



MEZINÁRODNÍ TESTOVÁNÍ DRŮBEŽE
ÚSTRAŠICE státní podnik

390 02 Tábor 2

Česká republika

Final report

PEKIN – TEST no. 170

2022

XXXXX

XXXXX

15 March – 2 May 2022

Study Investigator: **Jana Mlyniská Härtelová**
Ing. Markéta Krekulová

Ústřašice, May 2022

Basic tests information

The basic dates

Beginning of the test: 13 February 2022 (put into the incubator)
15 March 2022 (day old ducklings)
End of the test: 25 April 2022 – 42 days of age
2 May 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

280 ducklings in each treatment – divided in 4 pens (2 pens by 70 males and 2 pens by 70 females). Total there were 1680 ducklings.

Origin of hatching eggs:

Sample	Cross	Breeding organization	State
1	xxxxxx	xxxxxx	xxxxxx
2	xxxxxx	xxxxxx	xxxxxx
3	xxxxxx	xxxxxx	xxxxxx
4	xxxxxx	xxxxxx	xxxxxx
5	xxxxxx	xxxxxx	xxxxxx
6	xxxxxx	xxxxxx	xxxxxx

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 – 42	18 hours of light
Day 43 – 49	23 hours of light

Stocking density Day 1 – 49 7.3 birds/m²

Feeding

Feed was produced in xxxxx.

Day 1 – 21 Starter „VKCH 1“

Day 22 – 35 Grower „VKCH 2”

Day 36 – 49 Finisher „VKCH 3“

The diets were calculated following Czech feeding recommendations.

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
xxxxx	0.200	-	-
xxxxx	-	0.200	0.200
xxxxx	0.300	0.300	0.300
xxxxx	0.050	-	-
xxxxx	-	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, 28 and 35 (all the birds were weighed individually, without fasting) and 42 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, 22-28 days, 29-35 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, 28, 35, 42 and 49.

Feed consumption

Feed consumption was calculated for the periods 1-21 days, 22-28 days, 29-35 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.

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	19 (♂)	70	140	840
		13 (♀)	70		
	2	20 (♂)	70	140	
		14 (♀)	70		
	3	21 (♂)	70	140	
		15 (♀)	70		
	4	22 (♂)	70	140	
		16 (♀)	70		
	5	23 (♂)	70	140	
		17 (♀)	70		
	6	24 (♂)	70	140	
		18 (♀)	70		
49	1	7 (♂)	70	140	840
		1 (♀)	70		
	2	8 (♂)	70	140	
		2 (♀)	70		
	3	9 (♂)	70	140	
		3 (♀)	70		
	4	10 (♂)	70	140	
		4 (♀)	70		
	5	11 (♂)	70	140	
		5 (♀)	70		
	6	12 (♂)	70	140	
		6 (♀)	70		

Statistical analyses

Performance results of live weight (on days 35, 42 and 49) and results of carcass analysis (on days 42 and 49) were statistically evaluated using the ANOVA model (Scheffe test, Duncan test) or Kruskal-Wallis test (nonparametric method).

Results

Tab. No.	1 Hatching results
	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
	(For a detailed analysis of results the following methods were applied: divergence valuation. variations coeff. valuation. average divergence.)
	6 Statistical analyses of performance results – live weight
	7 Statistical analyses – carcass analysis at 42 days
	8 Statistical analyses – carcass analysis at 49 days
	9 Performance results per pen:
	9a Body weight
	9b Weight gain
	9c Feed conversion ratio
	9d 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
xxxxx	1	94.50	77.75	82.28	140	140	97.65	56.86	57.00
xxxxx	2	86.75	77.00	88.86	140	140	92.53	55.93	57.14
xxxxx	3	95.75	82.25	85.90	140	140	95.68	58.21	58.57
xxxxx	4	92.50	77.00	83.24	140	140	95.03	57.43	56.71
xxxxx	5	96.00	80.25	83.59	140	140	95.25	55.71	55.86
xxxxx	6	98.75	84.75	85.82	140	140	90.00	57.29	57.07

Performance results
Body weight per phases

Tab. No. 2a

Treatment	Tr. no.	Day 1		Day 21		Day 28		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	Birds	Average body weight
			g		g		g		g				
xxxxx	1	280	56.93	280	1567.86	279	2340.35	279	3179.34	279	3481.98	140	3915.59
xxxxx	2	280	56.54	279	1580.05	279	2329.29	278	3126.13	278	3446.25	138	3880.49
xxxxx	3	280	58.39	280	1557.45	279	2288.95	279	3088.99	279	3451.14	139	3829.96
xxxxx	4	280	57.07	279	1587.77	279	2325.31	279	3068.45	278	3445.17	139	3891.56
xxxxx	5	280	55.79	279	1576.15	278	2295.79	277	3105.94	277	3426.49	136	3738.62
xxxxx	6	280	57.18	280	1489.61	279	2199.97	279	2994.21	279	3434.60	139	3668.79

Treatment	Tr. no.	Sex	Day 1		Day 21		Day 28		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	Birds	Average body weight
				g		g		g		g				
xxxxx	1	♂	140	56.86	140	1573.33	139	2338.50	139	3163.11	139	3509.67	70	4065.81
		♀	140	57.00	140	1562.40	140	2342.19	140	3195.46	140	3454.49	70	3765.37
xxxxx	2	♂	140	55.93	139	1569.78	139	2342.98	138	3166.63	138	3435.52	68	4011.56
		♀	140	57.14	140	1590.24	140	2315.69	140	3086.21	140	3456.83	70	3753.17
xxxxx	3	♂	140	58.21	140	1568.51	139	2303.48	139	3101.32	139	3452.29	69	3997.32
		♀	140	58.57	140	1546.39	140	2274.53	140	3076.74	140	3450.00	70	3664.99
xxxxx	4	♂	140	57.43	139	1615.09	139	2334.60	139	3120.01	138	3479.06	69	4029.51
		♀	140	56.71	140	1560.66	140	2316.09	140	3017.26	140	3411.77	70	3755.59
xxxxx	5	♂	140	55.71	140	1609.86	140	2312.89	140	3125.60	140	3448.13	70	3994.67
		♀	140	55.86	139	1542.19	138	2278.45	137	3085.84	137	3404.37	66	3467.05
xxxxx	6	♂	140	57.29	140	1534.09	140	2203.64	140	3078.96	140	3534.43	70	3929.44
		♀	140	57.07	140	1445.14	139	2196.27	139	2908.85	139	3334.06	69	3404.36

