animal

Erratum

Beneficial effects of enrichment of chicken meat with n-3 polyunsaturated fatty acids, vitamin E and selenium on health parameters: a study on male rats – ERRATUM

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During the production process the column headings of Tables 1–5 were omitted. The correct representation of Tables 1–5 are shown here.

Table 1 *Composition of rat diets (g/kg of diet)*

Ingredients	Dietary treatments[1]			
	L	RF	RFE	RFES
Wheat	180	180	180	180
Vitacel (cellulose)	60	60	60	60
Lyophilized BECC[2]	240	240	240	240
Lard	34	37	39	40
Wheat starch	368	365	363	362
Saccharose	80	80	80	80
Mono-Ca-phosphate	10	10	10	10
Limestone	15	15	15	15
NaCl	3	3	3	3
Vitamin–mineral premix[3]	10	10	10	10

[1]Diets contained boiled edible components of chicken carcass (BECC) prepared from chickens fed between 22 and 35 days of life diets differing in composition of added fat, vitamin E (vE) and selenium (Se) content, as follows.
[2]L = lard, 80 mg vE and 0.3 mg Se/kg; RF = rape seeds and fish oil, 80 mg vE and 0.3 mg Se/kg; RFE = rape seeds and fish oil, 150 mg vE and 0.3 Se/kg; RFES = rape seeds and fish oil, 150 mg vE and 0.7 mg Se/kg.
[3]Provided per kg of diet: vitamin A, 15 000 IU; vitamin D_3, 1000 IU; vitamin E (α-tocopherol acetate), 30 mg; vitamin K_3, 5 mg; vitamin B_1, 12 mg; vitamin B_2, 12 mg; nicotinic acid, 40 mg; vitamin B_6, 10 mg; vitamin B_{12}, 0.05 mg; biotin, 0.2 mg; folic acid, 4 mg; choline, 1500 mg; Ca-pantothenate, 20 mg; Fe, 75 mg; Mn, 10 mg; Cu, 8 mg; Zn, 25 mg; I, 0.15 mg; Co, 0.15 mg; Se, 0.1 mg; inositol, 100 mg.

Table 2 *Composition and fatty acid profile of boiled edible components of chicken carcass (BECC) and rat diets (g/kg)*

Indices	BECC[1]				Rat diets[2]			
	L	RF	RFE	RFES	L	RF	RFE	RFES
Dry matter (g/kg)	970.5	974.2	961.0	951.2	867.3	879.5	879.1	876.9
CP (g/kg)	729.4	742.5	736.9	740.6	180.5	192.5	186.9	185.6
Crude fat (g/kg)	194.7	180.0	175.4	167.0	78.9	76.6	77.7	78.0
Se (mg/kg)	0.90	0.96	1.19	1.36	0.19	0.31	0.23	0.30
Vitamin E[3] (mg/kg)	73.0	73.6	93.3	100.9	50.2[4]	50.4[4]	55.1[4]	56.9[4]
Fatty acid profile (g/100 g total fatty acids)								
C14:0	0.5	0.6	0.4	0.4	0.7	0.7	0.7	0.8
C16:0	24.0	20.8	19.2	19.9	23.6	26.3	22.8	22.4
C18:0	7.8	7.4	6.5	6.2	6.7	8.6	8.1	6.6
SFA[5]	32.5	28.8	26.2	26.6	31.1	35.7	31.7	29.9
C16:1	7.2	5.1	5.0	5.0	0.9	1.1	0.6	0.9
C18:1	44.2	42.1	47.7	47.3	50.6	50.4	49.5	53.0
MUFA[6]	51.7	48.0	53.5	53.1	51.6	51.7	50.4	54.2
C18:2n-6 (LA)	14.3	19.1	17.1	17.2	12.2	7.1	12.5	10.4
C20:4n-6 (AA)	0.8	0.9	0.8	0.8	0.3	0.2	0.3	0.2
PUFAn-6[7]	15.2	20.1	18.1	18.1	12.6	7.4	12.8	10.6
C18:3n-3 (ALA)	0.5	2.5	1.7	1.8	0.4	0.7	1.0	0.9
C22:5n-3 (DPA)	0.06	0.19	0.20	0.19	0.04	0.08	0.07	0.07
$\sum$EPA and DHA	0.1	0.4	0.3	0.3	0.03	0.11	0.08	0.13
PUFAn-3[8]	0.6	3.0	2.2	2.3	0.5	0.9	1.1	1.1
PUFAn-6/n-3	24.1	6.6	8.0	7.9	31.5	7.9	11.3	9.6

SFA = saturated fatty acid; MUFA = monounsaturated fatty acid; PUFA = polyunsaturated fatty acid; ALA = α-linolenic acid; DPA = docosapentaenoic acid; DHA = docosahexaenoic acid; EPA = eicosapentaenoic acid.

