı hata içermektedir. Düzeltilen tablolar aşağıda yeniden verilmiştir.

Yanlışlıklardan dolayı özür dileriz.



### **İletişim (Correspondence)**



+90 272 2281312/134



zhra.bozkurt@gmail.com & akinci@aku.edu.tr

**Table 1.** Main and interactive effects on egg weight and weight loss**Tablo1.** Yumurta ağırlığı ve ağırlık kaybına ana ve interaktif faktörlerin etkisi

Treatments				n	Egg Weight (g)		Weight Loss (g)
Genotype	Hen Age (Weeks)	Storage Temperature	Storage Period (Weeks)		Fresh Egg	Stored Egg	
μ					64.22	62.91	1.31
Lohman White				1687	64.00 <sup>b</sup>	62.73 <sup>b</sup>	1.28
Isa Brown				1715	64.45 <sup>a</sup>	63.09 <sup>a</sup>	1.35
	33			1762	62.37 <sup>b</sup>	61.11 <sup>b</sup>	1.26 <sup>b</sup>
	64			1640	66.07 <sup>a</sup>	64.70 <sup>a</sup>	1.37 <sup>a</sup>
		4°C		2364	64.57	63.82 <sup>a</sup>	0.75 <sup>b</sup>
		24°C		1038	63.88	61.99 <sup>b</sup>	1.89 <sup>a</sup>
			0	878	64.03	64.38 <sup>a</sup>	-
			1	987	64.60	63.83 <sup>ab</sup>	0.78 <sup>c</sup>
			3	891	64.57	62.92 <sup>ab</sup>	1.66 <sup>b</sup>
			5	646	63.69	60.84 <sup>b</sup>	2.84 <sup>a</sup>
ANOVA					Probability		
Genotype (G)					*	*	-
Hen age(HA)					**	*	*
Storage temperature (ST)					-	*	**
Storage period (SP)					-	**	**
GxHA					*	*	*
GxST					-	-	-
G x SP					-	*	-
HA x ST					-	-	-
HA x SP					-	-	*
ST x SP					-	*	**
SEM					0.30	0.26	0.08
R <sup>2</sup>					0.16	0.16	0.21

<sup>a-b</sup> Means in a column and treatment variable with no common superscript differ significantly (P<0.05)