Weight gain per phases

Tab. No. 2b

Treatment	Tr. no.	Day 1 - 21		Day 22 - 28		Day 29 - 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	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	g	g
xxxxx	1	1510.94	71.95	772.49	110.36	838.99	119.86	302.63	43.23	433.61	61.94	3858.66	78.75
xxxxx	2	1523.51	72.55	749.24	107.03	796.84	113.83	320.12	45.73	434.24	62.03	3823.96	78.04
xxxxx	3	1499.05	71.38	731.51	104.50	800.03	114.29	362.15	51.74	378.82	54.12	3771.56	76.97
xxxxx	4	1530.70	72.89	737.54	105.36	743.14	106.16	376.72	53.82	446.39	63.77	3834.49	78.25
xxxxx	5	1520.36	72.40	719.65	102.81	810.14	115.73	320.55	45.79	312.13	44.59	3682.83	75.16
xxxxx	6	1432.43	68.21	710.36	101.48	794.24	113.46	440.39	62.91	234.19	33.46	3611.61	73.71

Treatment	Tr. no.	Sex	Day 1 - 21		Day 22 - 28		Day 29 - 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	Weight gain per phase	Daily weight gain
			g	g	g	g	g	g	g	g	g	g	g	g
xxxxx	1	♂	1516.47	72.21	765.18	109.31	824.60	117.80	346.56	49.51	556.15	79.45	4008.96	81.82
		♀	1505.40	71.69	779.79	111.40	853.28	121.90	259.02	37.00	310.89	44.41	3708.37	75.68
xxxxx	2	♂	1513.86	72.09	773.19	110.46	823.65	117.66	268.89	38.41	576.04	82.29	3955.63	80.73
		♀	1533.09	73.00	725.46	103.64	770.51	110.07	370.62	52.95	296.34	42.33	3696.03	75.43
xxxxx	3	♂	1510.29	71.92	734.97	105.00	797.84	113.98	350.96	50.14	545.03	77.86	3939.10	80.39
		♀	1487.81	70.85	728.14	104.02	802.21	114.60	373.26	53.32	214.99	30.71	3606.41	73.60
xxxxx	4	♂	1557.66	74.17	719.51	102.79	785.42	112.20	359.04	51.29	550.45	78.64	3972.08	81.06
		♀	1503.94	71.62	755.44	107.92	701.16	100.17	394.51	56.36	343.81	49.12	3698.87	75.49
xxxxx	5	♂	1554.15	74.01	703.03	100.43	812.71	116.10	322.53	46.08	546.54	78.08	3938.96	80.39
		♀	1486.33	70.78	736.26	105.18	807.39	115.34	318.53	45.50	62.67	8.95	3411.19	69.62
xxxxx	6	♂	1476.80	70.32	669.55	95.65	875.32	125.05	455.47	65.07	395.01	56.43	3872.16	79.02
		♀	1388.06	66.10	751.14	107.31	712.58	101.80	425.21	60.74	70.30	10.04	3347.29	68.31

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

Tab. No. 2c

Treatment	Tr. no.	Feed conversion ratio				
		Day 21	Day 28	Day 35	Day 42	Day 49
		g/kg LW	g/kg LW	g/kg LW	g/kg LW	g/kg LW
xxxxxx	1	1400.90	1583.10	1755.28	2232.49	2519.05
xxxxxx	2	1408.92	1594.78	1782.72	2244.64	2555.89
xxxxxx	3	1431.60	1630.08	1811.73	2248.08	2598.41
xxxxxx	4	1408.61	1609.06	1823.51	2262.16	2534.35
xxxxxx	5	1402.18	1614.78	1787.42	2247.09	2600.05
xxxxxx	6	1462.27	1625.47	1788.52	2178.02	2595.88

Treatment	Tr. no.	Sex	Feed conversion ratio				
			Day 21	Day 28	Day 35	Day 42	Day 49
			g/kg LW	g/kg LW	g/kg LW	g/kg LW	g/kg LW
xxxxxx	1	♂	1404.21	1578.21	1759.95	2209.52	2421.23
		♀	1397.58	1587.96	1750.70	2255.66	2624.67
xxxxxx	2	♂	1436.30	1594.54	1766.61	2269.55	2510.03
		♀	1382.10	1595.02	1799.02	2220.24	2603.51
xxxxxx	3	♂	1417.64	1602.52	1804.75	2258.54	2544.82
		♀	1445.77	1657.80	1818.72	2237.68	2656.02
xxxxxx	4	♂	1395.56	1607.66	1800.17	2253.86	2490.32
		♀	1422.02	1610.47	1847.47	2270.50	2580.92
xxxxxx	5	♂	1385.65	1601.27	1773.37	2223.15	2457.56
		♀	1419.55	1628.68	1801.97	2271.87	2774.17
xxxxxx	6	♂	1432.22	1619.73	1750.13	2134.92	2459.09
		♀	1494.18	1631.28	1829.45	2224.05	2756.05