All values for unsaturated fatty acids represent a mix of isomers.

[1]Chickens were fed diets differing in composition of added fat, vitamin E (vE) and selenium (Se) content as follows: L = lard, 80 mg vE and 0.3 mg Se/kg; RF = rape seeds and fish oil, 80 mg vE and 0.3 mg Se/kg; RFE = rape seeds and fish oil, 150 mg vE and 0.3 Se/kg; RFES = rape seeds and fish oil, 150 mg vE and 0.7 mg Se/kg.

[2]Diets contained BECC from respective groups of chickens (240 g/kg).

[3]Sum of δ-, γ-, α-tocopherol and α-tocopherol acetate.

[4]Calculated.

[5]SFA = C14:0 + C16:0 + C18:0 + C20:0 + C22:0 + C24:0.

[6]MUFA = C16:1 + C17:1 + C18:1 + C20:1 + C21:1 + C22:1.

[7]PUFAn-6 = C18:2n-6 + C18:3n-6 + C20:2n-6 + C20:3n-6 + C20:4n-6 + C22:4n-6.

[8]PUFAn-3 = C18:3n-3 + C20:5n-3 + C22:5n-3 + C22:6n-3.

Table 3 *Effect of feeding diets containing boiled edible components of chicken carcass (BECC) on the lipid profile in the brain and liver of rats*

FA (% of total FA)	Dietary treatments[1]					Contrasts (P-value)		
	L	RF	RFE	RFES	SEM	Animal fat v. other lipids[2]	vE basal v. increased[3]	Se basal v. increased[4]
Liver lipids								
SFA	49.60	46.59	45.22	50.35	1.611	Ns	Ns	Ns
MUFA	31.22	33.74	33.01	29.21	1.674	Ns	Ns	Ns
PUFA	19.18	19.67	21.77	20.43	1.014	Ns	Ns	Ns
C18:2n-6 (LA)	5.05^a	8.49^b	11.10^b	8.79^b	0.660	>0.05	>0.05	>0.05
C20:4n-6 (AA)	8.45	5.35	6.49	8.84	0.969	Ns	Ns	Ns
PUFAn-6	13.69^a	14.08^{ab}	17.87^b	18.76^b	1.195	>0.05	>0.01	>0.05
C18:3n-3 (ALA)	trace	0.52^b	0.40^b	0.52^b	0.031	Ns	>0.01	>0.01
C20:5n-3 (EPA)	trace	0.15^b	0.16^b	0.19^b	0.014	>0.01	>0.01	>0.01
C22:5n-3 (DPA)	0.30^{ab}	0.30^{ab}	0.27^a	0.42^b	0.036	Ns	Ns	Ns
C22:6n-3 (DHA)	0.78	0.81	0.79	1.00	0.094	Ns	Ns	Ns
PUFAn-3	0.94^a	1.76^b	1.62^b	2.09^b	0.140	>0.01	>0.01	>0.01
∑EPA and DHA	0.78^a	0.96^{ab}	0.95^a	1.19^b	0.092	>0.01	>0.05	>0.01
PUFAn-6/n-3	9.34^b	4.01^a	3.88^a	3.99^a	0.980	>0.01	>0.01	>0.01
Brain lipids								
SFA	58.21^a	57.69^a	60.07^b	57.78^a	0.645	Ns	Ns	Ns
MUFA	30.85	30.32	28.56	30.43	0.687	Ns	Ns	Ns
PUFA	10.93^a	11.99^b	11.37^{ab}	11.79^{ab}	0.240	>0.01	Ns	Ns
C18:2n-6 (LA)	0.14^a	0.26^b	0.20^{ab}	0.20^{ab}	0.029	>0.05	Ns	Ns
C20:4n-6 (AA)	6.14	5.99	5.76	5.71	0.127	>0.05	>0.05	Ns
PUFAn-6	6.40	6.37	6.09	6.06	0.139	Ns	>0.05	Ns
C18:3n-3 (ALA)	Trace	Trace	Trace	Trace				
C20:5n-3 (EPA)	Trace	Trace	Trace	Trace				
C22:5n-3 (DPA)	0.06	0.05	0.05	0.08	0.013	Ns	Ns	Ns
C22:6n-3 (DHA)	3.92^a	4.96^b	4.75^{ab}	5.05^b	0.224	>0.01	Ns	Ns
PUFAn-3	4.43^a	4.99^b	4.78^b	5.01^b	0.219	>0.01	Ns	>0.05
∑EPA and DHA	3.98^a	4.96^b	4.75^{ab}	4.99^b	0.216	>0.01	Ns	Ns
PUFAn-6/n-3	1.46^a	1.30^b	1.27^b	1.21^b	0.029	>0.01	>0.01	Ns

