



MEZINÁRODNÍ TESTOVÁNÍ DRŮBEŽE ÚSTRAŠICE

státní podnik

390 02 Tábor 2

Česká republika

BROILER FEEDING TEST No. 1219



11 November – 15 December 2020

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Material and methods

Test term

Beginning of the test: 11 November 2020 (transfer to the chicken house)

End of the test: 15 December 2020

Birds

In total there were 7800 day old chicks (males) of [REDACTED]. Day-old chicks were randomly distributed into 10 dietary treatments with 6 replicates per treatment and 130 chicken per replicate.

Origin 1-day old chicks:

breeder company – [REDACTED]

parent flock – [REDACTED]

age of the breeding flock - 59 weeks

Experimental treatments:

Tr. No.	Tr.	Description
1	T1	[REDACTED]
2	T2	[REDACTED]
3	T3	[REDACTED]
4	T4	[REDACTED]
5	T5	[REDACTED]
6	T6	[REDACTED]
7	T7	[REDACTED]
8	T8	[REDACTED]
9	T9	[REDACTED]
10	T10	[REDACTED]

Housing system

Chickens were kept in the windowless chicken house with full climatic control, on deep litter. The heating program was conducted according to the Manual of [REDACTED]. Drinking water was supplied ad libitum by nipple drinkers. Each pen was equipped with manually filled tube feeders. Bedding material was wood shaving.

Light was provided as follows during the experimental period:

Lighting programme: Day 1 - 7	23 hours of light + 1 hour of darkness
Day 8 - 32	18 hours of light + 6 hours of darkness
Day 33 - 35	23 hours of light + 1 hour of darkness

Stocking density: 16 broilers per square meter

The conduct of the trial was conformed to the national welfare legislation.

Veterinary precautions

The chicken house was disinfected with [REDACTED] before the chick placement.

On days 1 and 12 the chicken were vaccinated with [REDACTED]. On the first days old chickens was applied the water solution of permanganate.

Feed

Feed was produced by International Poultry Testing Station Ústřašice

Day 1 - 10 Starter (BR 1)

Day 11- 28 Grower (BR2)

Day 29 - 35 Finisher (BR 3)

Diet formulas:

Components (%)	Starter BR1	Grower BR2	Finisher BR3
Soybean extr. groats	36.98	32.71	26.64
Wheat	30.00	35.00	42.40
Maize	23.77	22.20	21.00
Soybean oil	5.00	6.00	6.00
Calcium carbonate	1.49	1.35	1.12
MCP - monocalciumphosphate	1.14	1.10	1.20
Salt	0.29	0.30	0.29
Sodium sulfate	0.12	0.15	0.15
L-lysine	0.40	0.39	0.39
L-threonin	0.20	0.20	0.20
DL-methionin	0.10	0.10	0.10
AMV BR1 Plus	0.50	-	-
AMV BR2 Plus	-	0.50	-
AMV BR3 Plus	-	-	0.50
Nutrient content			
Crude protein (g/kg)	230.00	215.00	195.00
Fat (g/kg)	64.42	74.24	74.36
Lysine (g/kg)	14.01	12.97	11.64
Methionine (g/kg)	6.25	5.68	5.17
Ca (g/kg)	9.60	8.83	7.90
P (g/kg)	4.40	4.24	4.33
Vitamin A (IU/kg)	13500	10000	10000
Vitamin D3 (IU/kg)	5000	5000	5000
ME (MJ/kg)	12.22	12.51	12.61

Parameters recorded and methods applied

Live weight

Live weight was measured on day 1 and on day 10 (all the birds in each pen were weighed altogether). On day 28 of age birds were weighed individually, without fasting. On day 35 birds were weighed individually, after 12 hours of fasting.

Feed consumption

Feed consumption was determined per pen for the feed – starter, grower and finisher.

Weight gain

Weight gain per phase and average daily weight gains were calculated for the periods 1 – 10 days, 11 – 28 days, 29 – 35 days and for the overall experiment (1 – 35 days).