**Table 2.** Main and interactive effects on internal egg quality traits

**Tablo 2.** Yumurta iç kalite özelliklerine ana ve interaktif faktörlerin etkisi

Treatments				n	Albumen			Yolk			Haugh Unit
Genotype	Hen Age (Weeks)	Storage Temperature	Storage Period (Weeks)		Width (mm)	Height (mm)	Index	Width (mm)	Height (mm)	Index	
μ					87.97	3.89	0.05	36.00	17.55	0.49	50.00
Lohman White				1687	82.69 <sup>b</sup>	4.08 <sup>a</sup>	0.05 <sup>a</sup>	36.53 <sup>a</sup>	17.59	0.48 <sup>b</sup>	51.96 <sup>a</sup>
Isa Brown				1715	93.25 <sup>a</sup>	3.70 <sup>b</sup>	0.04 <sup>b</sup>	35.18 <sup>b</sup>	17.53	0.50 <sup>a</sup>	47.05 <sup>b</sup>
	33			1762	87.26 <sup>b</sup>	3.95 <sup>a</sup>	0.05 <sup>a</sup>	35.15 <sup>b</sup>	17.35 <sup>b</sup>	0.50 <sup>a</sup>	51.52 <sup>a</sup>
	64			1640	88.69 <sup>a</sup>	3.83 <sup>b</sup>	0.05 <sup>b</sup>	36.57 <sup>a</sup>	17.76 <sup>a</sup>	0.49 <sup>b</sup>	47.48 <sup>b</sup>
		4°C		2364	81.76 <sup>b</sup>	4.52 <sup>a</sup>	0.05 <sup>a</sup>	35.29 <sup>b</sup>	19.09 <sup>a</sup>	0.55 <sup>a</sup>	58.11 <sup>a</sup>
		24°C		1038	94.14 <sup>a</sup>	3.26 <sup>b</sup>	0.04 <sup>b</sup>	36.43 <sup>a</sup>	16.02 <sup>b</sup>	0.45 <sup>b</sup>	40.90 <sup>b</sup>
			0	878	77.21 <sup>c</sup>	4.70 <sup>a</sup>	0.06 <sup>a</sup>	36.77 <sup>a</sup>	18.82 <sup>a</sup>	0.52 <sup>a</sup>	60.23 <sup>a</sup>
			1	987	87.24 <sup>b</sup>	4.13 <sup>a</sup>	0.05 <sup>b</sup>	36.56 <sup>a</sup>	17.67 <sup>b</sup>	0.49 <sup>b</sup>	53.02 <sup>a</sup>
			3	891	92.58 <sup>ab</sup>	3.32 <sup>b</sup>	0.04 <sup>c</sup>	35.75 <sup>b</sup>	17.40 <sup>b</sup>	0.49 <sup>c</sup>	41.52 <sup>b</sup>
			5	646	94.86 <sup>a</sup>	3.41 <sup>b</sup>	0.04 <sup>c</sup>	34.34 <sup>b</sup>	16.35 <sup>c</sup>	0.48 <sup>d</sup>	43.25 <sup>b</sup>
ANOVA					Probability						
Genotype (G)					**	**	**	**	-	**	**
Hen age(HA)					**	*	*	**	**	**	**
Storage temperature (ST)					**	*	**	**	**	**	**
Storage period (SP)					**	**	**	**	**	**	**
GxHA					**	**	**	-	-	*	**
GxST					-	**	-	-	**	**	-
G x SP					**	**	**	*	*	**	**
HA x ST					-	*	**	-	**	**	**
HA x SP					-	**	**	*	**	**	**
ST x SP					**	**	*	**	**	**	**
SEM					0.70	0.09	0.06	0.19	0.10	0.00	1.17
R <sup>2</sup>					0.40	0.17	0.25	0.25	0.32	0.36	0.18

<sup>a-d</sup> Means in a column and treatment variable with no common superscript differ significantly (P<0.05)

**Table 3.** Main effects on external egg quality traits

**Tablo 3.** Yumurta dış kalite özelliklerine ana faktörlerin etkisi

Treatments				n	Egg Shell			Shell Weight Per Unit Surface (mg/cm <sup>2</sup> )
Genotype	Hen Age (Weeks)	Storage Temperature	Storage Period (Weeks)		Weight (g)	Thickness (μm)	Density (g/cm <sup>3</sup> )	
μ					6.02	400.92	2.03	81.15
Lohman White				463	5.92 <sup>b</sup>	399.30 <sup>b</sup>	2.01 <sup>b</sup>	80.25 <sup>b</sup>
Isa Brown				486	6.11 <sup>a</sup>	402.55 <sup>a</sup>	2.04 <sup>a</sup>	82.05 <sup>a</sup>
	33			473	5.95 <sup>b</sup>	403.10 <sup>a</sup>	2.03	81.62 <sup>a</sup>
	64			476	6.07 <sup>a</sup>	398.73 <sup>b</sup>	2.03	80.68 <sup>b</sup>
		4°C		443	5.99	399.97	2.03	80.94
		24°C		506	6.04	401.88	2.03	81.36
			0	263	5.97	402.40	2.01	80.82
			1	234	6.07	400.21	2.04	81.67
			3	221	6.05	398.95	2.05	81.71
			5	231	5.97	402.14	2.00	80.41
ANOVA					Probability			
Genotype (G)					*	**	*	**
Hen age(HA)					**	**	-	*
Storage temperature (ST)					-	-	-	-
Storage period (SP)					-	-	-	-
SEM					0.02	0.23	0.01	0.28
R <sup>2</sup>					0.05	0.02	0.03	0.03

<sup>a-b</sup> Means in a column and treatment variable with no common superscript differ significantly (P<0.05)