FA = fatty acid; vE = vitamin E; Se = selenium; SFA = saturated fatty acid; MUFA = monounsaturated fatty acid; PUFA = polyunsaturated fatty acid; ALA = α-linolenic acid; DPA = docosapentaenoic acid; DHA = docosahexaenoic acid; EPA = eicosapentaenoic acid.

All values for unsaturated fatty acids represent a mix of isomers.

[a,b]Means with different letters within rows differ significantly (P ⩽ 0.05).

[1]Diets contained BECC (240 g/kg) from chickens fed diets differing in composition of added fat, vE and Se content as follows: L = lard, 80 mg vE and 0.3 mg Se/kg; RF = rape seeds and fish oil, 80 mg vE and 0.3 mg Se/kg; RFE = rape seeds and fish oil, 150 mg vE and 0.3 Se/kg; RFES = rape seeds and fish oil, 150 mg vE and 0.7 mg Se/kg.

[2]L v. RF, RFE, RFES.

[3]L, RF v. RFE RFES.

[4]L, RF, RFE v. RFES; SFA = C14:0 + C16:0 + C18:0 + C20:0 + C22:0 + C24:0; MUFA = C16:1 + C17:1 + C18:1 + C20:1 + C21:1 + C22:1; PUFAn-6 = C18:2n-6 + C18:3n-6 + C20:2n-6 + C20:3n-6 + C20:4n-6 + C22:4n-6; PUFAn-3 = C18:3n-3 + C20:5n-3 + C22:5n-3 + C22:6n-3.

Table 4 *Effect of feeding diets containing boiled edible components of chicken carcass (BECC) on concentrations of tocopherols (μg/g) and cholesterol (100 mg/g) in the liver of rats (n = 10)*

Indices	Dietary treatments[1]					Contrasts (P-value)		
	L	RF	RFE	RFES	SEM	Animal fat v. other lipids[2]	vE basal v. increased[3]	Se basal v. increased[4]
δ-Tocopherol	5.47^a	7.77^b	7.77^b	6.96^{ab}	0.463	>0.01	Ns	>0.01
γ-Tocopherol	0.16^a	0.24^b	0.26^b	0.26^b	0.437	>0.01	>0.05	>0.01
α-Tocopherol	20.43	23.92	22.35	29.92	2.992	Ns	Ns	Ns
α-Tocopherol acetate	39.53^a	59.35^{ab}	78.31^b	66.25^b	5.740	>0.01	>0.01	>0.01
Total cholesterol	137.5	160.5	162.1	142.4	10.57	Ns	Ns	Ns

vE = vitamin E; Se = selenium.

[a,b]Means with different letters within rows differ significantly at P ⩽ 0.05.

[1]Diets contained BECC (240 g/kg) from chickens fed diets differing in composition of added fat, vE and Se content as follows: L = lard, 80 mg vE and 0.3 mg Se/kg; RF = rape seeds and fish oil, 80 mg vE and 0.3 mg Se/kg; RFE = rape seeds and fish oil, 150 mg vE and 0.3 Se/kg; RFES = rape seeds and fish oil, 150 mg vE and 0.7 mg Se/kg.

[2]L v. RF, RFE, RFES.

[3]L, RF v. RFE RFES.

[4]L, RF, RFE v. RFES.

