



MEZINÁRODNÍ TESTOVÁNÍ DRŮBEŽE
státní podnik, ÚSTRAŠICE

390 02 Tábor 2

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**3rd part fattening test of the final product of test
of parents from of broilers**

2. 4. 2021 - 10. 5. 2021

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Ústrašice, June 2021

1 Basic tests information

1.1 The basic dates

setting in the hatchery:	10 March 2021
beginning of test:	1 April 2021 (day 1)
end of the test:	10 May 2021

1.2 Location of the test

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

2 Material and methods

2.1 Material

There were 2 different samples in this test. Each sample consisted of 1080 hatching eggs of broilers [REDACTED]. There were 720 chicken in each sample, divided into 6 pens (120 broilers in each pen).

The parent flock is 48 weeks old at the time of hatching eggs collection.

Sample No. 1 – [REDACTED]		Sample No. 2 – [REDACTED]	
Box of fattening	Box of breeding	Box of fattening	Box of breeding
2	59	1	60
4	57	3	58
6	55	5	56
31	49	32	50
33	51	34	52
35	53	36	54

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 – 36	18	6
Day 37 – 39	23	1

2.4 Stocking density

14,7 broilers per square meter

2.5 Feeding

Feed was produced in [REDACTED]

Day 1 – 10 Starter (BR1)
Day 11 – 21 Grower (BR2-A)
Day 22 – 28 Grower (BR2-B)
Day 29 – 39 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 – 39
Components (%)				
Wheat	42.76	50.54	52.18	57.51
Maize	15.00	13.00	13.00	10.00
Soybean extr. groats	31.10	30.25	28.35	24.75
Soybean extr.	4.00	-	-	-
Fish meal	1.50	-	-	-
MCP – monocalciumphosphate	0.46	0.31	0.18	0.16
Calcium carbonate	1.47	1.21	1.20	1.13
Salt	0.26	0.24	0.23	0.26
Soybean oil	2.07	2.50	2.50	2.48
Animal fat	-	0.61	1.04	2.50
Sodium sulfate	0.15	0.10	0.11	0.08
Premixes of amino acid	0.86	0.87	0.85	0.86
Vitamin and mineral supplement	0.37	0.37	0.36	0.27
Nutrient content				
Crude protein (g/kg)	23.33	21.16	20.47	19.16
Fat (g/kg)	4.79	4.96	5.38	6.73
Lysine (g/kg)	1.30	1.17	1.13	1.05
Methionine (g/kg)	0.63	0.56	0.53	0.50
Ca (g/kg)	0.94	0.78	0.75	0.70
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

2.6 Veterinary precautions

The chicken house was disinfected by [REDACTED] 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 [REDACTED].

3 Parameters recorded

3.1 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 28 birds were weighed individually without fasting. On day 32 and 39 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 – 28 days, 1 – 32 days and 1 – 39 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 39. Breast muscles was weighed without bone and skin and thigh muscles with bone and skin.

3.5 Statistical analyses

Performance results of live weight at the age of 39 days were statistically evaluated.

4 Results

Tab. No. 1	Hatchability
2a	Broiler results at the age of 7 days
2b	Broiler results at the age of 14 days
2c	Broiler results at the age of 28 days
2d	Broiler results at the age of 32 days
2e	Broiler results at the age of 39 days
3	Mortality during growing period at the age of 39 days
4	Results of carcass analysis
5a	Statistical analysis - cocks
5b	Statistical analysis – hens
6	Performance results per pen
6a	Broiler results at the age of 7 days
6b	Broiler results at the age of 14 days
6c	Broiler results at the age of 28 days
6d	Broiler results at the age 32 days
6e	Broiler results at the age 39 days

Hatchability**Tab. No. 1**

Cross	Sample	Fertility	Hatchability		Birds housed	Average weight	
			Set	Fert.		hatch. eggs	1-day
		%	%	%		g	g
██████	1	92.87	76.48	82.32	720	66.87	45.61
██████	2	94.72	75.83	80.08	720	66.96	46.03

