



MEZINÁRODNÍ TESTOVÁNÍ DRŮBEŽE
státní podnik, ÚSTRAŠICE

390 02 Tábor 2

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**1st part fattening test of the final product of L.
international test of parents from of broilers**

2. 12. 2021 - 2. 1. 2022

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Ústrašice, January 2021

1 List of participants

Sample	Cross	Breeding organization	State
1	XXXXX	XXXXX	XXXXX
2	XXXXX	XXXXX	XXXXX
3	XXXXX	XXXXX	XXXXX
4	XXXXX	XXXXX	XXXXX
5	XXXXX	XXXXX	XXXXX
6	XXXXX	XXXXX	XXXXX
7	XXXXX	XXXXX	XXXXX
8	XXXXX	XXXXX	XXXXX
9	XXXXX	XXXXX	XXXXX
10	XXXXX	XXXXX	XXXXX
11	XXXXX	XXXXX	XXXXX
12	XXXXX	XXXXX	XXXXX

2 Basic tests information

2.1 The basic dates

setting in the hatchery:	9 November 2021
beginning of test:	1 December 2021
end of the test:	12 January 2022

2.2 Location of the test

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

3 Material and methods

3.1 Material

There were 12 different breeds in this test. Each sample consisted of 720 hatching eggs. 560 broilers were sexed and placed always 280 females (in two pens) and 280 males (in two pens).

The parent flock is 33 weeks old at the time of hatching eggs collection.

3.2 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.

3.3 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 - 29	18	6
Day 30 - 32	23	1

3.4 Stocking density

17,2 broilers per square meter

3.5 Feeding

Feed was produced in xxxxx

Day 1 – 10 Starter (BR1)

Day 11 – 21 Grower (BR2-A)

Day 22 – 28 Grower (BR2-B)

Day 29 – 32 Finisher (BR3)

Diet formulas

	Starter BR1	Grower BR2-A	Grower BR2-B	Finisher BR3
Age	Days 1 - 10	Days 11 - 21	Day 22 - 28	Day 29 - 32
Components (%)				
Wheat	41.42	49.80	51.37	57.12
Maize	15.00	13.00	13.00	10.00
Soybean extr. groats	31.50	30.40	28.55	24.80
Soybean extr.	4.00	-	-	-
Fish meal	1.50	-	-	-
MCP – monocalciumphosphate	0.47	0.31	0.18	0.16
Calcium carbonate	1.47	1.16	1.15	1.13
Salt	0.28	0.24	0.23	0.26
Soybean oil	2.46	2.50	2.50	2.62
Animal fat	-	0.86	1.29	2.50
Sodium sulfate	0.13	0.10	0.11	0.08
Premixes of amino acid	0.85	0.86	0.86	0.86
Vitamin and mineral supplement	0.92	0.77	0.76	0.47
Nutrient content				
Crude protein (g/kg)	23.36	21.17	20.50	19.15
Fat (g/kg)	5.16	5.20	5.62	6.86
Lysine (g/kg)	1.30	1.17	1.13	1.05
Methionine (g/kg)	0.63	0.56	0.54	0.50
Ca (g/kg)	0.96	0.78	0.75	0.72
P (g/kg)	0.45	0.39	0.36	0.35
Vitamin A (IU/kg)	15000	10000	10000	10000
Vitamin D3 (IU/kg)	5000	5000	5000	5000
ME (MJ/kg)	12.40	12.70	12.90	13.40

3.6 Veterinary precautions

The chicken house was disinfected by xxxxx before the chick placement. On the first days old chickens was applied to the water solution of permanganate. On days 1 and 12 chickens were vaccinated with xxxxx. Amoxicillin treatment was initiated on day 3 due to higher mortality.

4 Parameters recorded

4.1 Live weight

Live weight was measured on days 1 (all the birds in each pen were weighed altogether), 7 and 14 (20 % of the birds were weighed altogether, without fasting). On day 32 birds were weighed individually, after 12 hours of fasting.

4.2 Feed conversion ratio (FCR)

Feed conversion ratio was calculated as feed consumption per 1 kg of live weight for the periods 1 – 14 days and 1 – 32 days.

4.3 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.

4.4 Carcass analysis

The carcass analysis was done on 20 cocks and 20 hens per each genotype on day 32. Breast muscles was weighed without skin and thigh muscles with bone and skin.

