



MEZINÁRODNÍ TESTOVÁNÍ DRŮBEŽE
státní podnik, ÚSTRAŠICE

390 02 Tábor 2

Tel.: 381 200 320

**4th part fattening test of the final product of test
of parents from of broilers**

XXXXX

4. 6. 2025 - 9. 7. 2025

Study Investigator: Ing. Hana Horná
Ing. Markéta Krekulová

Ústrašice, July 2025

1 Basic tests information

1.1 The basic dates

setting in the hatchery:	13 May 2025
beginning of test:	4 June 2025
end of the test:	9 July 2025

1.2 Location of the test

Mezinárodní testování drůbeže, s.p. Ústrašice, Czech Republic

2 Material and methods

2.1 Material

There were 4 different samples in this test. Each sample consisted of 630 hatching eggs of broilers xxxxx. There were 390 chicken in each sample, divided into 3 pens (130 broilers in each pen).

The parent flock is 60 weeks old at the time of hatching eggs collection.

Treatment		Description
1	T1	xxxxx
2	T2	xxxxx
3	T3	xxxxx
4	T4	xxxxx

2.2 Housing system

Pullets were kept in windowless house with full control of the environment. They were kept in deep litter system. Manually filled tube feeders and nipple automatic drinkers were used.

2.3 Lighting programme

Pullets were kept in windowless house. All the birds were submitted to the following lighting programme.

Age	Hours of light	Hours of darkness
Day 1 – 7	23	1
Day 8 – 32	18	6
Day 33 – 35	23	1

2.4 Stocking density

16 broilers per square meter

2.5 Feeding

Feed was produced in Mezinárodní testování drůbeže, s.p.

Day 1 – 14 Starter (BR1)

Day 15 – 28 Grower (BR2)

Day 29 – 35 Grower (BR3)

Diet formulas – treatment T1, T2

	Starter BR1	Grower BR2	Finisher BR3
Age	Days 1 - 14	Days 15 - 28	Day 29 - 35
Components (%)			
SBM	39.77	35.43	29.14
Wheat	32.12	38.92	46.41
Maize	18.00	15.80	15.40
Soybean oil	5.43	6.06	5.64
Limestone	1.42	1.01	0.93
MCP	1.69	1.33	1.08
Salt	0.27	0.27	0.27
Sodium bicarbonate	0.15	0.15	0.15
L-lysine	0.29	0.23	0.28
L-threonine	0.16	0.13	0.13
DL-methionine	0.20	0.17	0.16
Premix AMV BR1-PLUS 0,5%	0.50	-	-
Premix AMV BR2-PLUS 0,5%	-	0.50	-
Premix AMV BR3-PLUS 0,5%	-	-	0.50
Nutrient content			
Crude protein (g/kg)	230.02	214.91	195.01
ME (MJ/kg)	12.39	12.80	13.00
Lysine (g/kg)	14.75	13.22	12.06
Methionine (g/kg)	7.24	6.55	6.37
Met.+Cys. (g/kg)	11.09	10.20	9.74
Ca (g/kg)	9.48	7.49	6.51
P dig. (g/kg)	4.99	4.20	3.61
Na (g/kg)	1.59	1.59	1.58

Diet formulas – treatment T3, T4

	Starter BR1	Grower BR2	Finisher BR3
Age	Days 1 - 14	Days 15 - 28	Day 29 - 35
Components (%)			
SBM	39.21	34.93	28.52
Wheat	34.37	41.14	48.68
Maize	18.00	15.80	15.40
Soybean oil	3.72	4.34	3.92
Limestone	1.43	1.01	0.93
MCP	1.69	1.32	1.07
Salt	0.27	0.27	0.27
Sodium bicarbonate	0.15	0.15	0.15
L-lysine	0.30	0.24	0.27
L-threonine	0.16	0.13	0.13
DL-methionine	0.20	0.17	0.16
Premix AMV BR1-PLUS 0,5%	0.50	-	-
Premix AMV BR2-PLUS 0,5%	-	0.50	-
Premix AMV BR3-PLUS 0,5%	-	-	0.50
Nutrient content			
Crude protein (g/kg)	229.94	215.07	194.99
ME (MJ/kg)	12.01	12.40	12.60
Lysine (g/kg)	14.74	13.22	12.05
Methionine (g/kg)	7.24	6.55	6.38
Met.+Cys. (g/kg)	11.10	10.22	9.76
Ca (g/kg)	9.52	7.49	6.48
P dig. (g/kg)	5.00	4.19	3.59
Na (g/kg)	1.60	1.59	1.58