Feed consumption per phases

Tab. No. 2d

Treatment	Tr.. no.	Feed consumption					
		Starter (1-21 days)	Grower (22-28 days)	Grower (29-35 days)	Finisher (36-42 days)	Finisher (43-49 days)	Total
		kg	kg	kg	kg	kg	kg
xxxxx	1	615.00	418.70	523.30	611.80	289.80	2458.60
xxxxx	2	621.10	415.30	512.90	601.20	289.60	2440.10
xxxxx	3	624.30	416.70	520.40	603.20	295.40	2460.00
xxxxx	4	624.00	419.90	517.20	605.50	295.50	2462.10
xxxxx	5	616.60	414.00	507.20	595.00	269.80	2402.60
xxxxx	6	609.90	387.80	496.40	593.00	276.10	2363.20

Treatment	Tr.. no.	Sex	Feed consumption					Total
			Starter (1-21 days)	Grower (22-28 days)	Grower (29-35 days)	Finisher (36-42 days)	Finisher (43-49 days)	
			kg	kg	kg	kg	kg	
xxxxx	1	♂	309.30	203.70	260.80	304.10	146.40	1224.30
		♀	305.70	215.00	262.50	307.70	143.40	1234.30
xxxxx	2	♂	313.40	205.90	252.70	304.00	143.30	1219.30
		♀	307.70	209.40	260.20	297.20	146.30	1220.80
xxxxx	3	♂	311.30	201.80	264.90	305.80	155.10	1238.90
		♀	313.00	214.90	255.50	297.40	140.30	1221.10
xxxxx	4	♂	313.30	208.40	259.00	301.40	151.10	1233.20
		♀	310.70	211.50	258.20	304.10	144.40	1228.90
xxxxx	5	♂	312.30	206.20	257.50	297.20	150.20	1223.40
		♀	304.30	207.80	249.70	297.80	119.60	1179.20
xxxxx	6	♂	307.60	192.10	254.70	302.00	147.20	1203.60
		♀	302.30	195.70	241.70	291.00	128.90	1159.60

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	%	%	%
xxxxx	1	♂	3384	2371	346	27	0.78	645	19.07	27.23	578	17.07	24.37	1223	36.14	51.59	70.05	80.26
		♀	3383	2134	293	28	0.81	577	17.05	27.04	519	15.34	24.32	1096	32.39	51.36	63.07	71.72
		♂	3384	2251	319	27	0.80	611	18.06	27.14	548	16.20	24.34	1159	34.25	51.48	66.53	75.96
xxxxx	2	♂	3303	2308	340	26	0.80	626	18.95	27.11	558	16.91	24.19	1184	35.86	51.30	69.89	80.19
		♀	3487	2257	296	34	0.97	634	18.18	28.08	537	15.41	23.81	1171	33.60	51.89	64.74	73.22
		♂	3395	2283	318	30	0.89	630	18.55	27.60	548	16.14	24.00	1178	34.69	51.60	67.23	76.59
xxxxx	3	♂	3336	2276	345	24	0.73	604	18.11	26.54	560	16.78	24.59	1164	34.89	51.13	68.24	78.60
		♀	3488	2238	312	32	0.91	625	17.93	27.95	554	15.89	24.77	1180	33.82	52.72	64.14	73.10
		♂	3412	2257	329	28	0.82	615	18.02	27.24	557	16.33	24.68	1172	34.34	51.92	66.15	75.79
xxxxx	4	♂	3361	2298	345	25	0.73	611	18.17	26.57	554	16.48	24.10	1164	34.65	50.67	68.39	78.65
		♀	3421	2196	302	32	0.93	611	17.87	27.84	534	15.60	24.31	1145	33.47	52.14	64.19	73.02
		♂	3391	2247	323	28	0.83	611	18.02	27.19	544	16.03	24.20	1155	34.05	51.39	66.26	75.79
xxxxx	5	♂	3377	2316	349	27	0.80	620	18.35	26.76	573	16.96	24.73	1192	35.31	51.49	68.58	78.92
		♀	3455	2257	300	31	0.89	628	18.17	27.81	545	15.79	24.16	1173	33.96	51.98	65.33	74.02
		♂	3416	2286	325	29	0.85	624	18.26	27.28	559	16.37	24.45	1183	34.63	51.73	66.94	76.44
xxxxx	6	♂	3470	2290	341	27	0.77	667	19.22	29.12	533	15.37	23.29	1200	34.59	52.41	66.01	75.85
		♀	3364	2169	286	30	0.90	636	18.89	29.30	485	14.42	22.37	1121	33.31	51.67	64.47	72.98
		♂	3417	2230	314	28	0.83	651	19.06	29.21	509	14.90	22.84	1160	33.96	52.05	65.25	74.44

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	%	%	%
xxxxx	1	♂	4066	2668	371	30	0.73	796	19.58	29.84	629	15.48	23.59	1426	35.06	53.44	65.62	74.75
		♀	3758	2599	325	37	1.00	802	21.34	30.86	595	15.83	22.90	1397	37.18	53.76	69.15	77.80
		♂	3912	2633	348	34	0.86	799	20.43	30.35	612	15.65	23.25	1411	36.08	53.60	67.31	76.21
xxxxx	2	♂	4012	2677	382	38	0.94	801	19.96	29.91	614	15.31	22.95	1415	35.27	52.86	66.73	76.25
		♀	3753	2555	327	41	1.08	785	20.91	30.71	595	15.84	23.27	1379	36.75	53.98	68.07	76.79
		♂	3880	2615	354	39	1.01	793	20.42	30.31	604	15.57	23.11	1397	35.99	53.41	67.39	76.51
xxxxx	3	♂	3997	2688	383	33	0.83	806	20.18	30.01	621	15.52	23.09	1427	35.70	53.09	67.24	76.82
		♀	3672	2503	326	37	1.01	765	20.84	30.58	586	15.95	23.41	1351	36.79	53.99	68.15	77.04
		♂	3834	2595	354	35	0.92	786	20.50	30.29	603	15.73	23.24	1389	36.23	53.53	67.68	76.92
xxxxx	4	♂	4030	2701	376	34	0.85	816	20.26	30.22	638	15.84	23.64	1455	36.10	53.86	67.03	76.35
		♀	3756	2521	321	37	0.98	767	20.41	30.41	593	15.78	23.51	1359	36.20	53.92	67.13	75.67
		♂	3892	2611	348	35	0.91	791	20.33	30.31	615	15.82	23.58	1407	36.15	53.89	67.08	76.02
xxxxx	5	♂	3995	2667	377	34	0.85	807	20.21	30.27	621	15.53	23.27	1428	35.75	53.54	66.76	76.19
		♀	3467	2250	320	26	0.74	640	18.46	28.43	551	15.90	24.50	1191	34.35	52.93	64.91	74.15
		♂	3739	2465	349	30	0.80	726	19.42	29.46	587	15.70	23.81	1313	35.12	53.27	65.93	75.27
xxxxx	6	♂	3929	2586	370	36	0.92	811	20.64	31.35	565	14.37	21.84	1376	35.01	53.19	65.81	75.22
		♀	3404	2222	307	34	1.01	662	19.46	29.81	510	14.97	22.93	1172	34.43	52.74	65.28	74.30
		♂	3669	2406	339	35	0.96	737	20.09	30.65	537	14.65	22.34	1275	34.74	52.99	65.57	74.80