4.5 Statistical analyses

Performance results of live weight at the age of 32 days were statistically evaluated.

5 Results

Tab. No.	1a	Hatchability
	1b	Broiler results at the age of 7 days
	1c	Broiler results at the age of 14 days
	1d	Broiler results at the age of 32 days
	2a	Mortality during growing period at the age of 14 days
	2b	Mortality during growing period at the age of 32 days
	3	Results of carcass analysis
	4a	Statistical analysis - cocks
	4b	Statistical analysis - hens

Hatchability**Tab. No. 1a**

Test: 50

Part fattening: 1

Cross	Sample	Fertility	Hatchability		Birds housed	Average weight		
			Set	Fert.		hatch. eggs	1-day	
		%	%	%			♂	♀
					g	g	g	
XXXXXX	1	98.19	87.64	89.25	560	61.5	39.3	39.8
XXXXXX	2	99.17	89.44	90.20	560	60.8	40.4	41.7
XXXXXX	3	98.61	85.28	86.48	560	61.1	39.2	38.7
XXXXXX	4	99.58	86.67	87.03	560	60.8	40.3	39.0
XXXXXX	5	98.47	85.42	86.74	560	61.5	39.3	38.6
XXXXXX	6	99.72	90.42	90.67	560	61.7	41.0	42.0
XXXXXX	7	99.17	89.58	90.34	560	61.7	41.2	41.0
XXXXXX	8	99.17	87.22	87.96	560	61.5	38.5	38.5
XXXXXX	9	98.61	88.61	89.86	560	61.4	39.3	37.5
XXXXXX	10	97.50	79.86	81.91	560	62.8	40.3	39.9
XXXXXX	11	98.75	87.92	89.03	560	61.1	40.4	40.1
XXXXXX	12	97.64	84.72	86.77	560	62.5	40.5	40.5

Broiler results at the age of 7 days

Tab. No. 1b

Test: 50

Part fattening: 1

Cross	Sample	Average live weight at 7 days								
		male			female			average		
		mortality		live weight	mortality		live weight	mortality		live weight
		birds	%	g	birds	%	g	birds	%	g
XXXXXX	1	5	3.6	177.8	7	5.0	172.2	12	2.1	175.0
XXXXXX	2	5	3.6	179.3	2	1.4	169.8	7	1.3	174.6
XXXXXX	3	6	4.3	179.2	4	2.9	157.2	10	1.8	168.1
XXXXXX	4	2	1.4	179.5	1	0.7	163.7	3	0.5	171.6
XXXXXX	5	7	5.0	176.7	5	3.6	169.3	12	2.1	173.0
XXXXXX	6	5	3.6	182.8	6	4.3	166.8	11	2.0	174.8
XXXXXX	7	1	0.7	172.7	4	2.9	161.7	5	0.9	167.2
XXXXXX	8	2	1.4	187.5	6	4.3	170.2	8	1.4	178.9
XXXXXX	9	0	0.0	175.5	4	2.9	169.7	4	0.7	172.6
XXXXXX	10	8	5.7	166.7	5	3.6	162.5	13	2.3	164.6
XXXXXX	11	1	0.7	177.2	3	2.1	156.5	4	0.7	166.9
XXXXXX	12	5	3.6	190.2	4	2.9	163.0	9	1.6	176.6

Broiler results at the age of 14 days

Tab. No. 1c

Test: 50

Part fattening: 1

Cross	Sample	Average live weight at 14 days								
		male			female			average		
		birds	live weight	FCR	birds	live weight	FCR	birds	live weight	FCR
			g	g		g	g		g	
XXXXXX	1	268	423.3	1151.1	266	409.2	1114.5	534	416.3	1133.2
XXXXXX	2	272	400.0	1218.8	275	398.3	1254.3	547	399.2	1236.6
XXXXXX	3	264	436.7	1119.9	270	428.3	1066.1	534	432.5	1093.0
XXXXXX	4	276	431.7	1078.6	277	450.8	1072.2	553	441.3	1075.3
XXXXXX	5	265	453.3	1082.1	260	431.7	1059.4	525	442.6	1071.2
XXXXXX	6	271	435.0	1135.0	271	410.8	1175.7	542	422.9	1154.8
XXXXXX	7	277	457.5	1126.8	274	433.3	1139.5	551	445.5	1133.0
XXXXXX	8	266	426.7	1206.2	265	425.0	1140.1	531	425.8	1173.3
XXXXXX	9	277	451.7	1035.9	273	435.0	1125.8	550	443.4	1079.7
XXXXXX	10	256	429.2	1143.2	272	421.7	1136.9	528	425.3	1140.0
XXXXXX	11	275	445.0	1092.5	277	441.7	1049.5	552	443.3	1071.0
XXXXXX	12	271	450.0	1145.6	271	434.2	1140.6	542	442.1	1143.1

