



MEZINÁRODNÍ TESTOVÁNÍ DRŮBEŽE
ÚSTRAŠICE státní podnik

390 02 Tábor 2

Česká republika

Final report

PEKIN – TEST No. 172

XXXXXX

13 September – 31 October 2022

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Ústřašice, November 2022

Basic tests information

The basic dates

Beginning of the test: 14 August 2022 (put into the incubator)

13 September 2022 (day old ducklings)

End of the test: 31 October 2022 – 49 days of age

Location

Mezinárodní testování drůbeže, s.p. Ústrašice – Testační stanice vodní drůbeže (Test station of water fowl).

Material and methods

Material

There were three treatments. 400 ducklings (200 males and 200 females) in each sample – divided in 2 pens (200 males or 200 females in one pen). Total there were 1200 ducklings.

Origin of hatching eggs:

Sample No.	Sample	Cross	Breeding organization
1	T1	xxxxx	xxxxx
2	T2	xxxxx	xxxxx
3	T3	xxxxx	xxxxx

Housing system

Ducklings were housed in deep litter rearing. Drinking water was supplied ad libitum by automatic nipple drinkers. Each pen was equipped with manually filled tube feeders.

Lighting program	Day 1 – 7	23 hours of light
	Day 8 – 37	18 hours of light
	Day 38 – 49	23 hours of light

Stocking density	Day 1 – 21	10.81 birds/m ²
	Day 22 – 49	4.28 birds/m ²

Feeding

Feed was produced in xxxxx.

Day 1 – 21	Starter “VKCH 1“
Day 22 – 35	Grower “VKCH 2”
Day 36 – 49	Finisher “VKCH 3“

Formulas of the feed

Components (%)	VKCH 1	VKCH 2	VKCH 3
Maize	10.000	10.000	7.000
Wheat	45.710	59.520	63.280
Extr. soybean meal	27.500	14.500	11.500
Rape seed meal	5.000	5.000	5.000
Wheat brans	5.000	4.000	7.000
Soybean oil	2.400	3.200	2.500
DL-methionine	0.290	0.160	0.170
L-lysine HCl	0.310	0.300	0.230
L-threonine	0.130	0.160	0.200
Limestone	1.410	1.750	1.750
MCP-monocalciumphosphate	1.200	0.400	0.400
Soda bicarbona	0.100	0.180	0.180
NaCl	0.400	0.300	0.260
Aminovitan VKCH-1 spec 0,2%	0.200	-	-
Aminovitan VKCH-2 spec 0,2%	-	0.200	0.200
Premix of cholin-chlorid 0,3%	0.300	0.300	0.300
Avizyme Porzyme XP	0.050	-	-
Axtra PHY 1500L+Xyl. 40000L	-	0.030	0.030
Nutrients (calculated values):			
CP (%)	22.369	18.088	17.285
ME (MJ/kg)	11.912	12.875	12.589
Lysine (g/kg)	13.411	10.054	8.862
Methionine (g/kg)	6.090	4.255	4.253
Threonine (g/kg)	9.052	7.503	7.546
Ca (g/kg)	10.482	10.258	10.240
P (g/kg)	7.463	5.138	5.337
Na (g/kg)	1.989	1.823	1.669

Veterinary precautions

The house were disinfected by xxxxx before the duck placement. There was used the wet disinfection and the gaseous disinfection.

Parameters recorded and Methods applied

Live weight

Live weight was measured on day 1 (all the birds in each pen were weighed altogether). On days 21, 35 and 42 (all the birds were weighed individually, without fasting) and 49 (all the birds were weighed individually after 12 hours of fasting).

Weight gain and average daily weight gain

Weight gains were calculated for the periods 1-21 days, 22-35 days, 36-42 days, 43-49 days and for the overall experiment (1-49 days).

Feed conversion ratio

Feed consumption per 1 kg of live weight was recorded per pen on days 21, 35, 42 and 49.

Feed consumption

Feed consumption was calculated for the periods 1-21 days, 22-35 days, 36-42 days, 43-49 days and for the overall experiment (1-49 days).

Mortality

All pens were checked twice 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.

Carcass analysis

The carcass analysis was done at 42 days and 49 days. The breast muscles were weighed with skin and thigh muscles were weighed with skin.

Statistical analyses

Performance results of final live weight (on days 49) were statistically evaluated.

