Effect of dried mealworms (*Tenebrio molitor*) larvae and olive leaves (*Olea Europeae L.*) on growth performance, carcass yield and some blood parameters of Japanese quail

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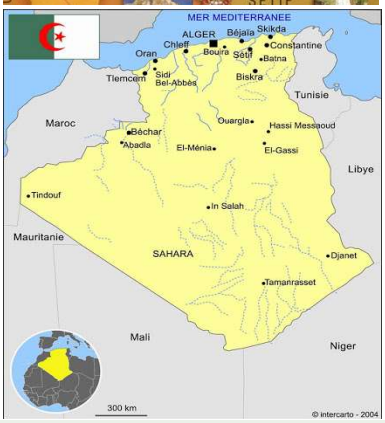
Aim

The aim of this study was to investigate the effects of *Tenebrio molitor* (TM) meal and/or olive leaves (OL) supplementation to the diet of quail on their growth performance, carcass yield and some blood parameters.



Materials and Methods

Experimental animals, housing & design

- 144 Japanese quail
- Pen size: 100 × 80 × 200 cm
- Fourth groups: Diet1, Diet2, Diet3 , Diet4
- Three replications per feeding group.

Diet1	Diet2	Diet3	Diet4
Pen5	Pen2	Pen1	Pen4
Pen10	Pen7	Pen3	Pen6
Pen12	Pen11	Pen8	Pen9

One hundred and forty-four 1-day-old Japanese quails (body weight: 29.9±0.46 g, mean ± SE) were divided into four groups of 36 chicks, with three replications. The chicks in group 1 were fed with a standard commercial diet (Diet1); group 2 received the Diet1 diluted with 3% of dried TM larvae (Diet2); group 3 received the Diet1 with 3% of OL (Diet3); and group 4 received the Diet1 with 3% of TM and 2% of OL (Diet4). Feed and water were provided *ad libitum*.

RESULTS

Fig 1. Growth performance of growing Japanese quail as affected by Tenebrio molitor (TM) and/or olive leaves (OL)

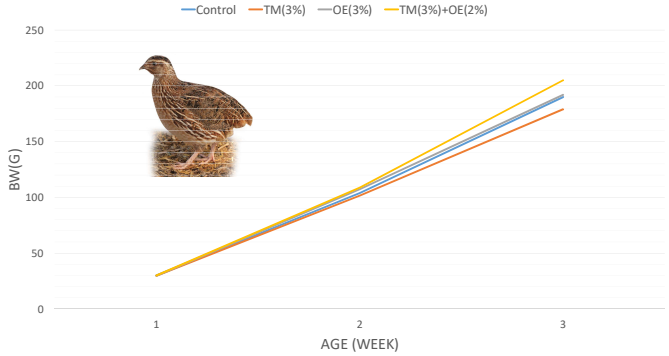


Fig2. Carcass traits and relative organs weights (Lsmeans±SE) of growing quail as affected by Tenebrio molitor (TM) and/or olive leaves (OL)

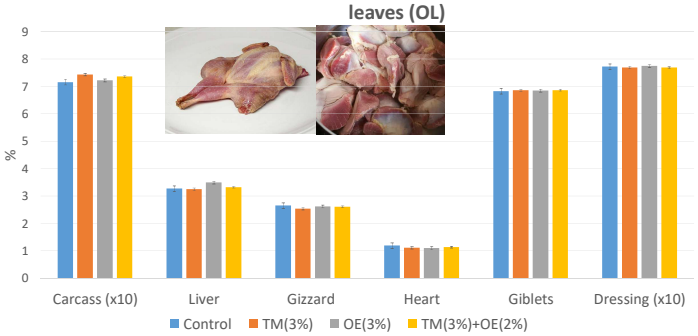


Table 1. Blood constituants of Japanese quail as affected by *Tenebrio molitor* (TM) and/or olive leaves (OL)

	Control	TM(3%)	OL(3%)	TM(3%)+OL(2%)	SEM	P value
TP (g/dL)	3,02	3,04	2,97	3,15	0,07	0,34
ALB (g/dL)	1,3	1,35	1,33	1,31	0,02	0,46
GLOB (g/dL)	1,7	1,68	1,72	1,71	0,04	0,97
A/G(%)	0,77	0,8	0,78	0,76	0,01	0,71
Creatinine (mg/dL)	0,27	0,25	0,28	0,26	0,01	0,34
Urea (g/dL)	6,81	6,67	6,76	6,53	0,13	0,46

Table 2. Lipid profile of Japanese quail as affected by Tenebrio molitor (TM) and/or olive leaves (OL)

	Control	TM(3%)	OL(3%)	TM(3%)+OL(2%)	SEM	P value
TC (mg/dL)	190,67	196,83	194,33	197,01	2,72	0,33
TG (mg/dL)	218,5	220,17	220,08	214,58	6,85	0,93
HDL (mg/dL)	54,5	56,05	54,33	55,75	1,73	0,87
LDL (mg/dL)	95,83	92,67	91,58	99,08	2,35	0,12
VLDL (mg/dL)	43,58	42,41	43,75	45,08	1,52	0,68

CONCLUSION

The results demonstrated that the supplementation with TM (3%) and OL (2%) of quail diet improved body weight at 5 weeks old, reduced FCR and did not negatively influence carcass yield and blood parameters of Japanese quail.

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