Mortality

Tab. No. 4

Treatment	Tr. no.	Mortality in the period							Mortality according causes														
		Day 1-21	Day 22-28	Day 29-35	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	birds	%															
XXXXX	1	0	1	0	0	0	1	0.36										1					
XXXXX	2	1	0	1	0	1	3	1.07									2	1					
XXXXX	3	0	1	0	0	0	1	0.36									1						
XXXXX	4	1	0	0	1	0	2	0.71									1	1					
XXXXX	5	1	1	1	0	1	4	1.43									4						
XXXXX	6	0	1	0	0	0	1	0.36									1						

Treatment	Tr. no.	Sex	Mortality in the period							Mortality according causes													
			Day 1-21	Day 22-28	Day 29-35	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	birds	%														
XXXXX	1	♂	0	1	0	0	0	1	0.71									1					
		♀	0	0	0	0	0	0	0.00														
XXXXX	2	♂	1	0	1	0	1	3	2.14									2	1				
		♀	0	0	0	0	0	0	0.00														
XXXXX	3	♂	0	1	0	0	0	1	0.71									1					
		♀	0	0	0	0	0	0	0.00														
XXXXX	4	♂	1	0	0	1	0	2	1.43									1	1				
		♀	0	0	0	0	0	0	0.00														
XXXXX	5	♂	0	0	0	0	0	0	0.00														
		♀	1	1	1	0	1	4	2.86									4					
XXXXX	6	♂	0	0	0	0	0	0	0.00														
		♀	0	1	0	0	0	1	0.71									1					

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	%
xxxxx	1	70	4065.81	270.73	6.66	70	3765.37	332.65	8.83
xxxxx	2	68	4011.56	383.66	9.56	70	3753.17	280.99	7.49
xxxxx	3	69	3997.32	223.42	5.59	70	3664.99	221.06	6.03
xxxxx	4	69	4029.51	275.86	6.85	70	3755.59	243.79	6.49
xxxxx	5	70	3994.67	232.40	5.82	66	3467.05	295.71	8.53
xxxxx	6	70	3929.44	290.29	7.39	69	3404.36	282.92	8.31

Statistical analyses of performance results – live weight

Performance results were statistically evaluated using the ANOVA model (Sheffe test) or Kruskal-Wallis test (nonparametric method).

The following symbols are used for levels of significance:

- $p \leq 0.001$ * * * - differences are very high significant
- $p \leq 0.01$ * * - differences are high significant
- $p \leq 0.05$ * - differences are significant
- $p > 0.05$ o - differences are not significant

Average body weight on day 35 (by sex)

Tab. No. 6a

Treatment	Treat. No.	Sex	No. of birds	Average (g)	Standard deviation	Scheffe test					
						xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	♂	139	3163.11	266.32		o	o	o	o	o
xxxxx	2		138	3166.63	270.74	0.999999		o	o	o	o
xxxxx	3		139	3101.32	199.89	0.494509	0.429761		o	o	o
xxxxx	4		139	3120.01	269.02	0.829543	0.777421	0.995250		o	o
xxxxx	5		140	3125.60	241.80	0.897961	0.857442	0.983944	0.999987		o
xxxxx	6		140	3078.96	217.56	0.147766	0.116499	0.988948	0.856135	0.772914	

Treatment	Treat. No.	Sex	No. of birds	Average (g)	Standard deviation	Scheffe test					
						xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	♀	140	3195.46	259.39		**	**	***	**	***
xxxxx	2		140	3086.21	223.64	0.008522		o	o	o	***
xxxxx	3		140	3076.74	218.67	0.002659	0.999759		o	o	***
xxxxx	4		140	3017.26	233.63	0.000000	0.287542	0.464564		o	**
xxxxx	5		137	3085.84	211.40	0.008751	1.000000	0.999807	0.299954		***
xxxxx	6		139	2908.85	238.85	0.000000	0.000000	0.000001	0.009615	0.000000	

Average body weight on day 35 (both sexes together)

Treatment	Treat. No.	No. of birds	Average	Standard deviation	Scheffe test					
			(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	279	3179.34	262.89		o	**	***	*	***
xxxxx	2	278	3126.13	250.95	0.244318		o	o	o	***
xxxxx	3	279	3088.99	209.51	0.001715	0.659163		o	o	***
xxxxx	4	279	3068.45	256.64	0.000024	0.163974	0.962534		o	*
xxxxx	5	277	3105.94	227.73	0.026412	0.965542	0.984090	0.650905		***
xxxxx	6	279	2994.21	243.40	0.000000	0.000000	0.000748	0.023092	0.000021	

Average body weight on day 42 (by sex)