Scheme of carcass analysis

Day of carcass analysis	Treatment no.	Pen no.	Ducks per pen	Total ducks per treatment	Total ducks per day
42	1	1 (♂)	20	40	120
		4 (♀)	20		
	2	2 (♂)	20	40	
		5 (♀)	20		
	3	3 (♂)	20	40	
		6 (♀)	20		
49	1	1 (♂)	20	40	120
		4 (♀)	20		
	2	2 (♂)	20	40	
		5 (♀)	20		
	3	3 (♂)	20	40	
		6 (♀)	20		

Results

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	2 Performance results:
	2a Body weight
	2b Weight gain
	2c Feed conversion ratio
	2d Feed consumption
	3a Results of carcass analysis at the age 42
	3b Results of carcass analysis at the age 49
	4 Mortality
	5 Statistical analysis
	6 Performance results per pen:
	6a Body weight
	6b Weight gain
	6c Feed conversion ratio
	6d Feed consumption

Hatching results**Tab. No. 1**

Treatment	Treat. no.	Fertility	Hatchability		Birds housed		Average weight		
			Set eggs	Fertilized eggs	Males	Females	Hatching eggs	Day old males	Day old females
		%	%	number	number	g	g	g	
T1	1	84.63	62.38	73.71	200	200	84.20	51.50	51.05
T2	2	81.00	63.88	78.86	200	200	86.70	51.95	51.75
T3	3	96.63	84.88	87.84	200	200	85.30	50.70	50.20

Performance results
Body weight per phases

Tab. No. 2a

Treatment	Tr. no.	Day 1		Day 21		Day 35		Day 42		Day 49	
		Birds	Average body weight	Birds	Average body weight	Birds	Average body weight	Birds	Average body weight	Birds	Average body weight
			g		g		g		g		
T1	1	400	51.28	400	1596.82	400	3285.06	397	4002.30	354	4239.84
T2	2	400	51.85	398	1456.73	397	3027.09	394	3611.58	350	3782.20
T3	3	400	50.45	400	1581.61	400	3174.09	398	3719.28	353	3939.32

Weight gain per phases

Tab. No. 2b

Treatment	Tr. no.	Day 1 - 21		Day 22 - 35		Day 36 - 42		Day 43 - 49		Day 1 - 49	
		Weight gain per phase	Daily weight gain	Weight gain per phase	Weight gain per phase	Weight gain per phase	Daily weight gain	Weight gain per phase	Daily weight gain	Weight gain per phase	Daily weight gain
		g	g	g	g	g	g	g	g	g	g
T1	1	1545.55	73.60	1688.23	120.59	717.24	102.46	237.54	33.93	4188.57	85.48
T2	2	1404.88	66.90	1570.35	112.17	584.49	83.50	170.62	24.37	3730.35	76.13
T3	3	1531.16	72.91	1592.48	113.75	545.20	77.89	220.03	31.43	3888.87	79.36

Feed conversion ratio (Feed consumption per 1 kg of live weight)**Tab. No. 2c**

Treatment	Tr. no.	Feed conversion ratio			
		Day 21	Day 35	Day 42	Day 49
		<i>g/kg LW</i>	<i>g/kg LW</i>	<i>g/kg LW</i>	<i>g/kg LW</i>
T1	1	1398.87	1817.70	2131.83	2829.23
T2	2	1389.32	1721.57	2082.07	2798.68
T3	3	1331.08	1743.81	2126.36	2874.05

Feed consumption per phases**Tab. No. 2d**

Treatment	Tr.. no.	Feed consumption				
		Starter (1-21 days)	Grower (22-35 days)	Finisher (36-42 days)	Finisher (43-49 days)	Total
		kg	kg	kg	kg	kg
T1	1	893.50	1495.00	998.80	859.10	4246.40
T2	2	805.50	1263.40	893.80	742.10	3704.80
T3	3	842.10	1371.90	933.60	849.00	3996.60

