MEZINÁRODNÍ TESTOVÁNÍ DRŮBEŽE
státní podnik, ÚSTRAŠICE

390 02 Tábor 2   Tel.: 381 200 320

BROILER FEEDING TEST No. 1230

XXXXX

9. 6. 2022-10. 7. 2022

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Ústrašice, July 2022

1 Basic tests information

1.1 The basic dates

setting in the hatchery:	17 May 2022
beginning of test:	9 June 2022
end of the test:	10 July 2022

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 breeds in this test. Each sample consisted of 1620 hatching eggs of genotype xxxxx. 840 broilers were placed into 6 pens – 140 broilers in each pen (the second treatment – control had only 5 pens, because there was only 41 chicken hatched from the box of breeding No. 58).

The parent flock is 59 – 60 weeks old at the time of hatching eggs collection.

xxxxx		xxxxx	
Box of fattening	**Box of breeding**	**Box of fattening**	**Box of breeding**
2	53	1	54
4	51	3	52
6	49	5	50
31	55	32	56
33	57	(34)	(58)
35	59	36	60

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 – 29	18	6
Day 30 – 32	23	1

2.4 Stocking density

17,2 broilers per square meter

2.5 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

2.6 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.

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 and on day 32 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 – 32 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 32. 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 32 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
           3   Mortality during growing period at the age of 32 days
           4   Results of carcass analysis
           5   Statistical analysis
           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 of 32 days

Hatchability

Cross	Sample	Fertility	Hatchability		Birds housed	Average weight	
			Set	Fert.		hatch. eggs	1-day
		%	%	%		g	g
xxxxx	1	87.04	69.75	80.12	840	70.49	47.54
xxxxx	2	86.15	68.96	79.75	700	71.24	48.43

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

Cross	Sample	Mortality		Live weight	
		Birds	%	Birds	g
xxxxx	1	55	6.55	785	209.44
xxxxx	2	47	6.71	653	209.67

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

Cross	Sample	Mortality		Live weight		FCR
		Birds	%	Birds	g	g
xxxxx	1	69	8.21	771	544.06	1099.50
xxxxx	2	53	7.57	647	553.00	1119.93

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

Cross	Sample	Mortality		Live weight		FCR
		Birds	%	Birds	g	g
xxxxx	1	82	9.76	758	1817.72	1306.04
xxxxx	2	62	8.86	638	1893.03	1321.34

Broiler results at the age of 32 days   **Tab. No. 2d**

Cross	Sample	Male		Female		Average		FCR	IEV
		birds	live weight	birds	live weight	birds	live weight		
			g		g		g	g	
xxxxx	1	366	2236.17	390	1959.38	756	2093.39	1465.06	402
xxxxx	2	288	2338.92	349	2075.87	637	2194.80	1448.57	431

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:

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

Mortality during the masts in 32 days

Cross	Sample	Mortality in the period							Mortality according causes													
		1 - 7	8 - 14	15 - 28	29 - 32	1 - 32			1	2	3	4	5	6	7	8	9	10	11	12	13	14
		birds	birds	birds	birds	birds	g	%														
xxxxx	1	55	14	13	2	84	19318	10.00										6	59		4	15
xxxxx	2	47	6	9	1	63	11852	9.00										7	44		2	10

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 32 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	%	%	%	%
xxxxx	1	♂	2260	1568	135	42	1.86	505	22.36	32.24	486	21.50	31.00	991	43.87	63.24	69.37	75.36
		♀	1992	1388	127	44	2.23	446	22.37	32.09	425	21.36	30.64	871	43.73	62.73	69.71	76.10
		ø	**2126**	**1478**	**131**	**43**	**2.03**	**476**	**22.37**	**32.17**	**456**	**21.44**	**30.83**	**931**	**43.80**	**63.00**	**69.53**	**75.71**
xxxxx	2	♂	2395	1666	137	43	1.79	539	22.51	32.37	497	20.73	29.81	1036	43.24	62.17	69.55	75.29
		♀	2089	1473	126	41	1.96	495	23.68	33.58	439	21.00	29.78	933	44.69	63.35	70.53	76.57
		ø	**2242**	**1570**	**132**	**42**	**1.87**	**517**	**23.06**	**32.94**	**468**	**20.86**	**29.79**	**985**	**43.91**	**62.73**	**70.01**	**75.88**