Feed analyses for nutrient contents were performed at the laboratory of xxxxx

T1, T2:

Nutrient content	Starter BR1	Grower BR2	Finisher BR3
Crude protein (g/kg)	226	215	188
Dry matter (%)	89.5	89.9	89.1
Fat (g/kg)	72.7	80.1	74.9
Ash (g/kg)	60.4	51.0	48.4
Starch (g/kg)	352	384	420
Reducing sugars (g/kg)	56.2	53.0	43.5
P (g/kg)	7.69	6.75	6.19
Ca (g/kg)	9.66	7.70	6.70
ME (MJ/kg)	12.6	13.2	13.0

T3, T4:

Nutrient content	Starter BR1	Grower BR2	Finisher BR3
Crude protein (g/kg)	227	213	186
Dry matter (%)	89.5	89.8	89.0
Fat (g/kg)	57.9	64.4	58.5
Ash (g/kg)	60.1	51.2	49.5
Starch (g/kg)	376	393	425
Reducing sugars (g/kg)	57.5	52.6	40.7
P (g/kg)	7.64	6.87	6.19
Ca (g/kg)	9.58	7.63	7.03
ME (MJ/kg)	12.5	12.7	12.5

The feed was without coccidiostats. xxxxx (1 kg/tonne) was in every group of feed.

2.6 Veterinary precautions

The chicken house was disinfected by xxxxx before the chick placement. After the chicks hatched, a spray vaccination against coccidiosis (xxxxx) was applied. On the first days old chickens was applied to the water solution of permanganate. On days 1 and 12 chickens were vaccinated with xxxxx

3 Parameters recorded

3.1 Live weight

Live weight was measured on days 1 (all the birds in each pen were weighed altogether), 14 (all the birds in each pen were weighed altogether, without fasting). On day 21 and 28 birds were weighed individually without fasting. On day 35 birds were weighed individually, after 12 hours of fasting.

3.2 Feed conversion ratio (FCR)

Feed conversion ratio was calculated as feed consumption per 1 kg of live weight for the periods 1 – 14 days, 1 – 21 days, 1 – 28 days and 1 – 35 days.

3.3 Mortality

All pens were checked three times a day to see if there were any dead or ill birds. Dead chickens were registered by date and reason of mortality on the day of death.

3.4 Carcass analysis

The carcass analysis was done on 3 cocks and 3 hens per each pen on day 35. Breast muscles were weighed without skin and thigh muscles with bone and skin.

3.5 Statistical analyses

Performance results of live weight at the age of 35 days were statistically evaluated.

4 Results

Tab. No.	1	Hatchability
	2a	Broiler results at the age of 14 days
	2b	Broiler results at the age of 21 days
	2c	Broiler results at the age of 28 days
	2d	Broiler results at the age of 35 days
	3	Mortality during growing period at the age of 35 days
	4	Results of carcass analysis
	5	Statistical analysis
	6	Performance results per pen
	6a	Broiler results at the age of 14 days
	6b	Broiler results at the age of 21 days
	6c	Broiler results at the age of 28 days
	6d	Broiler results at the age of 35 days

Hatchability**Tab. No. 1**

Treatment	Tr. No.	Fertility	Hatchability		Birds housed	Average weight	
			Set	Fert.		hatch. eggs	1-day
		%	%	%		g	g
T1	1	91.43	72.86	79.69	390	70.57	49.00
T2	2	91.43	72.86	79.69	390	70.57	49.13
T3	3	91.43	72.86	79.69	390	70.57	48.92
T4	4	91.43	72.86	79.69	390	70.57	49.10

Broiler results at the age of 14 days**Tab. No. 2a**

Treatment	Tr. No.	Mortality		Live weight		FCR
		Birds	%	Birds	g	g
T1	1	14	3.59	376	566.27	1019.34
T2	2	15	3.85	375	570.00	993.57
T3	3	12	3.08	378	581.45	1017.81
T4	4	16	4.10	374	571.96	1003.96

Broiler results at the age of 21 days**Tab. No. 2b**

Treatment	Tr. No.	Mortality		Live weight		FCR
		Birds	%	Birds	g	g
T1	1	30	7.69	354	1115.93	1155.39
T2	2	21	5.38	363	1114.88	1130.44
T3	3	23	5.90	361	1148.89	1156.89
T4	4	29	7.44	355	1130.39	1149.99

Broiler results at the age of 28 days

Tab. No. 2c

Treatment	Tr. No.	Mortality		Live weight		FCR
		Birds	%	Birds	g	g
T1	1	32	8.21	352	1815.31	1291.64
T2	2	25	6.41	359	1823.54	1248.54
T3	3	27	6.92	357	1838.68	1275.47
T4	4	33	8.46	351	1818.63	1298.66