Tab. No. 6b

Treatment	Treat. No.	Sex	No. of birds	Average	Standard deviation	Scheffe test					
				(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	♂	139	3509.67	316.65		o	o	o	o	o
xxxxx	2		138	3435.52	330.92	0.479250		o	o	o	o
xxxxx	3		139	3452.29	266.52	0.744502	0.998745		o	o	o
xxxxx	4		138	3479.06	304.84	0.978937	0.907204	0.988520		o	o
xxxxx	5		140	3448.13	278.71	0.680239	0.999684	0.999999	0.977768		o
xxxxx	6		140	3534.43	236.04	0.991859	0.154751	0.350902	0.772863	0.290737	

Treatment	Treat. No.	Sex	No. of birds	Average	Standard deviation	Scheffe test					
				(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	♀	140	3454.49	278.09		o	o	o	o	**
xxxxx	2		140	3456.83	271.15	1.000000		o	o	o	**
xxxxx	3		140	3450.00	218.77	0.999996	0.999965		o	o	**
xxxxx	4		140	3411.77	212.74	0.834869	0.800596	0.890902		o	o
xxxxx	5		137	3404.37	240.39	0.721470	0.679369	0.795624	0.999949		o
xxxxx	6		139	3334.06	250.91	0.005542	0.004231	0.009121	0.227209	0.346843	

Average body weight on day 42 (both sexes together)

Treatment	Treat. No.	No. of birds	Average	Standard deviation	Scheffe test						
			(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	
xxxxx	1	279	3481.98	298.67		o	o	o	o	o	o
xxxxx	2	278	3446.25	301.94	0.793238		o	o	o	o	o
xxxxx	3	279	3451.14	243.29	0.878295	0.999978		o	o	o	o
xxxxx	4	278	3445.17	264.21	0.771293	1.000000	0.999940		o	o	o
xxxxx	5	277	3426.49	260.91	0.331814	0.981361	0.950917	0.985537		o	o
xxxxx	6	279	3434.60	263.02	0.520328	0.998419	0.991643	0.999012	0.999730		o

Average body weight on day 49 (by sex)

Tab. No. 6c

Treatment	Treat. No.	Sex	No. of birds	Average	Standard deviation	Scheffe test						
				(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	
xxxxx	1	♂	70	4065.81	270.73		o	o	o	o	o	o
xxxxx	2		68	4011.56	383.66	0.938692		o	o	o	o	o
xxxxx	3		69	3997.32	223.42	0.845534	0.999886		o	o	o	o
xxxxx	4		69	4029.51	275.86	0.989325	0.999645	0.993996		o	o	o
xxxxx	5		70	3994.67	232.40	0.820688	0.999732	1.000000	0.991179		o	o
xxxxx	6		70	3929.44	290.29	0.154580	0.717332	0.850579	0.505436	0.869344		o

Treatment	Treat. No.	Sex	No. of birds	Average	Standard deviation	Scheffe test					
				(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	♀	70	3765.37	332.65		o	o	o	***	***
xxxxx	2		70	3753.17	280.99	0.999939		o	o	***	***
xxxxx	3		70	3664.99	221.06	0.473935	0.621641		o	**	***
xxxxx	4		70	3755.59	243.79	0.999979	1.000000	0.592535		***	***
xxxxx	5		66	3467.05	295.71	0.000000	0.000002	0.004708	0.000001		o
xxxxx	6		69	3404.36	282.92	0.000000	0.000000	0.000019	0.000000	0.887163	

Average body weight on day 49 (both sexes together)

Treatment	Treat. No.	No. of birds	Average	Standard deviation	Kruskal-Wallis test					
			(g)		xxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx
xxxxxx	1	140	3915.59	337.70		o	o	o	***	***
xxxxxx	2	138	3880.49	358.56	1.000000		o	o	*	***
xxxxxx	3	139	3829.96	277.20	0.143451	1.000000		o	o	*
xxxxxx	4	139	3891.56	293.44	1.000000	1.000000	1.000000		*	***
xxxxxx	5	136	3738.62	373.84	0.000251	0.012614	1.000000	0.012443		o
xxxxxx	6	139	3668.79	388.59	0.000000	0.000021	0.021219	0.000020	1.000000	

Statistical analyses of performance results – carcass analysis

Performance results were statistically evaluated using the ANOVA model (Scheffe test, Duncan test) or Kruskal-Wallis test (nonparametric method).

The following symbols are used for levels of significance:

- $p \leq 0.001$ * * * - differences are very high significant
- $p \leq 0.01$ * * - differences are high significant
- $p \leq 0.05$ * - differences are significant
- $p > 0.05$ o - differences are not significant

Weight of Breast muscles with skin at 42 days (by sex)

Tab. No. 7a

Treatment	Treat. No.	Sex	No. of measurement	Average	Standard deviation	Scheffe test					
				(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	♂	69	645.45	84.34		o	o	o	o	o
xxxxx	2		69	625.80	82.80	0.834451		o	o	o	o
xxxxx	3		70	604.06	72.73	0.096863	0.762450		o	o	***
xxxxx	4		69	610.64	92.33	0.254719	0.939616	0.998646		o	**
xxxxx	5		70	619.60	71.09	0.599184	0.998987	0.931082	0.994099		*
xxxxx	6		70	666.89	72.34	0.773301	0.101795	0.000705	0.004398	0.032000	

Treatment	Treat. No.	Sex	No. of measurement	Average	Standard deviation	Duncan test					
				(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	♀	70	576.97	62.27		***	***	**	***	***
xxxxx	2		70	633.97	60.05	0.000006		o	o	o	o
xxxxx	3		70	625.34	81.30	0.000042	0.479499		o	o	o
xxxxx	4		70	611.26	72.53	0.002617	0.067882	0.216244		o	o
xxxxx	5		70	627.74	61.46	0.000018	0.584515	0.833140	0.173376		o
xxxxx	6		70	635.51	64.15	0.000005	0.892269	0.423632	0.056469	0.524451	

