

	EW			IO			<i>P</i> value		
	< 11.76	> 11.76	SEM	Control	$\alpha$ -tocopherol	SEM	EW	IO	EW*IO
Eggshell temperature (°C)									
Day 7	36.01	34.59	0.13	34.76	35.84	0.14	<0.001	<0.001	0.788
Day 9	36.46	36.02	0.08	35.75	36.73	0.08	0.004	<0.001	<0.001
Day 11	37.69	36.91	0.05	37.34	37.26	0.05	<0.001	0.285	0.026
Day 13	37.28	37.30	0.09	37.45	37.12	0.09	0.859	0.012	0.001
Day 15	37.84	38.23	0.13	38.06	38.00	0.13	0.043	0.766	0.049
Rectal temperature (°C)	36.42	36.83	0.18	36.79	36.46	0.18	0.111	0.196	0.990
Hatching time (hours)	394.00	392.00	1.00	391.00	395.00	1.00	0.116	0.011	0.020
Hatchability <sup>1</sup> (%)	84.91	80.62	5.21	79.05	85.97	4.56	0.513	0.786	0.503
Embryonic mortalities (%)									
Early	4.31	11.31	3.60	9.65	6.48	3.66	0.268	0.584	0.924
Mid	3.27	6.04	3.31	5.89	3.42	2.98	0.540	0.584	0.515
Late	7.51	2.03	2.47	5.41	4.13	1.76	0.143	0.425	0.847
Total <sup>2</sup>	15.09	19.38	5.07	20.95	14.03	4.11	0.680	0.389	0.479
Chick weight (g)									
387 <sup>3</sup>	7.81 <sup>b</sup>	8.96 <sup>a</sup>	0.18	8.58	8.19	0.20	0.001	0.229	0.624
391	7.70 <sup>b</sup>	8.79 <sup>a</sup>	0.11	8.37	8.13	0.12	<0.001	0.142	0.125
395	7.64 <sup>b</sup>	8.87 <sup>a</sup>	0.15	8.44	8.07	0.16	<0.001	0.102	0.817
399	7.50 <sup>b</sup>	8.73 <sup>a</sup>	0.09	8.12	8.12	0.09	<0.001	0.990	0.165
403	7.64 <sup>b</sup>	8.73 <sup>a</sup>	0.16	8.05	8.32	0.17	<0.001	0.256	0.064
407	7.69 <sup>b</sup>	8.76 <sup>a</sup>	0.16	8.54 <sup>a</sup>	7.91 <sup>b</sup>	0.16	<0.001	0.008	0.405

EW: egg weight. IO: in ovo administration. SEM: standard error of the mean. <sup>1</sup> Hatchability: hatched chick number / fertilised egg number · 100. <sup>2</sup>The pip dead was not included in total dead. <sup>3</sup> Hours: measured hour for each newly hatched chick.