Broiler results at the age of 35 days

Tab. No. 2d

Treatment	Tr. No.	Male		Female		Average		FCR	IEV
		birds	live weight	birds	live weight	birds	live weight		
			g		g		g	g	
T1	1	168	2722.92	177	2302.32	345	2507.13	1427.57	444
T2	2	179	2686.15	171	2297.66	350	2496.34	1406.55	455
T3	3	176	2700.45	173	2326.59	349	2515.13	1404.27	458
T4	4	172	2671.28	172	2247.62	344	2459.45	1464.29	423

The fattening efficiency index (IEV) means the level of fattening and is characterized mainly by its length, feed consumption per 1 kg live weight, achieved live weight and percentage of chicken deaths.

Calculation:

$$\text{IEV} = \frac{\% \text{ live} \times \text{average weight at slaughter (kg)}}{\text{fattening length (days)} \times \text{feed consumption (kg / bw)}} \times 100$$

Mortality during the masts in 35 days

Tab. No. 3

Treatment	Tr. No.	Mortality in the period							Mortality according causes														
		1 - 14	15 - 21	22 - 28	29 - 35	1 - 35			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		birds	birds	birds	birds	birds	g	%															
T1	1	14	16	2	1	33	19235	8.46					1						19		7	6	12
T2	2	15	6	4	3	28	18533	7.18										1	16		5	6	12
T3	3	12	11	4	2	29	17582	7.44										1	16		7	5	12
T4	4	16	13	4	1	34	20907	8.72					1					1	17		9	6	12

Causes:

1 – Viral diseases

2 – Bacterial diseases

3 – Moulds diseases

4 – Parasitary diseases

5 – Tumors

6 – Wounds

7 – Digestive track diseases

8 – Respiratory tract diseases

9 – Reproduction tract diseases

10 – Locomotion apparatus diseases

11 – Sudden death syndrome

12 – Cannibalism

13 – Yolk sac. infam.

14 – Culling and other causes

15 – Sampling (excluded of calculation)

Results of carcass analysis in 35 days

Tab. No. 4

Treatment	Tr. No.	Sex	Weight				Ratio of abd. fat to live weight	Breast meat without skin			Thigh meat with bone and skin			Breast meat and thighs			Carcass	
			Total	Body	Gibl.	Abd. fat		weight	percentage		weight	percentage		weight	percentage		value	quality
									total weight	body carcass		total weight	body carcass		total weight	body carcass		
			g	g	g	g	%	g	%	%	g	%	%	g	%	%	%	%
T1	1	♂	2810	1938	164	23	0.83	649	23.10	33.49	594	21.15	30.66	1243	44.24	64.15	68.96	74.79
		♀	2369	1642	140	26	1.10	554	23.39	33.74	505	21.32	30.76	1059	44.70	64.50	69.31	75.21
		♂	2589	1790	152	25	0.95	602	23.23	33.61	550	21.23	30.71	1151	44.45	64.31	69.12	74.98
T2	2	♂	2812	1871	164	27	0.97	600	21.33	32.06	592	21.06	31.66	1192	42.39	63.72	66.53	72.35
		♀	2322	1634	135	27	1.17	550	23.67	33.64	512	22.03	31.31	1061	45.70	64.95	70.36	76.17
		♂	2567	1752	149	27	1.06	575	22.39	32.80	552	21.50	31.50	1127	43.89	64.30	68.26	74.07
T3	3	♂	2686	1854	164	24	0.90	614	22.88	33.15	575	21.41	31.01	1189	44.29	64.16	69.02	75.12
		♀	2373	1642	144	27	1.12	563	23.72	34.29	509	21.44	30.99	1072	45.16	65.28	69.18	75.25
		♂	2529	1748	154	25	1.00	589	23.27	33.69	542	21.42	31.00	1131	44.70	64.69	69.10	75.18
T4	4	♂	2738	1947	156	25	0.93	625	22.84	32.12	601	21.96	30.89	1227	44.81	63.01	71.10	76.81
		♀	2334	1664	139	29	1.25	559	23.96	33.61	527	22.56	31.65	1086	46.52	65.27	71.27	77.24
		♂	2536	1805	148	27	1.08	592	23.35	32.81	564	22.24	31.24	1156	45.59	64.05	71.18	77.01