Weight of Breast muscles with skin at 42 days (both sexes together)

Treatment	Treat. No.	No. of measurement	Average	Standard deviation	Scheffe test						
			(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	
xxxxx	1	139	610.96	81.39		o	o	o	o	o	**
xxxxx	2	139	629.91	72.10	0.492492		o	o	o	o	o
xxxxx	3	140	614.70	77.60	0.999383	0.722620		o	o	o	**
xxxxx	4	139	610.95	82.65	1.000000	0.491585	0.999372		o	o	**
xxxxx	5	140	623.67	66.34	0.850315	0.992802	0.962822	0.849692			o
xxxxx	6	140	651.20	69.92	0.001390	0.349659	0.005917	0.001381	0.096297		

Weight of Thigh muscles with skin at 42 days (by sex)

Tab. No. 7b

Treatment	Treat. No.	Sex	No. of measurement	Average	Standard deviation	Scheffe test						
				(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	
xxxxx	1	♂	69	577.62	54.03		o	o	o	o	o	***
xxxxx	2		69	558.43	52.14	0.301353		o	o	o	o	o
xxxxx	3		70	559.80	41.56	0.384679	0.999991		o	o	o	*
xxxxx	4		69	553.83	47.46	0.098792	0.996562	0.988250		o	o	o
xxxxx	5		70	572.80	40.34	0.995662	0.634570	0.726425	0.310225			***
xxxxx	6		70	533.37	36.46	0.000008	0.066093	0.041244	0.226859	0.000121		

Treatment	Treat. No.	Sex	No. of measurement	Average	Standard deviation	Duncan test					
				(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	+o	70	518.97	42.02		*	***	o	**	***
xxxxx	2		70	537.49	44.66	0.020588		0.036666	o	o	***
xxxxx	3		70	554.26	48.22	0.000013	0.036666		*	o	***
xxxxx	4		70	533.77	45.70	0.052734	0.626863	0.012440		o	***
xxxxx	5		70	545.37	44.05	0.001033	0.302011	0.244824	0.152809		***
xxxxx	6		70	485.14	46.30	0.000018	0.000003	0.000004	0.000011	0.000004	

Weight of Thigh muscles with skin at 42 days (both sexes together)

Treatment	Treat. No.	No. of measurement	Average	Standard deviation	Scheffe test						
			(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	
xxxxx	1	139	548.09	56.46		o	o	o	o	o	***
xxxxx	2	139	547.88	49.47	1.000000		o	o	o	o	***
xxxxx	3	140	557.03	44.93	0.797138	0.781108		o	o	o	***
xxxxx	4	139	543.73	47.49	0.989761	0.991772	0.389935		o	o	***
xxxxx	5	140	559.09	44.28	0.612678	0.592968	0.999716	0.224491		o	***
xxxxx	6	140	509.26	48.06	0.000000	0.000000	0.000000	0.000002	0.000000		

Weight of Breast muscles with skin at 49 days (by sex)

Tab. No. 8a

Treatment	Treat. No.	Sex	No. of measurement	Average	Standard deviation	Scheffe test					
				(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	♂	70	796.20	82.22		o	o	o	o	o
xxxxx	2		68	800.62	112.79	0.999845		o	o	o	o
xxxxx	3		69	806.49	74.55	0.990728	0.999383		o	o	o
xxxxx	4		69	816.28	74.98	0.844006	0.942700	0.992797		o	o
xxxxx	5		70	807.34	72.71	0.986434	0.998790	1.000000	0.995216		o
xxxxx	6		70	810.86	74.03	0.954550	0.991101	0.999851	0.999570	0.999948	

Treatment	Treat. No.	Sex	No. of measurement	Average	Standard deviation	Scheffe test					
				(g)		xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	+o	70	801.97	91.04		o	o	o	***	***
xxxxx	2		70	784.69	77.04	0.864724		o	o	***	***
xxxxx	3		70	765.33	68.72	0.135208	0.796920		o	***	***
xxxxx	4		70	766.63	67.63	0.166078	0.841156	0.999999		***	***
xxxxx	5		66	639.86	63.94	0.000000	0.000000	0.000000	0.000000		o
xxxxx	6		69	662.46	75.02	0.000000	0.000000	0.000000	0.000000	0.684237	

Weight of Breast muscles with skin at 49 days (both sexes together)

Treatment	Treat. No.	No. of measurement	Average (g)	Standard deviation	Kruskal-Wallis test					
					xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	140	799.09	86.48		o	o	o	***	***
xxxxx	2	138	792.54	96.30	1.000000		o	o	***	***
xxxxx	3	139	785.76	74.34	1.000000	1.000000		o	***	**
xxxxx	4	139	791.27	75.35	1.000000	1.000000	1.000000		***	***
xxxxx	5	136	726.07	108.30	0.000000	0.000000	0.000053	0.000001		o
xxxxx	6	139	737.19	105.16	0.000002	0.000023	0.002153	0.000063	1.000000	

Weight of Thigh muscles with skin at 49 days (by sex)

Tab. No. 8b

Treatment	Treat. No.	Sex	No. of measurement	Average (g)	Standard deviation	Scheffe test					
						xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	♂	70	629.44	58.15		o	o	o	o	***
xxxxx	2		68	614.22	59.17	0.679047		o	o	o	***
xxxxx	3		69	620.55	44.72	0.955798	0.990580		o	o	***
xxxxx	4		69	638.46	45.42	0.953020	0.164570	0.501977		o	***
xxxxx	5		70	620.56	44.32	0.955253	0.990379	1.000000	0.498150		***
xxxxx	6		70	564.80	48.93	0.000000	0.000006	0.000000	0.000000	0.000000	