Statistical analysis - Body weight at 32 days of age   **Tab. No. 5**

Cross	Sample	Sample size	Cocks			Sample size	Hens		
			Average	Standard deviation	Coefficient of variation		Average	Standard deviation	Coefficient of variation
			g/birds	g/birds	%		g/birds	g/birds	%
xxxxx	1	366	2236.17	219.50	9.82	390	1959.38	245.87	12.55
xxxxx	2	288	2338.92	246.71	10.55	349	2075.87	242.21	11.67

Broiler results at the age of 7 days   **Tab. No. 6a**

Cross	Sample	Box	Mortality		Live weight	
			birds	%	birds	g
xxxxx	1	2	7	5.00	133	215.00
		4	5	3.57	135	206.67
		6	10	7.14	130	208.33
		31	12	8.57	128	213.33
		33	10	7.14	130	211.67
		35	11	7.86	129	201.67
xxxxx	2	1	5	3.57	135	206.67
		3	10	7.14	130	211.67
		5	8	5.71	132	213.33
		32	10	7.14	130	208.33
		36	14	10.00	126	208.33

Broiler results at the age of 14 days   **Tab. No. 6b**

Cross	Sample	Box	Mortality		Live weight		FCR
			birds	%	birds	g	g
xxxxx	1	2	8	5.71	132	543.33	1127.24
		4	8	5.71	132	552.67	1085.93
		6	12	8.57	128	526.67	1076.31
		31	16	11.43	124	556.67	1076.39
		33	12	8.57	128	535.00	1139.34
		35	13	9.29	127	550.00	1092.09
xxxxx	2	1	7	5.00	133	550.00	1140.73
		3	10	7.14	130	556.67	1079.23
		5	9	6.43	131	548.33	1096.62
		32	13	9.29	127	548.33	1193.29
		36	14	10.00	126	561.67	1091.40

Broiler results at the age of 28 days   **Tab. No. 6c**

Cross	Sample	Box	Mortality		Live weight		FCR
			birds	%	birds	g	g
xxxxx	1	2	11	7.86	129	1743.72	1334.99
		4	11	7.86	129	1819.22	1272.27
		6	13	9.29	127	1698.27	1404.05
		31	18	12.86	122	1911.23	1257.46
		33	14	10.00	126	1871.43	1285.42
		35	15	10.71	125	1868.48	1291.31
xxxxx	2	1	8	5.71	132	1913.03	1291.34
		3	12	8.57	128	1825.39	1381.33
		5	12	8.57	128	1822.50	1345.86
		32	16	11.43	124	1968.71	1299.25
		36	14	10.00	126	1937.94	1293.92

Broiler results at the age of 32 days   **Tab. No. 6d**

Cross	Sample	Box	Male		Female		Average		FCR	IEV
			birds	live weight	birds	live weight	birds	live weight		
				g		g		g	g	
xxxxx	1	2	63	2223.02	66	1940.00	129	2078.22	1437.07	416
		4	58	2322.76	70	1991.00	128	2141.33	1388.03	441
		6	67	2155.82	59	1886.78	126	2029.84	1519.55	376
		31	59	2276.61	63	1972.22	122	2119.43	1487.58	388
		33	61	2157.70	65	1913.69	126	2031.83	1522.74	375
		35	58	2298.10	67	2041.64	125	2160.64	1443.48	418
xxxxx	2	1	64	2368.13	68	2103.68	132	2231.89	1422.14	462
		3	55	2257.64	73	2011.37	128	2117.19	1500.39	403
		5	59	2276.27	69	2047.39	128	2152.89	1435.49	429
		32	47	2297.45	76	2120.00	123	2187.80	1477.48	407
		36	63	2469.84	63	2098.57	126	2284.21	1411.97	455

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