Broiler results at the age of 32 days

Tab. No. 1d

Test: 50

Part fattening: 1

Cross	Sample	Average live weight at 32 days								
		male			female			average		
		birds	live weight	FCR	birds	live weight	FCR	birds	live weight	FCR
			g	g		g	g		g	
xxxxx	1	261	1947.6	1490.6	259	1814.2	1533.8	520	1881.2	1511.3
xxxxx	2	267	1854.1	1481.9	274	1668.7	1594.2	541	1760.2	1535.8
xxxxx	3	259	1979.3	1485.3	267	1766.5	1550.9	526	1871.3	1516.7
xxxxx	4	274	1981.9	1499.1	275	1782.0	1526.6	549	1881.8	1512.2
xxxxx	5	262	1951.2	1463.6	254	1833.4	1458.9	516	1893.2	1461.4
xxxxx	6	267	2023.4	1442.5	268	1767.7	1554.4	535	1895.3	1494.8
xxxxx	7	272	1982.0	1457.2	274	1801.8	1525.0	546	1891.6	1489.6
xxxxx	8	262	1982.1	1450.8	264	1906.1	1447.1	526	1943.9	1449.0
xxxxx	9	266	2045.3	1463.8	272	1887.6	1491.0	538	1965.6	1477.0
xxxxx	10	246	2012.3	1475.1	270	1798.1	1524.4	516	1900.2	1499.5
xxxxx	11	271	1764.1	1577.8	275	1662.9	1564.8	546	1713.1	1571.5
xxxxx	12	268	2010.5	1467.3	269	1873.3	1522.5	537	1941.8	1494.0

Mortality in the age 14 days

Tab. No. 2a

Test: 50

Part fattening: 1

Cross	Sample	Mortality in the period						Mortality according causes													
		male		female		total		1	2	3	4	5	6	7	8	9	10	11	12	13	14
		birds	%	birds	%	birds	%														
xxxxxx	1	12	4.29	14	5.00	26	4.64											9			17
xxxxxx	2	8	2.86	5	1.79	13	2.32											5		2	6
xxxxxx	3	16	5.71	10	3.57	26	4.64											4		3	19
xxxxxx	4	4	1.43	3	1.07	7	1.25											4		1	2
xxxxxx	5	15	5.36	20	7.14	35	6.25											5		3	27
xxxxxx	6	9	3.21	9	3.21	18	3.21											9			9
xxxxxx	7	3	1.07	6	2.14	9	1.61											5			4
xxxxxx	8	14	5.00	15	5.36	29	5.18											6			23
xxxxxx	9	3	1.07	7	2.50	10	1.79											1			9
xxxxxx	10	24	8.57	8	2.86	32	5.71											13		2	17
xxxxxx	11	5	1.79	3	1.07	8	1.43											1		1	6
xxxxxx	12	9	3.21	9	3.21	18	3.21											4		1	13

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

Mortality during the masts in 32 days

Tab. No. 2b

Test: 50

Part fattening: 1

Cross	Sample	Mortality in the period						Mortality according causes													
		1 - 14		15 - 32		1 - 32		1	2	3	4	5	6	7	8	9	10	11	12	13	14
		birds	%	birds	%	birds	%														
xxxxxx	1	26	4.64	14	2.50	40	7.14											22			18
xxxxxx	2	13	2.32	6	1.07	19	3.39											11		2	6
xxxxxx	3	26	4.64	8	1.43	34	6.07											12		3	19
xxxxxx	4	7	1.25	4	0.71	11	1.96										1	7		1	2
xxxxxx	5	35	6.25	9	1.61	44	7.86											12		3	29
xxxxxx	6	18	3.21	7	1.25	25	4.46											16			9
xxxxxx	7	9	1.61	5	0.89	14	2.50											10			4
xxxxxx	8	29	5.18	5	0.89	34	6.07											11			23
xxxxxx	9	10	1.79	12	2.14	22	3.93											13			9
xxxxxx	10	32	5.71	12	2.14	44	7.86											23		2	19
xxxxxx	11	8	1.43	6	1.07	14	2.50											6		1	7
xxxxxx	12	18	3.21	5	0.89	23	4.11											9		1	13