Broiler results at the age of 7 days**Tab. No. 2a**

Cross	Sample	Mortality		Live weight	
		Birds	%	Birds	g
██████	1	12	1.67	708	189.61
██████	2	16	2.22	704	201.11

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

Cross	Sample	Mortality		Live weight		FCR
		Birds	%	Birds	g	g
██████	1	25	3.47	695	552.78	1000.73
██████	2	16	2.22	704	546.67	1107.60

Broiler results at the age of 28 days**Tab. No. 2c**

Cross	Sample	Mortality		Live weight		FCR
		Birds	%	Birds	g	g
██████	1	34	4.72	686	1800.54	1214.33
██████	2	22	3.06	698	1862.95	1216.17

Broiler results at the age of 32 days

Tab. No. 2d

Cross	Sample	Mortality		Live weight		FCR
		Birds	%	Birds	g	g
██████	1	40	5.56	680	2127.44	1360.50
██████	2	30	4.17	690	2206.59	1349.39

Broiler results at the age of 39 days

Tab. No. 2e

Cross	Sample	Average live weight at 39 days						
		Male		Female		Average		
		birds	live weight	birds	live weight	birds	live weight	FCR
			g		g		g	g
██████	1	331	3039.67	335	2602.06	666	2819.55	1553.55
██████	2	335	3118.96	345	2673.68	680	2893.04	1539.21

Mortality during the masts in 39 days

Tab. No. 3

Cross	Sample	Mortality in the period						Mortality according causes														
		1 - 14		15 - 39		1 - 39		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
		birds	%	birds	%	birds	%															
██████	1	25	3.47	29	4.03	54	7.50												27		11	16
██████	2	16	2.22	24	3.33	40	5.56												19		10	11

- Causes:
- | | | |
|-------------------------|------------------------------------|-------------------------------|
| 1 – Viral diseases | 6 – Wounds | 11 – Sudden death syndrome |
| 2 – Bacterial diseases | 7 – Digestive track diseases | 12 – Cannibalism |
| 3 – Moulds diseases | 8 – Respiratory tract diseases | 13 – Yolk sac. infam. |
| 4 – Parasitary diseases | 9 – Reproduction tract diseases | 14 – Culling and other causes |
| 5 – Tumors | 10 – Locomotion apparatus diseases | |

Results of carcass analysis in 39 days

Tab. No. 4

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	%	%	%
■	1	♂	3099	2260	171	37	1.18	776	25.04	34.33	676	21.83	29.93	1452	46.87	64.25	72.94	78.47
		♀	2673	1964	153	42	1.57	665	24.86	33.84	593	22.19	30.22	1258	47.05	64.06	73.45	79.19
		∅	2886	2112	162	39	1.36	720	24.96	34.10	635	22.00	30.06	1355	46.95	64.17	73.18	78.80
■	2	♂	3148	2295	173	38	1.19	809	25.71	35.26	691	21.96	30.12	1501	47.67	65.39	72.91	78.39
		♀	2716	1974	155	43	1.60	688	25.34	34.87	589	21.70	29.85	1278	47.04	64.72	72.68	78.38
		∅	2932	2135	164	41	1.38	749	25.54	35.08	640	21.84	30.00	1389	47.38	65.08	72.80	78.39

Statistical analysis - Cocks on the age of 39 days

Tab. No. 5a

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	%	%
██████	1	331	3039.67	276.23	9.09	15.18	0.50	0.36
██████	2	335	3118.96	301.34	9.66	16.46	0.53	0.38

Statistical analysis - Hens on the age of 39 days

Tab. No. 5b

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	%	%
██████	1	335	2602.06	356.95	13.72	19.50	0.75	0.54
██████	2	345	2673.68	326.82	12.22	17.60	0.66	0.47

