

RESULTS AND DISCUSSION

The results of performance and egg quality of native chickens fed dried tomato meal in diets were shown in Table 2. Results showed that tomato meal could be used with inclusion levels up to 8% to native chicken diets having no detrimental effect on egg weight and egg shell thickness. Moreover, it was found that tomato meal had effects on the feed intake, Hen-day egg production, egg mass, FCR, egg shell weight, egg yolk weight and egg yolk color of native chickens.

Leke et al. (2015) in previous study reported that tomato meal can be used as an alternative feedstuff in laying hen diets to substitute based diet, at inclusion levels up to 8% without negative effects on egg quality. Studies by Nobakht and Safamehr (2007) indicated that feeding of dried tomato pomace increased feed intake, egg production, egg weight and eggshell weight. Feed conversion ratio of reference diet, dried tomato pulp were better than other treatments. Some authors have found that supplementing dried tomato pomace in laying hens diet did not influence performance parameters but increase yolk color value (Mansoori et al., 2008). In a study by Calislar and Uygur (2010), dried tomato pulp had a significant effect on the egg shape index and egg yolk index, whereas, dried tomato pulp had no significant effect on the albumen index and Haugh unit. This result is similar to those reported by Mitsuhiro et al. (1994) who found a significant increase in egg mass was observed with reference diet, 2% red pepper and 5% dried tomato pulp compare to the control diet. In current study, egg shell thickness was not affected by dietary treatments.

Jafari et al. (2006) reported no significant differences in egg shell thickness and Haugh unit of laying hens fed on diets containing dried tomato pulp compared to hens fed on a control diet. This result is similar to those reported by Yannakopoulos et al. (1992), Nobakht and Safamehr (2007) and Mansoori et al. (2008), that the dietary addition of dried tomato pomace did not have any significant effect on FI. However, Jafari et al. (2006) and Calislar and Uygur (2010) found that DTP resulted in greater FCR. It has been shown that feeding hen diets containing DTP at inclusion rates up to 10% increased EP (Nobakht and Safamehr, 2007). EW was not affected by dietary treatments, a finding which is in agreement with the previously reported data (Jafari et al., 2006; Mansoori et al., 2008). It was observed that the dried tomato meal used in this study did not exhibit any negative effects on the egg quality. These discrepancies in results may be attributed to tomato variety, levels of dietary supplementation with tomato by-product, tomato processing conditions, and breed of native chickens.

CONCLUSION

It can be concluded that tomato meal can be used in native chicken diets up to 8% without negative effects on performance and egg quality.

KEYWORD : Egg, Chicken, Native, Performance, Tomato

Table 1. Chemical Composition of the Diets

Nutrients	Diets				
	R0 (0% TM)	R1 (2% TM)	R2 (4% TM)	R3 (6% TM)	R4 (8% TM)
Crude protein (%)	17.34	17.30	17.29	17.27	17.26
Fat (%)	5.35	5.12	5.04	4.96	4.89
Crude fiber (%)	3.76	5.39	5.93	6.47	7.03
Ca (%)	2.93	2.81	2.77	2.73	2.69
P (%)	0.62	0.65	0.66	0.67	0.68
ME (Kcal/kg)	2742	2722	2715	2709	2702

Table 2. Effect of Dried Tomato Meal in Diet on Performance and Egg Quality of Native Chickens

Variable	Treatments					SEM	P Value
	R0	R1	R2	R3	R4		
Feed Intake	75.93 ^a	75.90 ^a	76.91 ^{ab}	77.85 ^{bc}	78.18 ^c	0.235	.000
Egg Weight (g)	39.88	40.08	40.01	41.11	41.51	0.228	.059
HDP (%)	57.76 ^a	64.01 ^c	62.49 ^b	62.44 ^b	62.31 ^b	0.476	.000
Egg Mass (g/hen/day)	40.10 ^a	44.66 ^b	43.40 ^b	44.15 ^b	44.94 ^b	0.414	.000
FCR	1.89 ^b	1.70 ^a	1.77 ^a	1.76 ^a	1.74 ^a	0.016	.000
Egg Shell Weight (g)	3.62 ^b	3.35 ^a	3.38 ^a	3.62 ^b	3.73 ^b	0.041	.002
Egg Shell Thickness (mm)	0.35	0.35	0.35	0.34	0.36	.001	.268
Egg Yolk Weight (g)	11.43 ^a	11.52 ^a	11.98 ^{ab}	12.46 ^b	11.88 ^{ab}	0.119	.031
Egg Yolk Color	10.75 ^a	11.56 ^b	11.58 ^b	11.90 ^b	12.38 ^c	0.121	.000

Notes: ^{a-c}Means in a row with different superscripts are significantly different at the *P*-value shown
¹SEM = pooled standard error of mean (n=5)