Feed conversion ratio

Feed conversion ratio was calculated as feed consumption per 1 kg of live weight and per 1 kg of weight gain for the periods 1 – 10 days, 11 – 28 days, 29 – 35 days and for the overall experiment (1 – 35 days). The calculation was included weight of deaths.

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, weight and reason of mortality on the day of death. Mortality was recorded for the periods 1 – 10 days, 11 – 28 days, 29 – 35 days and 1 – 35 days.

Statistical analyses

Performance results of live weight (on days 1, 10, 28 and 35) were statistically evaluated using the ANOVA single-factor model (Duncan test) or nonparametric method (Kruskal-Wallis test).

Results

Tab. No. **1 Hatchability**

2 Performance results:

2a Body weight

2b Weight gain

2c Feed conversion per 1 kg of live weight

2d Feed conversion per 1 kg of weight gain

2e Feed consumption

3 Mortality

4 Statistical analysis of body weight at the age of 35 days

(average body weight, standard deviation, coefficient of variation)

5 Statistical analyses of performance results

6 Performance results per pen:

6a Body weight

6b Weight gain

6c Feed conversion per 1 kg of live weight

6d Feed conversion per 1 kg of weight gain

6e Feed consumption

Results of incubation and hatching

Tab. No. 1

Treatment	Tr. No.	Fertility	Hatchability		Birds housed	Average weight	
			Set eggs	Fertile eggs		Hatching eggs	Day old chicks
		%	%	%		g	g
T1	1	82.22	77.22	93.92	780	68.00	44.87
T2	2				780		44.87
T3	3				780		45.00
T4	4				780		45.13
T5	5				780		45.13
T6	6				780		45.13
T7	7				780		45.13
T8	8				780		45.06
T9	9				780		45.26
T10	10				780		45.06

Body weight per phases

Tab. No. 2a

Treatment	Tr. No.	Day 1		Day 10		Day 28		Day 35	
		Birds	Average body weight	Birds	Average body weight	Birds	Average body weight	Birds	Average body weight
			g		g		g		g
T1	1	780	44.87	780	109.32	760	885.91	759	1512.52
T2	2	780	44.87	780	302.44	752	1630.37	749	2290.47
T3	3	780	45.00	780	305.19	755	1749.67	751	2469.72
T4	4	780	45.13	780	306.47	759	1708.97	756	2455.60
T5	5	780	45.13	780	309.10	758	1707.66	752	2446.72
T6	6	780	45.13	780	304.42	752	1631.32	747	2407.63
T7	7	780	45.13	780	298.85	759	1652.94	757	2425.87
T8	8	780	45.06	780	311.73	761	1730.16	760	2485.30
T9	9	780	45.26	780	311.60	756	1729.31	754	2473.90
T10	10	780	45.06	780	313.85	762	1804.53	759	2577.80

Weight gain per phases

Tab. No. 2b

Treatment	Tr. No.	Day 1 - 10		Day 11 - 28		Day 29 - 35		Day 1 – 35	
		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
T1	1	64.45	6.44	776.59	43.14	626.61	78.33	1467.64	41.93
T2	2	257.56	25.76	1327.94	73.77	660.09	82.51	2245.60	64.16
T3	3	260.19	26.02	1444.48	80.25	720.05	90.01	2424.72	69.28
T4	4	261.35	26.13	1402.50	77.92	746.62	93.33	2410.47	68.87
T5	5	263.97	26.40	1398.56	77.70	739.05	92.38	2401.59	68.62
T6	6	259.29	25.93	1326.89	73.72	776.31	97.04	2362.50	67.50
T7	7	253.72	25.37	1354.09	75.23	772.93	96.62	2380.74	68.02
T8	8	266.67	26.67	1418.43	78.80	755.14	94.39	2440.24	69.72
T9	9	266.35	26.63	1417.71	78.76	744.59	93.07	2428.64	69.39
T10	10	268.78	26.88	1490.68	82.82	773.27	96.66	2532.74	72.36

