



MEZINÁRODNÍ TESTOVÁNÍ DRŮBEŽE  
státní podnik, ÚSTRAŠICE

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**1<sup>st</sup> part fattening test of the final product of test  
of parents from of broilers**

**2. 12. 2020 - 5. 1. 2021**

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## 1 Basic tests information

### 1.1 The basic dates

setting in the hatchery:	10 November 2020
beginning of test:	2 December 2020 (day 1)
end of the test:	5 January 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 840 chicken in each sample, divided into 6 pens (140 broilers in each pen).

The parent flock is 31 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
1	49	2	50
3	51	4	52
5	53	6	54
32	59	31	60
34	57	33	58
36	55	35	56

### 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

17,2 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 – 35 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 – 35
<b>Components (%)</b>				
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
<b>Nutrient content</b>				
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 with [REDACTED]. On the third day, treatment with [REDACTED] was started due to higher mortality.

### **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 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 – 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 was 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 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 35 days
	3	Mortality during growing period at the age of 35 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 35 days

**Hatchability****Tab. No. 1**

<b>Cross</b>	<b>Sample</b>	<b>Fertility</b>	<b>Hatchability</b>		<b>Birds housed</b>	<b>Average weight</b>	
			Set	Fert.		hatch. eggs	1-day
		%	%	%		g	g
██████	1	96.30	88.52	91.92	840	59.01	39.68
██████	2	95.83	87.50	91.30	840	58.97	39.52

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

Cross	Sample	Mortality		Live weight	
		Birds	%	Birds	g
■	1	7	0.83	833	147.50
■	2	7	0.83	833	149.17

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

Cross	Sample	Mortality		Live weight		FCR
		Birds	%	Birds	g	g
■	1	9	1.07	831	419.17	1049.11
■	2	12	1.43	828	428.78	1030.00

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

Cross	Sample	Mortality		Live weight		FCR
		Birds	%	Birds	g	g
■	1	16	1.90	824	1539.34	1392.61
■	2	19	2.26	821	1530.93	1404.63

**Broiler results at the age of 35 days**

**Tab. No. 2d**

Cross	Sample	Average live weight at 35 days						
		Male		Female		Average		
		birds	live weight	birds	live weight	birds	live weight	FCR
			g		g		g	g
██████	1	400	2398.75	420	2152.76	820	2272.76	1494.47
██████	2	401	2395.86	414	2166.18	815	2279.19	1492.06

**Mortality during the masts in 35 days**

**Tab. No. 3**

Cross	Sample	Mortality in the period						Mortality according causes														
		1 - 14		15 - 35		1 - 35		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
		birds	%	birds	%	birds	%															
	1	9	1.07	11	1.31	20	2.38											2	14		4	
	2	12	1.43	13	1.55	25	2.98												13		6	6

- 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 35 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	♂	2406	1724	139	33	1.37	546	22.72	31.70	522	21.71	30.30	1069	44.42	62.00	71.65	77.41
		♀	2151	1540	123	31	1.45	495	23.02	32.16	462	21.46	29.99	957	44.48	62.15	71.57	77.29
		∅	<b>2278</b>	<b>1632</b>	<b>131</b>	<b>32</b>	<b>1.41</b>	<b>521</b>	<b>22.86</b>	<b>31.92</b>	<b>492</b>	<b>21.59</b>	<b>30.15</b>	<b>1013</b>	<b>44.45</b>	<b>62.07</b>	<b>71.61</b>	<b>77.36</b>
	2	♂	2427	1755	139	29	1.19	557	22.96	31.74	533	21.96	30.36	1090	44.92	62.10	72.33	78.06
		♀	2169	1579	125	32	1.48	502	23.13	31.79	464	21.39	29.39	966	44.52	61.18	72.78	78.55
		∅	<b>2298</b>	<b>1667</b>	<b>132</b>	<b>31</b>	<b>1.33</b>	<b>530</b>	<b>23.04</b>	<b>31.76</b>	<b>498</b>	<b>21.69</b>	<b>29.90</b>	<b>1028</b>	<b>44.73</b>	<b>61.66</b>	<b>72.54</b>	<b>78.29</b>