Broiler results at the age of 7 days

Tab. No. 6a

Cross	Sample	Box	Mortality		Live weight	
			birds	%	birds	g
[REDACTED]	1	2	2	1.67	118	180.67
		4	0	0.00	120	190.00
		6	1	0.83	119	183.33
		31	2	1.67	118	198.67
		33	4	3.33	116	205.00
		35	3	2.50	117	180.00
[REDACTED]	2	1	1	0.83	119	201.67
		3	4	3.33	116	201.67
		5	5	4.17	115	206.67
		32	2	1.67	118	193.33
		34	3	2.50	117	203.33
		36	1	0.83	119	200.00

Broiler results at the age of 14 days

Tab. No. 6b

Cross	Sample	Box	Mortality		Live weight		FCR
			birds	%	birds	g	g
[REDACTED]	1	2	3	2.50	117	558.33	1022.01
		4	4	3.33	116	545.00	1023.97
		6	3	2.50	117	531.67	1048.14
		31	3	2.50	117	565.00	1009.68
		33	9	7.50	111	556.67	992.56
		35	3	2.50	117	560.00	910.84
[REDACTED]	2	1	1	0.83	119	531.67	1163.45
		3	4	3.33	116	560.00	1063.68
		5	5	4.17	115	571.67	1063.38
		32	2	1.67	118	566.67	1125.55
		34	3	2.50	117	526.67	1112.41
		36	1	0.83	119	523.33	1121.73

Broiler results at the age of 28 days

Tab. No. 6c

Cross	Sample	Box	Mortality		Live weight		FCR
			birds	%	birds	g	g
[REDACTED]	1	2	4	3.33	116	1847.67	1224.60
		4	7	5.83	113	1940.00	1173.39
		6	5	4.17	115	1831.39	1199.20
		31	6	5.00	114	1690.35	1268.84
		33	9	7.50	111	1752.61	1224.41
		35	3	2.50	117	1741.62	1201.55
[REDACTED]	2	1	1	0.83	119	1820.59	1238.90
		3	4	3.33	116	1840.43	1235.02
		5	6	5.00	114	1945.61	1185.88
		32	5	4.17	115	1904.96	1224.66
		34	4	3.33	116	1803.19	1201.32
		36	2	1.67	118	1865.76	1211.76

Broiler results at the age of 32 days

Tab. No. 6d

Cross	Sample	Box	Mortality		Live weight		FCR
			birds	%	birds	g	g
[REDACTED]	1	2	6	5.00	114	2134.56	1358.22
		4	8	6.67	112	2197.95	1335.75
		6	5	4.17	115	2074.96	1368.95
		31	7	5.83	113	2087.61	1350.59
		33	11	9.17	109	2134.59	1432.27
		35	3	2.50	117	2136.41	1321.50
[REDACTED]	2	1	3	2.50	117	2126.67	1410.47
		3	5	4.17	115	2141.13	1374.06
		5	7	5.83	113	2284.87	1306.01
		32	7	5.83	113	2246.11	1336.51
		34	6	5.00	114	2189.65	1320.19
		36	2	1.67	118	2253.22	1351.44

Broiler results at the age of 39 days

Tab. No. 6e

Cross	Sample	Box	Average live weight at 39 days						
			Male		Female		Average		
			birds	live weight	birds	live weight	birds	live weight	FCR
				g		g		g	g
[REDACTED]	1	2	57	3039.47	57	2583.86	114	2811.67	1562.95
		4	55	3064.55	53	2782.45	108	2926.11	1547.50
		6	56	2969.11	57	2559.12	113	2762.30	1598.78
		31	58	3045.52	51	2570.20	109	2823.12	1526.00
		33	51	3070.78	55	2550.73	106	2800.94	1551.80
		35	54	3052.04	62	2575.81	116	2797.50	1535.03
[REDACTED]	2	1	59	3063.90	58	2684.66	117	2875.90	1575.16
		3	55	3006.36	59	2670.68	114	2832.63	1565.24
		5	56	3145.18	53	2739.43	109	2947.89	1526.57
		32	54	3193.15	56	2639.64	110	2911.36	1515.81
		34	56	3056.79	57	2611.23	113	2832.04	1540.49
		36	55	3254.36	62	2698.23	117	2959.66	1513.05