Feed conversion per 1 kg of live weight

Tab. No. 2c

Treatment	Tr. No.	Feed conversion ratio		
		Day 10	Day 28	Day 35
		g/kg live weight	g/kg live weight	g/kg live weight
T1	1	2384.07	1482.56	1483.16
T2	2	1000.21	1432.18	1590.26
T3	3	979.75	1343.05	1483.61
T4	4	999.62	1382.76	1518.44
T5	5	1014.31	1404.20	1538.94
T6	6	1019.79	1437.57	1504.78
T7	7	1031.15	1415.80	1492.59
T8	8	1004.77	1387.08	1513.03
T9	9	988.69	1385.18	1495.46
T10	10	1034.44	1331.44	1462.26

Feed conversion per 1 kg of weight gain

Tab. No. 2d

Treatment	Tr. No.	Feed conversion ratio			
		Day 1-10	Day 11-28	Day 29-35	Day 1-35
		g/kg weight gain	g/kg weight gain	g/kg weight gain	g/kg weight gain
T1	1	4043.96	1188.60	1484.03	1528.99
T2	2	1174.46	1245.36	1994.12	1622.62
T3	3	1149.20	1170.89	1836.02	1511.65
T4	4	1172.23	1202.80	1837.40	1547.25
T5	5	1187.71	1219.61	1859.87	1568.32
T6	6	1197.28	1245.86	1651.93	1534.17
T7	7	1214.55	1228.85	1661.38	1521.25
T8	8	1174.57	1205.60	1808.01	1541.27
T9	9	1156.68	1206.26	1758.92	1523.72
T10	10	1207.87	1150.93	1774.17	1488.57

Feed consumption per phases

Tab. No. 2e

Treatment	Tr. No.	Feed consumption			
		Starter (day 1-10)	Grower (day 11-28)	Finisher (day 29-35)	Total (day 1-35)
		kg	kg	kg	kg
T1	1	203.29	821.45	707.35	1732.09
T2	2	235.95	1570.55	984.55	2791.05
T3	3	233.23	1584.05	990.90	2808.18
T4	4	238.96	1594.90	1036.60	2870.46
T5	5	244.55	1613.55	1033.20	2891.30
T6	6	242.15	1571.45	951.90	2765.50
T7	7	240.36	1577.80	970.60	2788.76
T8	8	244.31	1620.74	1038.00	2903.05
T9	9	240.30	1617.80	987.60	2845.70
T10	10	253.23	1612.55	1042.80	2908.58

Mortality

Tab. No. 3

Treat.	Tr. No.	Mortality in the period									Mortality according causes														
		Day 1 - 10		Day 11 - 28		Day 29 - 35		Day 1 - 35			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		birds	g	birds	g	birds	g	birds	g	%															
T1	1	0	0	5	2165	1	1931	6	4096	0.77										4			2	15	
T2	2	0	0	13	8811	3	4207	16	13018	2.05										14			2	15	
T3	3	0	0	13	10156	4	5941	17	16097	2.18										16			1	12	
T4	4	0	0	9	7411	3	4847	12	12258	1.54										11			1	12	
T5	5	0	0	10	6681	6	10002	16	16683	2.05										13			3	12	
T6	6	0	0	15	10502	5	4484	20	14986	2.56										15			5	13	
T7	7	0	0	9	7203	2	2413	11	9616	1.41										11				12	
T8	8	0	0	7	5046	1	1931	8	6977	1.03									1	6			1	12	
T9	9	0	0	12	11516	2	3522	14	15038	1.79										13			1	12	
T10	10	0	0	6	3534	3	6269	9	9803	1.15										8			1	12	

Causes:

1 - Viral diseases

2 - Bacterial diseases

3 - Fungal diseases

4 - Parasitary diseases

5 - Tumors

6 - Injuries

7 - Digestive tract diseases

8 - Respiratory tract diseases

9 - Reproduction tract diseases

10 - Locomotion apparatus diseases

11 - Sudden death syndrome

12 - Cannibalism

13 - Diverticulus inflammation

14 - Culling and other causes

15 - Sampling (excluded of calculation)