Results of carcass analysis with skin at the age 42 days

Tab. No. 3a

Treatment	Tr. no.	Sex	Weight				Ratio of abd. fat to live weight	Breast muscles with skin			Thigh muscles with skin			Total muscles with skin			Carcass	
			Total	Body	Gibl.	Abd. fat		Weight	Percentage		Weight	Percentage		Weight	Percentage		Value	Yield
									Total weight	Body carcass		Total weight	Body carcass		Total weight	Body carcass		
			g	g	g	g		g	%	%	%	g	%	%	g	%	%	%
T1	1	♂	4431	2612	374	41	0.93	684	15.43	26.18	633	14.29	24.25	1317	29.72	50.42	58.94	67.39
		♀	4159	2613	346	38	0.92	754	18.12	28.85	601	14.45	22.99	1355	32.57	51.84	62.83	71.15
		∅	4295	2612	360	40	0.92	719	16.73	27.51	617	14.37	23.62	1336	31.10	51.13	60.83	69.21
T2	2	♂	4107	2452	354	35	0.86	676	16.46	27.57	579	14.09	23.60	1255	30.55	51.17	59.71	68.33
		♀	3649	2277	325	40	1.09	640	17.55	28.12	547	14.98	24.00	1187	32.52	52.11	62.41	71.30
		∅	3878	2365	339	38	0.97	658	16.97	27.83	563	14.51	23.79	1221	31.48	51.62	60.98	69.73
T3	3	♂	4096	2477	353	29	0.72	754	18.42	30.45	549	13.42	22.18	1304	31.83	52.64	60.47	69.09
		♀	3775	2375	312	35	0.93	731	19.36	30.77	537	14.23	22.61	1268	33.59	53.38	62.92	71.18
		∅	3935	2426	332	32	0.82	743	18.87	30.61	543	13.80	22.39	1286	32.67	53.00	61.65	70.09

Results of carcass analysis with skin at the age 49 days

Tab. No. 3b

Treatment	Tr. no.	Sex	Weight				Ratio of abd. fat to live weight	Breast muscles with skin			Thigh muscles with skin			Total muscles with skin			Carcass	
			Total	Body	Gibl.	Abd. fat		Weight	Percentage		Weight	Percentage		Weight	Percentage		Value	Yield
									Total weight	Body carcass		Total weight	Body carcass		Total weight	Body carcass		
			g	g	g	g		%	g	%	%	g	%	%	g	%	%	%
T1	1	♂	4675	3075	398	54	1.16	932	19.93	30.31	702	15.02	22.84	1634	34.95	53.15	65.76	74.28
		♀	4322	2899	336	61	1.41	938	21.70	32.35	638	14.76	22.01	1576	36.46	54.36	67.08	74.86
		∅	4499	2987	367	58	1.28	935	20.78	31.30	670	14.90	22.44	1605	35.68	53.74	66.39	74.56
T2	2	♂	4114	2689	359	49	1.18	849	20.64	31.58	593	14.41	22.04	1442	35.05	53.62	65.36	74.08
		♀	3963	2625	317	53	1.34	837	21.11	31.87	574	14.48	21.87	1411	35.59	53.74	66.24	74.23
		∅	4039	2657	338	51	1.26	843	20.87	31.72	583	14.45	21.96	1426	35.32	53.68	65.79	74.15
T3	3	♂	4249	2803	366	41	0.97	944	22.21	33.66	587	13.82	20.96	1531	36.03	54.62	65.97	74.57
		♀	4002	2666	327	45	1.13	895	22.37	33.58	592	14.79	22.21	1487	37.16	55.78	66.62	74.79
		∅	4126	2735	346	43	1.05	919	22.29	33.62	590	14.29	21.57	1509	36.58	55.19	66.28	74.68

Mortality

Tab. No. 4

Treatment	Tr. no.	Mortality in the period						Mortality according causes														
		Day 1-21	Day 22-35	Day 36-42	Day 43-49	Day 1-49		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
		birds	birds	birds	birds	birds	%															
T1	1	0	0	3	3	6	1.50										5	1				
T2	2	2	1	3	4	10	2.50										6	4				
T3	3	0	0	2	5	7	1.75										6	1				

Treatment	Tr. no.	Sex	Mortality in the period						Mortality according causes														
			Day 1-21	Day 22-35	Day 36-42	Day 43-49	Day 1-49		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
			birds	birds	birds	birds	birds	%															
T1	1	♂	0	0	2	1	3	1.50										3					
		♀	0	0	1	2	3	1.50										2	1				
T2	2	♂	0	1	1	3	5	2.50										3	2				
		♀	2	0	2	1	5	2.50										3	2				
T3	3	♂	0	0	2	3	5	2.50										4	1				
		♀	0	0	0	2	2	1.00										2					

Diagnostic:

- 1 - Virus caused diseases
- 2 - Bacteria caused diseases
- 3 - Mould caused diseases
- 4 - Parasite caused diseases
- 5 - Tumors

- 6 - Injuries
- 7 - Gastrointest diseases
- 8 - Respiratory diseases
- 9 - Reproduct. org. diseases
- 10 - Mobility app. diseases