Treatment	Treat. No.	Sex	No. of measurement	Average (g)	Standard deviation	Kruskal-Wallis test					
						xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	♀	70	595.09	63.67		o	o	o	***	***
xxxxx	2		70	594.51	51.86	1.000000		o	o	***	***
xxxxx	3		70	585.77	41.26	1.000000	1.000000		o	***	***
xxxxx	4		70	592.77	57.81	1.000000	1.000000	1.000000		***	***
xxxxx	5		66	551.23	51.89	0.000002	0.000005	0.000411	0.000008		*
xxxxx	6		69	509.62	46.92	0.000000	0.000000	0.000000	0.000000	0.011186	

Weight of Thigh muscles with skin at 49 days (both sexes together)

Treatment	Treat. No.	No. of measurement	Average (g)	Standard deviation	Kruskal-Wallis test					
					xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
xxxxx	1	140	612.26	63.15		o	o	o	***	***
xxxxx	2	138	604.22	56.25	1.000000		o	o	*	***
xxxxx	3	139	603.04	46.28	0.979373	1.000000		o	o	***
xxxxx	4	139	615.45	56.68	1.000000	1.000000	0.631690		***	***
xxxxx	5	136	586.91	59.24	0.000350	0.043614	0.269144	0.000147		***
xxxxx	6	139	537.41	55.21	0.000000	0.000000	0.000000	0.000000	0.000000	

Performance results per pen

Body weight per phases

Tab. No. 9a

Treatment	Tr. no.	Pen	Sex	Day 1		Day 21		Day 28		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	Birds	Average body weight
					g		g		g		g				
xxxxx	1	7 19	♂	70	56.43	70	1589.74	70	2350.89	70	3156.70	70	3633.29	70	4065.81
				70	57.29	70	1556.91	69	2325.94	69	3169.61	69	3384.26		
		1 13	+0	70	56.86	70	1554.64	70	2345.51	70	3187.64	70	3525.51	70	3765.37
70	57.14			70	1570.16	70	2338.86	70	3203.29	70	3383.46				
xxxxx	2	8 20	♂	70	55.86	69	1585.93	69	2397.87	69	3179.72	69	3568.33	68	4011.56
				70	56.00	70	1553.87	70	2288.87	69	3153.54	69	3302.71		
		2 14	+0	70	56.57	70	1542.24	70	2348.39	70	3084.11	70	3431.80	70	3753.17
70	57.71			70	1638.23	70	2283.00	70	3088.30	70	3481.86				
xxxxx	3	9 21	♂	70	59.00	70	1543.41	69	2303.35	69	3083.71	69	3570.57	69	3997.32
				70	57.43	70	1593.60	70	2303.61	70	3118.69	70	3335.70		
		3 15	+0	70	59.86	70	1541.07	70	2307.97	70	3094.47	70	3411.61	70	3664.99
70	57.29			70	1551.70	70	2241.09	70	3059.00	70	3488.39				
xxxxx	4	10 22	♂	70	56.71	70	1632.21	70	2303.21	70	3152.83	69	3597.61	69	4029.51
				70	58.14	69	1597.71	69	2366.43	69	3086.72	69	3360.51		
		4 16	+0	70	56.43	70	1547.89	70	2340.33	70	3105.97	70	3402.46	70	3755.59
70	57.00			70	1573.43	70	2291.86	70	2928.54	70	3421.09				
xxxxx	5	11 23	♂	70	55.71	70	1608.50	70	2311.09	70	3123.40	70	3519.59	70	3994.67
				70	55.71	70	1611.23	70	2314.70	70	3127.80	70	3376.67		
		5 17	+0	70	56.00	69	1534.41	68	2261.37	67	3047.85	67	3351.67	66	3467.05
70	55.71			70	1549.86	70	2295.04	70	3122.20	70	3454.81				
xxxxx	6	12 24	♂	70	57.29	70	1532.59	70	2208.97	70	3036.91	70	3598.07	70	3929.44
				70	57.29	70	1535.59	70	2198.30	70	3121.00	70	3470.79		
		6 18	+0	70	57.00	70	1444.00	69	2170.68	69	2896.58	69	3303.36	69	3404.36
70	57.14			70	1446.27	70	2221.50	70	2920.94	70	3364.31				