Statistical analysis - Body weight at 35 days of age

Tab. No. 5

Treatment	Tr. No.	Cocks				Hens			
		Sample size	Average	Standard deviation	Coefficient of variation	Sample size	Average	Standard deviation	Coefficient of variation
			g/birds	g/birds	%		g/birds	g/birds	%
T1	1	168	2722.92	255.85	9.40	177	2302.32	243.19	10.56
T2	2	179	2686.15	233.41	8.69	171	2297.66	209.57	9.12
T3	3	176	2700.45	263.36	9.75	173	2326.59	265.74	11.42
T4	4	172	2671.28	272.48	10.20	172	2247.62	204.91	9.12

Broiler results at the age of 14 days

Tab. No. 6a

Treatment	Tr. No.	Box	Mortality		Live weight		FCR
			birds	%	birds	g	g
T1	1	1	5	3.85	125	567.20	1045.42
		5	6	4.62	124	571.77	989.20
		34	3	2.31	127	559.84	1024.06
T2	2	2	5	3.85	125	571.20	958.95
		6	5	3.85	125	560.40	1036.01
		33	5	3.85	125	578.40	987.04
T3	3	3	4	3.08	126	580.16	1036.53
		32	3	2.31	127	575.59	1036.48
		36	5	3.85	125	588.60	980.58
T4	4	4	9	6.92	121	574.38	1023.95
		31	3	2.31	127	569.69	1028.25
		35	4	3.08	126	571.83	960.44

Broiler results at the age of 21 days

Tab. No. 6b

Treatment	Tr. No.	Box	Mortality		Live weight		FCR
			birds	%	birds	g	g
T1	1	1	6	4.62	122	1140.82	1142.03
		5	11	8.46	117	1113.59	1166.13
		34	13	10.00	115	1091.91	1158.53
T2	2	2	7	5.38	121	1122.81	1111.82
		6	7	5.38	121	1117.77	1124.96
		33	7	5.38	121	1104.05	1154.96
T3	3	3	6	4.62	122	1172.54	1142.19
		32	5	3.85	123	1153.74	1156.52
		36	12	9.23	116	1118.88	1173.00
T4	4	4	12	9.23	116	1157.16	1149.09
		31	10	7.69	118	1112.88	1157.12
		35	7	5.38	121	1121.82	1143.87

Broiler results at the age of 28 days

Tab. No. 6c

Treatment	Tr. No.	Box	Mortality		Live weight		FCR
			birds	%	birds	g	g
T1	1	1	6	4.62	122	1845.08	1250.31
		5	13	10.00	115	1896.96	1256.66
		34	13	10.00	115	1702.09	1376.06
T2	2	2	7	5.38	121	1859.42	1210.94
		6	10	7.69	118	1853.22	1226.02
		33	8	6.15	120	1758.17	1312.01
T3	3	3	7	5.38	121	1933.97	1213.57
		32	7	5.38	121	1805.62	1275.85
		36	13	10.00	115	1773.22	1344.65
T4	4	4	12	9.23	116	1936.72	1246.12
		31	13	10.00	115	1805.30	1307.76
		35	8	6.15	120	1717.25	1346.33

Broiler results at the age of 35 days

Tab. No. 6d

Treatment	Tr. No.	Box	Male		Female		Average		FCR	IEV
			birds	live weight	birds	live weight	birds	live weight		
				g		g		g		
T1	1	1	60	2663.00	60	2297.50	120	2480.25	1440.45	454
		5	52	2814.62	61	2298.52	113	2536.02	1408.83	447
		34	56	2701.96	56	2311.61	112	2506.79	1433.36	430
T2	2	2	63	2676.83	54	2297.96	117	2501.97	1395.55	461
		6	57	2736.14	58	2254.83	115	2493.39	1398.03	451
		33	59	2647.80	59	2339.49	118	2493.64	1425.99	454
T3	3	3	59	2758.47	60	2470.33	119	2613.19	1336.73	511
		32	59	2753.05	60	2240.50	119	2494.62	1409.53	463
		36	58	2587.93	53	2261.32	111	2431.98	1474.28	402
T4	4	4	61	2722.62	52	2236.92	113	2499.12	1494.85	415
		31	53	2745.85	60	2275.50	113	2496.11	1436.39	432
		35	58	2549.14	60	2229.00	118	2386.36	1461.81	423

The fattening efficiency index (IEV) means the level of fattening and is characterized mainly by its length, feed consumption per 1 kg live weight, achieved live weight and percentage of chicken deaths.

Calculation:

$$IEV = \frac{\% \text{ live } \times \text{ average weight at slaughter (kg)}}{\text{fattening length (days)} \times \text{feed consumption (kg / bw)}} \times 100$$