Statistical analysis - Body weight at 35 days of age

Tab. No. 4

Treatment	Tr. No.	Cocks			
		No. of birds	Average body weight	Standard deviation	Coefficient of variation
			g/birds	g/birds	%
T1	1	759	1512.52	271.79	17.97
T2	2	749	2290.47	276.13	12.06
T3	3	751	2469.72	277.97	11.26
T4	4	756	2455.60	275.90	11.24
T5	5	752	2446.72	281.24	11.49
T6	6	747	2407.63	361.61	15.02
T7	7	757	2425.87	302.25	12.46
T8	8	760	2485.30	282.86	11.38
T9	9	754	2473.90	287.19	11.61
T10	10	759	2577.80	299.99	11.64

Statistical analyses of performance results

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

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

Body weight - day 1

Tab. No. 5a

Treat.	Tr. No.	No. of box	Average (g)	Standard deviation	Duncan test									
					T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
T1	1	6	44.87	0.67		o	o	o	o	o	o	o	o	o
T2	2	6	44.87	0.67	1.000000		o	o	o	o	o	o	o	o
T3	3	6	45.00	0.34	0.603596	0.626759		o	o	o	o	o	o	o
T4	4	6	45.13	0.40	0.369187	0.375385	0.648371		o	o	o	o	o	o
T5	5	6	45.13	0.40	0.380052	0.383698	0.659639	1.000000		o	o	o	o	o
T6	6	6	45.13	0.40	0.375385	0.380052	0.654704	1.000000	1.000000		o	o	o	o
T7	7	6	45.13	0.20	0.360732	0.369187	0.639883	1.000000	1.000000	1.000000		o	o	o
T8	8	6	45.06	0.29	0.465720	0.482485	0.795011	0.815681	0.825659	0.821788	0.808059		o	o
T9	9	6	45.26	0.31	0.191266	0.194209	0.380052	0.639883	0.603596	0.626759	0.648371	0.506512		o
T10	10	6	45.06	0.29	0.482485	0.493380	0.808059	0.808059	0.821788	0.815681	0.795011	1.000000	0.500943	

Body weight - day 10

Tab. No. 5b

Treat.	Tr. No.	No. of box	Average (g)	Standard deviation	Duncan test									
					T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
T1	1	6	109.32	3.85		***	***	***	***	***	***	***	***	***
T2	2	6	302.44	11.20	0.000062		o	o	o	o	o	o	o	o
T3	3	6	305.19	8.50	0.000032	0.615487		o	o	o	o	o	o	o
T4	4	6	306.47	8.54	0.000028	0.478625	0.802879		o	o	o	o	o	o
T5	5	6	309.10	7.54	0.000023	0.253226	0.476136	0.609100		o	o	o	o	o
T6	6	6	304.42	8.31	0.000055	0.698907	0.880940	0.708632	0.411522		o	o	o	o
T7	7	6	298.85	8.64	0.000115	0.485395	0.265042	0.190768	0.083156	0.309595		*	*	*
T8	8	6	311.73	13.51	0.000017	0.121738	0.262510	0.356179	0.632025	0.218316	0.033059		o	o
T9	9	6	311.60	10.09	0.000019	0.121917	0.260231	0.350115	0.626645	0.218358	0.032932	0.980167		o
T10	10	6	313.85	3.47	0.000017	0.059593	0.144428	0.206201	0.405134	0.116631	0.013644	0.680553	0.682696	