Weight gain per phases

Tab. No. 9b

Treat.	Tr. no.	Pen	Sex	Day 1 - 21		Day 22 - 28		Day 29 - 35		Day 36 - 42		Day 43 - 49		Day 1 - 49 (42*)	
				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	Weight gain per phase	Daily weight gain
				g	g	g	g	g	g	g	g	g	g	g	g
xxxxxx	1	7 19	♂	1533.31	73.01	761.14	108.73	805.81	115.12	476.59	68.08	432.53	61.79	4009.39	81.82
				1499.63	71.41	769.03	109.86	843.67	120.52	214.65	30.66			3326.98*	79.21*
		1 13	+0	1497.79	71.32	790.87	112.98	842.13	120.30	337.87	48.27	239.86	34.27	3708.51	75.68
				1513.01	72.05	768.70	109.81	864.43	123.49	180.17	25.74			3326.31*	79.20*
xxxxxx	2	8 20	♂	1530.07	72.86	811.94	115.99	781.86	111.69	388.61	55.52	443.23	63.32	3955.70	80.73
				1497.87	71.33	735.00	105.00	864.66	123.52	149.17	21.31			3246.71*	77.30*
		2 14	+0	1485.67	70.75	806.14	115.16	735.73	105.10	347.69	49.67	321.37	45.91	3696.60	75.44
				1580.51	75.26	644.77	92.11	805.30	115.04	393.56	56.22			3424.14*	81.53*
xxxxxx	3	9 21	♂	1484.41	70.69	759.93	108.56	780.36	111.48	486.86	69.55	426.75	60.96	3938.32	80.37
				1536.17	73.15	710.01	101.43	815.07	116.44	217.01	31.00			3278.27*	78.05*
		3 15	+0	1481.21	70.53	766.90	109.56	786.50	112.36	317.14	45.31	253.37	36.20	3605.13	73.57
				1494.41	71.16	689.39	98.48	817.91	116.84	429.39	61.34			3431.10*	81.69*
xxxxxx	4	10 22	♂	1575.50	75.02	671.00	95.86	849.61	121.37	444.78	63.54	431.90	61.70	3972.79	81.08
				1539.57	73.31	768.72	109.82	720.29	102.90	273.78	39.11			3302.36*	78.63*
		4 16	+0	1491.46	71.02	792.44	113.21	765.64	109.38	296.49	42.36	353.13	50.45	3699.16	75.49
				1516.43	72.21	718.43	102.63	636.69	90.96	492.54	70.36			3364.09*	80.10*
xxxxxx	5	11 23	♂	1552.79	73.94	702.59	100.37	812.31	116.04	396.19	56.60	475.09	67.87	3938.96	80.39
				1555.51	74.07	703.47	100.50	813.10	116.16	248.87	35.55			3320.96*	79.07*
		5 17	+0	1478.41	70.40	726.96	103.85	786.48	112.35	303.82	43.40	115.37	16.48	3411.05	69.61
				1494.14	71.15	745.19	106.46	827.16	118.17	332.61	47.52			3399.10*	80.93*
xxxxxx	6	12 24	♂	1475.30	70.25	676.39	96.63	827.94	118.28	561.16	80.17	331.37	47.34	3872.16	79.02
				1478.30	70.40	662.71	94.67	922.70	131.81	349.79	49.97			3413.50*	81.27*
		6 18	+0	1387.00	66.05	726.68	103.81	725.90	103.70	406.78	58.11	101.00	14.43	3347.36	68.31
				1389.13	66.15	775.23	110.75	699.44	99.92	443.37	63.34			3307.17*	78.74*

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

Tab. No. 9c

Treatment	Tr. no.	Pen	Sex	Feed conversion ratio				
				Day 21	Day 28	Day 35	Day 42	Day 49
				g/kg LW	g/kg LW	g/kg LW	g/kg LW	g/kg LW
xxxxx	1	7	♂	1400.05	1558.68	1757.26	2133.84	2421.23
		19		1408.46	1598.23	1762.66	2291.94	
	13	1	♀	1422.47	1586.62	1755.44	2222.17	2624.67
				1372.93	1589.30	1745.98	2290.56	
xxxxx	2	8	♂	1443.86	1587.16	1767.54	2198.89	2510.03
		20		1428.69	1602.16	1765.67	2345.90	
	14	2	♀	1420.01	1569.47	1794.91	2238.31	2603.51
				1346.40	1621.30	1803.12	2202.44	
xxxxx	3	9	♂	1423.56	1608.25	1829.62	2219.44	2544.82
		21		1411.90	1596.87	1780.51	2299.80	
	15	3	♀	1462.80	1638.42	1808.76	2265.79	2656.02
				1428.85	1677.76	1828.80	2210.19	
xxxxx	4	10	♂	1357.49	1595.91	1763.50	2180.60	2490.32
		22		1435.02	1619.26	1838.17	2332.29	
	16	4	♀	1421.29	1565.10	1780.44	2242.50	2580.92
				1422.73	1656.80	1918.56	2298.35	
xxxxx	5	11	♂	1373.95	1578.11	1758.16	2179.64	2457.56
		23		1397.34	1624.40	1788.57	2268.51	
	17	5	♀	1422.45	1618.62	1826.10	2294.24	2774.17
				1416.72	1638.31	1779.42	2251.10	
xxxxx	6	12	♂	1414.98	1587.68	1757.89	2101.13	2459.09
		24		1449.42	1651.93	1742.57	2169.95	
	18	6	♀	1497.82	1657.13	1847.76	2274.80	2756.05
				1490.53	1606.38	1811.55	2174.93	

Feed consumption per phases

Tab. No. 9d

Treatment	Tr. no.	Pen	Sex	Feed consumption					
				Starter (1-21 days)	Grower (22-28 days)	Grower (29-35 days)	Finisher (36-42 days)	Finisher (43-49 days)	Total
				kg	kg	kg	kg	kg	kg
xxxxx	1	7	♂	155.80	100.70	131.80	154.40	146.40	689.10
		19		153.50	103.00	129.00	149.70	535.20	
		1	♀	154.80	105.70	131.20	156.70	143.40	691.80
		13		150.90	109.30	131.30	151.00	542.50	
xxxxx	2	8	♂	158.00	104.60	125.20	153.60	143.30	684.70
		20		155.40	101.30	127.50	150.40	534.60	
		2	♀	153.30	104.70	129.50	150.20	146.30	684.00
		14		154.40	104.70	130.70	147.00	536.80	
xxxxx	3	9	♂	153.80	101.80	133.70	157.50	155.10	701.90
		21		157.50	100.00	131.20	148.30	537.00	
		3	♀	157.80	106.90	127.10	149.30	140.30	681.40
		15		155.20	108.00	128.40	148.10	539.70	
xxxxx	4	10	♂	155.10	102.20	131.90	152.10	151.10	692.40
		22		158.20	106.20	127.10	149.30	540.80	
		4	♀	154.00	102.40	130.70	147.00	144.40	678.50
		16		156.70	109.10	127.50	157.10	550.40	
xxxxx	5	11	♂	154.70	100.60	129.10	152.60	150.20	687.20
		23		157.60	105.60	128.40	144.60	536.20	
		5	♀	150.60	98.30	124.00	142.30	119.60	634.80
		17		153.70	109.50	125.70	155.50	544.40	
xxxxx	6	12	♂	151.80	93.70	128.20	155.50	147.20	676.40
		24		155.80	98.40	126.50	146.50	527.20	
		6	♀	151.40	96.80	121.10	149.20	128.90	647.40
		18		150.90	98.90	120.60	141.80	512.20	