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

Results of carcass analysis in 32 days

Tab. No. 3 (page 1)

Test: 50

Part fattening: 1

Cross	Sample	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	%	%	%
xxxxxx	1	♂	2063	1389	129	21	1.03	453	21.98	32.64	421	20.41	30.31	875	42.39	62.95	67.34	73.60
		♀	1899	1324	119	24	1.27	441	23.25	33.33	384	20.25	29.03	826	43.50	62.36	69.76	76.02
		♂	1981	1357	124	23	1.14	447	22.59	32.97	403	20.33	29.69	850	42.92	62.66	68.50	74.76
xxxxxx	2	♂	1861	1232	120	13	0.71	418	22.47	33.92	375	20.15	30.41	793	42.61	64.34	66.24	72.70
		♀	1692	1117	109	15	0.89	369	21.81	33.02	343	20.28	30.70	712	42.08	63.72	66.04	72.50
		♂	1776	1175	115	14	0.80	394	22.15	33.49	359	20.21	30.55	752	42.36	64.04	66.14	72.61
xxxxxx	3	♂	2021	1326	127	20	0.98	406	20.07	30.61	421	20.83	31.76	827	40.91	62.36	65.59	71.88
		♀	1839	1219	121	25	1.34	386	20.99	31.67	368	20.01	30.19	754	41.00	61.86	66.28	72.85
		♂	1930	1272	124	22	1.15	396	20.51	31.12	394	20.44	31.01	790	40.95	62.12	65.92	72.34
xxxxxx	4	♂	2059	1393	128	20	0.95	471	22.90	33.85	418	20.29	29.99	889	43.19	63.84	67.65	73.87
		♀	1902	1286	115	19	1.01	434	22.82	33.75	388	20.40	30.18	822	43.22	63.93	67.60	73.63
		♂	1981	1339	121	19	0.98	453	22.86	33.80	403	20.34	30.08	856	43.20	63.88	67.63	73.76
xxxxxx	5	♂	2017	1327	126	22	1.11	427	21.15	32.15	405	20.05	30.49	831	41.20	62.65	65.77	71.99
		♀	1810	1215	114	22	1.19	386	21.34	31.80	362	19.99	29.79	748	41.34	61.59	67.12	73.43
		♂	1914	1271	120	22	1.15	406	21.24	31.98	383	20.03	30.16	790	41.26	62.14	66.40	72.67
xxxxxx	6	♂	1999	1357	129	16	0.78	454	22.70	33.43	414	20.70	30.49	867	43.39	63.92	67.88	74.32
		♀	1784	1219	112	17	0.93	414	23.19	33.94	366	20.53	30.05	780	43.72	63.99	68.33	74.59
		♂	1891	1288	120	16	0.85	434	22.93	33.67	390	20.62	30.28	824	43.55	63.95	68.10	74.45

Results of carcass analysis in 32 days

Tab. No. 3 (page 2)