Table 5 *Effect of feeding diets containing boiled edible components of chicken carcass (BECC) on biochemical and haematology markers in rats (n = 10)*

| Indices | | Dietary treatments[1] | | | | | Contrasts (P-value) | | |
		L	RF	RFE	RFES	SEM	Animal fat *v.* other lipids[2]	vE basal *v.* increased[3]	Se basal *v.* increased[4]
Biochemical markers	Range[5]								
Triglycerides (mmol/l)	0.56 to 2.23	4.10	3.16	4.32	4.10	0.329	Ns	Ns	Ns
Total cholesterol (mmol/l)	0.51 to 2.85	2.26^{ab}	2.04^a	2.37^{ab}	2.61^b	0.126	Ns	>0.05	Ns
HDL cholesterol (mmol/l)	nf	0.80^a	0.80^a	0.79^a	0.98^b	0.040	Ns	Ns	Ns
ALT (U/l)	10 to 80	33.6	36.0	35.8	37.6	1.85	Ns	Ns	Ns
AST (U/l)	20 to 100	57.1^{ab}	55.6^a	64.4^{ab}	69.5^b	3.24	Ns	>0.01	Ns
Albumin (g/l)	30 to 50	39.6^a	39.8^a	40.2^{ab}	41.3^b	0.38	Ns	>0.05	Ns
Total protein (g/dl)	5.0 to 80	76.0^a	75.5^a	77.8^{ab}	82.5^b	1.29	Ns	>0.01	Ns
Cholinesterase (U/l)	nf	326.8^a	365.5^{ab}	326.2^a	410.8^b	15.57	Ns	Ns	Ns
Haematology markers	Range[6]								
WBC ($10^3/mm^3$)	3.0 to 15.0	6.0^b	6.9^b	1.1^a	1.9^a	1.02	Ns	>0.01	>0.05
RBC ($10^6/mm^3$)	5.0 to 12.0	9.4^a	10.2^{ab}	10.6^b	10.7^b	0.30	>0.01	>0.01	Ns
HGB (g/dl)	11.1 to 18.0	15.3^a	15.5^{ab}	17.0^b	17.1^b	0.46	>0.05	>0.01	>0.05
HCT (%)	36.0 to 52.0	47.3^a	50.5^{ab}	55.1^b	55.3^b	1.63	>0.01	>0.01	Ns
MCV (fL(μm^3))	46.3 to 56.2	50.4^{ab}	49.5^a	51.7^b	51.8^b	0.39	Ns	>0.01	>0.05
MCH (pg)	12.0 to 24.5	16.3^b	15.2^a	16.0^b	16.0^b	0.19	>0.05	Ns	Ns
MCHC (g/dl)	21.6 to 42.0	32.3^b	30.7^a	30.8^a	31.0^a	0.31	>0.01	Ns	Ns
PLT ($10^3/mm^3$)	574 to 1253	341.8^a	406.9^a	644.8^b	593.7^b	41.38	>0.01	>0.01	Ns

vE = vitamin E; Se = selenium; HDL = high-density lipoprotein; ALT = alanine aminotransferase; AST = aspartate aminotransferase; WBC = white blood cells; RBC = red blood cells; HGB = haemoglobin; HCT = haematocrit; MCV = mean corpuscular volume; MCH = mean corpuscular haemoglobin; MCHC = mean corpuscular haemoglobin concentration; PLT = platelet count; nf = not found.

[a,b]Means with different letters within rows differ significantly ($P < 0.05$).

[1]Diets contained BECC (240 g/kg) from chickens fed diets differing in composition of added fat, vE and Se content as follows: L = lard, 80 mg vE and 0.3 mg Se/kg; RF = rape seeds and fish oil, 80 mg vE and 0.3 mg Se/kg; RFE = rape seeds and fish oil, 150 mg vE and 0.3 Se/kg; RFES = rape seeds and fish oil, 150 mg vE and 0.7 mg Se/kg.

[2]L *v.* RF, RFE, RFES.

[3]L, RF *v.* RFE RFES.

[4]L, RF, RFE *v.* RFES.

[5]For Wistar rats aged 6 to 12 weeks (Evans, 2009).

[6]For Wistar male rats aged 8 to 16 weeks (Giknis and Clifford, 2008).

The Publisher apologises for the error.

Reference

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