- 11 - Sudden death syndrome
- 12 - Cannibalism
- 13 - Yolk sac. inflam.
- 14 - Other causes

Statistical analysis of body weight on day 49

Tab. No. 5

Treatment	Tr. No.	Males				Females			
		Number of birds	Average body weight	Divergence valuation	Variations coeff. valuation	Number of birds	Average body weight	Divergence valuation	Variations coeff. valuation
			g/birds	g/birds	%		g/birds	g/birds	%
T1	1	177	4456.89	486.33	10.91	177	4022.80	536.84	13.34
T2	2	175	3941.47	382.77	9.71	175	3622.93	360.57	9.95
T3	3	175	4132.28	383.04	9.27	178	3749.61	352.52	9.40

Performance results per pen

Body weight per phases

Tab. No. 6a

Treatment	Tr. no.	Pen	Sex	Day 1		Day 21		Day 35		Day 42		Day 49	
				Birds	Average body weight	Birds	Average body weight	Birds	Average body weight	Birds	Average body weight	Birds	Average body weight
					g		g		g		g		
T1	1	1 4	♂	200	51.50	200	1640.65	200	3445.51	198	4212.68	177	4456.89
			♀	200	51.05	200	1553.00	200	3124.61	199	3792.98	177	4022.80
T2	2	2 5	♂	200	51.95	200	1627.61	199	3328.72	198	3827.53	175	3941.47
			♀	200	51.75	198	1284.13	198	2723.93	196	3393.42	175	3622.93
T3	3	3 6	♂	200	50.70	200	1684.87	200	3351.69	198	3911.73	175	4132.28
			♀	200	50.20	200	1478.35	200	2996.49	200	3528.77	178	3749.61

Weight gain per phases

Tab. No. 6b

Treat.	Tr. no.	Pen	Sex	Day 1 - 21		Day 22 - 35		Day 36 - 42		Day 43 - 49		Day 1 - 49	
				Weight gain per phase	Daily weight gain	Weight gain per phase	Daily weight gain	Weight gain per phase	Daily weight gain	Weight gain per phase	Daily weight gain	Weight gain per phase	Daily weight gain
				g	g	g	g	g	g	g	g	g	g
T1	1	1	♂	1589.15	75.67	1804.86	128.92	767.17	109.60	244.21	34.89	4405.39	89.91
		4	♀	1501.95	71.52	1571.61	112.26	668.37	95.48	229.82	32.83	3971.75	81.06
T2	2	2	♂	1575.66	75.03	1701.11	121.51	498.81	71.26	113.94	16.28	3889.52	79.38
		5	♀	1232.38	58.68	1439.80	102.84	669.49	95.64	229.51	32.79	3571.18	72.88
T3	3	3	♂	1634.17	77.82	1666.82	119.06	560.04	80.01	220.55	31.51	4081.58	83.30
		6	♀	1428.15	68.01	1518.14	108.44	532.28	76.04	220.84	31.55	3699.41	75.50

Feed conversion ratio (Feed consumption per 1 kg of live weight)

Tab. No. 6c

Treatment	Tr · no	Pen	Sex	Feed conversion ratio			
				Day 21	Day 35	Day 42	Day 49
				g/kg LW	g/kg LW	g/kg LW	g/kg LW
T1	1	1	♂	1391.83	1776.81	2066.51	2751.79
		4	♀	1406.31	1862.80	2204.02	2915.03
T2	2	2	♂	1334.16	1633.87	2031.80	2821.43
		5	♀	1459.94	1829.28	2139.35	2773.92
T3	3	3	♂	1252.62	1649.02	2065.53	2808.41
		6	♀	1420.50	1849.83	2193.12	2945.18

Feed consumption per phases

Tab. No. 6d

Treatment	Tr. no.	Pen	Sex	Feed consumption				
				Starter (1-21 days)	Grower (29-35 days)	Finisher (36-42 days)	Finisher (43-49 days)	Total
				kg	kg	kg	kg	kg
T1	1	1	♂	456.70	767.70	499.30	447.10	2170.80
		4	♀	436.80	727.30	499.50	412.00	2075.60
T2	2	2	♂	434.30	648.00	457.50	406.30	1946.10
		5	♀	371.20	615.40	436.30	335.80	1758.70
T3	3	3	♂	422.10	683.30	494.40	431.10	2030.90
		6	♀	420.00	688.60	439.20	417.90	1965.70