Test: 50

Part fattening: 1

Cross	Sample	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	%	%	%
xxxxxx	7	♂	2028	1368	124	16	0.78	456	22.51	33.37	422	20.79	30.83	878	43.30	64.20	67.45	73.55
		♀	1790	1205	115	19	1.06	400	22.35	33.19	366	20.43	30.35	766	42.78	63.54	67.33	73.77
		♂	1909	1286	120	17	0.91	428	22.43	33.29	394	20.62	30.60	822	43.05	63.89	67.39	73.66
xxxxxx	8	♂	1941	1281	128	23	1.20	395	20.33	30.81	398	20.48	31.03	792	40.82	61.84	66.01	72.62
		♀	1925	1298	123	25	1.27	430	22.34	33.13	384	19.96	29.60	814	42.31	62.73	67.44	73.83
		♂	1933	1290	126	24	1.24	412	21.33	31.98	391	20.23	30.31	803	41.56	62.29	66.72	73.23
xxxxxx	9	♂	2102	1407	130	20	0.96	454	21.62	32.30	430	20.46	30.56	884	42.08	62.86	66.95	73.16
		♀	1995	1374	117	22	1.09	463	23.20	33.67	411	20.61	29.92	874	43.81	63.59	68.90	74.74
		♂	2048	1391	123	21	1.02	459	22.39	32.97	421	20.53	30.24	879	42.92	63.22	67.90	73.93
xxxxxx	10	♂	1988	1331	130	24	1.18	434	21.84	32.61	412	20.71	30.93	846	42.55	63.54	66.96	73.51
		♀	1883	1278	118	23	1.20	419	22.24	32.77	384	20.40	30.06	803	42.65	62.83	67.88	74.12
		♂	1936	1305	124	23	1.19	426	22.03	32.69	398	20.56	30.50	824	42.59	63.19	67.40	73.81
xxxxxx	11	♂	1827	1238	122	14	0.78	380	20.82	30.72	386	21.12	31.16	766	41.94	61.89	67.77	74.42
		♀	1772	1195	114	16	0.90	398	22.44	33.27	353	19.92	29.54	751	42.36	62.81	67.44	73.87
		♂	1800	1217	118	15	0.84	389	21.62	31.98	369	20.53	30.37	758	42.15	62.34	67.60	74.15
xxxxxx	12	♂	2054	1380	129	24	1.16	426	20.76	30.89	425	20.68	30.77	851	41.44	61.66	67.21	73.46
		♀	1933	1292	123	28	1.47	417	21.59	32.29	391	20.21	30.22	808	41.81	62.51	66.88	73.22
		♂	1993	1336	126	26	1.31	422	21.16	31.57	408	20.45	30.51	830	41.62	62.07	67.05	73.35

Statistical analysis - Cocks on the age of 32 days

Tab. No. 4a

Test: 50

Part fattening: 1

Cross	Sample	Sample size	Average	Standard deviation	Coefficient of variation	Standard error of mean	Precision select. average	Standard error of coeff. of variation
			g/birds	g/birds	%	g/birds	%	%
XXXXXX	1	261	1947.59	278.16	14.28	17.22	0.88	0.64
XXXXXX	2	267	1854.12	219.56	11.84	13.44	0.72	0.52
XXXXXX	3	259	1979.27	245.66	12.41	15.26	0.77	0.55
XXXXXX	4	274	1981.93	240.49	12.13	14.53	0.73	0.53
XXXXXX	5	262	1951.18	321.35	16.47	19.85	1.02	0.74
XXXXXX	6	267	2023.45	312.66	15.45	19.13	0.95	0.69
XXXXXX	7	272	1981.99	246.65	12.44	14.96	0.75	0.54
XXXXXX	8	262	1982.10	287.78	14.52	17.78	0.90	0.65
XXXXXX	9	266	2045.34	289.77	14.17	17.77	0.87	0.63
XXXXXX	10	246	2012.28	251.92	12.52	16.06	0.80	0.57
XXXXXX	11	271	1764.10	199.16	11.29	12.10	0.69	0.49
XXXXXX	12	268	2010.52	277.32	13.79	16.94	0.84	0.61

Statistical analysis - Hens on the age of 32 days

Tab. No. 4b

Test: 50

Part fattening: 1

Cross	Sample	Sample size	Average	Standard deviation	Coefficient of variation	Standard error of mean	Precision select. average	Standard error of coeff. of variation
			g/birds	g/birds	%	g/birds	%	%
xxxxxx	1	259	1814.25	277.26	15.28	17.23	0.95	0.69
xxxxxx	2	274	1668.69	242.54	14.53	14.65	0.88	0.64
xxxxxx	3	267	1766.48	253.25	14.34	15.50	0.88	0.63
xxxxxx	4	275	1781.96	244.59	13.73	14.75	0.83	0.60
xxxxxx	5	254	1833.43	303.38	16.55	19.04	1.04	0.76
xxxxxx	6	268	1767.72	290.49	16.43	17.74	1.00	0.73
xxxxxx	7	274	1801.82	267.81	14.86	16.18	0.90	0.65
xxxxxx	8	264	1906.06	266.63	13.99	16.41	0.86	0.62
xxxxxx	9	272	1887.57	290.00	15.36	17.58	0.93	0.68
xxxxxx	10	270	1798.15	277.51	15.43	16.89	0.94	0.68
xxxxxx	11	275	1662.91	225.06	13.53	13.57	0.82	0.59
xxxxxx	12	269	1873.27	272.89	14.57	16.64	0.89	0.64