Statistical analysis - Cocks on the age of 35 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	400	2398.75	235.24	9.81	11.76	0.49	0.35
██████	2	401	2395.86	242.04	10.10	12.09	0.50	0.36

Statistical analysis - Hens on the age of 35 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	420	2152.76	275.56	12.80	13.45	0.62	0.45
██████	2	414	2166.18	270.24	12.48	13.28	0.61	0.44

**Broiler results at the age of 7 days**

**Tab. No. 6a**

Cross	Sample	Box	Mortality		Live weight	
			birds	%	birds	g
[REDACTED]	1	1	2	1.43	138	150.00
		3	0	0.00	140	151.67
		5	1	0.71	139	148.33
		32	1	0.71	139	145.00
		34	1	0.71	139	146.67
		36	2	1.43	138	143.33
[REDACTED]	2	2	1	0.71	139	151.67
		4	1	0.71	139	150.00
		6	1	0.71	139	148.33
		31	2	1.43	138	146.67
		33	1	0.71	139	148.33
		35	1	0.71	139	150.00

**Broiler results at the age of 14 days**

**Tab. No. 6b**

Cross	Sample	Box	Mortality		Live weight		FCR
			birds	%	birds	g	g
[REDACTED]	1	1	3	2.14	137	413.33	1046.02
		3	0	0.00	140	416.67	1048.29
		5	2	1.43	138	421.67	1045.13
		32	1	0.71	139	411.67	1068.93
		34	1	0.71	139	425.00	1055.55
		36	2	1.43	138	426.67	1031.17
[REDACTED]	2	2	2	1.43	138	447.67	1040.20
		4	2	1.43	138	431.67	990.68
		6	1	0.71	139	413.33	1094.89
		31	2	1.43	138	416.67	1100.47
		33	4	2.86	136	426.67	964.61
		35	1	0.71	139	436.67	992.79

**Broiler results at the age of 28 days**

**Tab. No. 6c**

Cross	Sample	Box	Mortality		Live weight		FCR
			birds	%	birds	g	g
[REDACTED]	1	1	4	2.86	136	1498.68	1407.79
		3	2	1.43	138	1550.07	1366.12
		5	2	1.43	138	1517.03	1394.58
		32	1	0.71	139	1556.26	1381.08
		34	2	1.43	138	1558.84	1398.88
		36	5	3.57	135	1554.81	1408.22
[REDACTED]	2	2	3	2.14	137	1551.53	1437.57
		4	4	2.86	136	1579.12	1365.69
		6	2	1.43	138	1562.25	1402.12
		31	3	2.14	137	1501.39	1435.83
		33	6	4.29	134	1436.34	1454.95
		35	1	0.71	139	1552.66	1338.82

Broiler results at the age of 35 days

Tab. No. 6d

Cross	Sample	Box	Average live weight at 35 days						
			Male		Female		Average		
			birds	live weight	birds	live weight	birds	live weight	FCR
				g		g		g	
T	1	1	67	2311.34	67	2060.15	134	2185.75	1534.14
		3	70	2362.43	68	2139.41	138	2252.54	1507.41
		5	69	2333.19	69	2210.43	138	2271.81	1481.10
		32	64	2422.66	74	2159.19	138	2281.38	1474.17
		34	66	2488.64	72	2173.89	138	2324.42	1475.69
		36	64	2484.06	70	2169.00	134	2319.48	1497.07
T	2	2	68	2477.94	66	2259.39	134	2370.30	1475.26
		4	68	2353.09	68	2239.12	136	2296.10	1488.94
		6	69	2410.72	68	2228.97	137	2320.51	1473.08
		31	66	2369.39	71	2110.00	137	2234.96	1528.75
		33	64	2359.53	69	2015.80	133	2181.20	1527.29
		35	66	2401.52	72	2152.08	138	2271.38	1463.14