Body weight - day 28

Tab. No. 5c

Treat.	Tr. No.	No. of birds	Average (g)	Standard deviation	Kruskal-Wallis test									
					T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
T1	1	760	885.91	203.28		***	***	***	***	***	***	***	***	***
T2	2	752	1630.37	256.67	0.000000		***	***	***	o	o	***	***	***
T3	3	755	1749.67	253.93	0.000000	0.000000		o	*	***	***	o	o	***
T4	4	759	1708.97	248.36	0.000000	0.000000	0.134087		o	*	**	o	o	***
T5	5	758	1707.66	246.11	0.000000	0.000002	0.033814	1.000000		o	*	o	o	***
T6	6	752	1631.32	296.07	0.000000	0.884403	0.000000	0.017347	0.073492		o	***	***	***
T7	7	759	1652.94	228.23	0.000000	1.000000	0.000000	0.003011	0.014940	1.000000		***	***	***
T8	8	761	1730.16	222.94	0.000000	0.000000	1.000000	1.000000	1.000000	0.000005	0.000000		o	***
T9	9	756	1729.31	236.36	0.000000	0.000000	1.000000	1.000000	0.965385	0.000002	0.000000	1.000000		***
T10	10	762	1804.53	196.66	0.000000	0.000000	0.000005	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	

Body weight - day 35

Tab. No. 5d

Treat.	Tr. No.	No. of birds	Average (g)	Standard deviation	Kruskal - Wallis test									
					T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
T1	1	759	1512.52	271.79		***	***	***	***	***	***	***	***	***
T2	2	749	2290.47	276.13	0.000000		***	***	***	***	***	***	***	***
T3	3	751	2469.72	277.97	0.000000	0.000000		o	o	o	o	o	o	***
T4	4	756	2455.60	275.90	0.000000	0.000000	1.000000		o	o	o	o	o	***
T5	5	752	2446.72	281.24	0.000000	0.000000	1.000000	1.000000		o	o	o	o	***
T6	6	747	2407.63	361.61	0.000000	0.000000	1.000000	1.000000	1.000000		o	*	o	***
T7	7	757	2425.87	302.25	0.000000	0.000000	0.251036	1.000000	1.000000	1.000000		**	*	***
T8	8	760	2485.30	282.86	0.000000	0.000000	1.000000	1.000000	0.408002	0.040941	0.002021		o	***
T9	9	754	2473.90	287.19	0.000000	0.000000	1.000000	1.000000	1.000000	0.332152	0.025628	1.000000		***
T10	10	759	2577.80	299.99	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000003	0.000000	

Performance results per replicate

Body weight per phases

Tab. No. 6a (page 1)

Treatment	Tr. No.	Pen	Day 1		Day 10		Day 28		Day 35	
			Birds	Average body weight	Birds	Average body weight	Birds	Average body weight	Birds	Average body weight
				g		g		g		g
T1	1	1	130	45.38	130	108.85	126	922.38	126	1639.29
		11	130	45.00	130	116.92	126	866.43	126	1518.49
		21	130	44.62	130	107.31	127	868.90	126	1426.43
		40	130	43.85	130	108.23	127	810.55	127	1473.78
		50	130	44.62	130	108.46	126	819.84	126	1455.95
		60	130	45.77	130	106.15	128	1025.86	128	1560.70
T2	2	2	130	45.38	130	309.23	126	1635.71	125	2333.76
		12	130	45.00	130	292.31	127	1515.59	127	2162.28
		22	130	44.62	130	306.15	124	1667.50	124	2297.74
		39	130	43.85	130	315.77	125	1644.56	125	2319.68
		49	130	44.62	130	305.38	126	1632.38	125	2405.12
		59	130	45.77	130	285.77	124	1689.03	123	2225.28
T3	3	3	130	45.38	130	299.62	122	1744.26	121	2483.06
		13	130	45.00	130	312.69	126	1708.02	126	2461.75
		23	130	44.62	130	293.46	125	1783.04	124	2486.61
		38	130	45.00	130	316.54	127	1734.02	127	2435.67
		48	130	44.62	130	306.15	127	1757.56	126	2478.49
		58	130	45.38	130	302.69	128	1770.94	127	2473.78
T4	4	4	130	45.38	130	308.46	125	1707.28	125	2521.04
		14	130	45.00	130	306.92	128	1647.50	128	2467.34
		24	130	44.62	130	306.15	127	1865.20	126	2553.97
		37	130	45.00	130	316.54	127	1626.69	126	2375.87
		47	130	45.00	130	310.00	127	1703.86	126	2526.59
		57	130	45.77	130	290.77	125	1703.68	125	2287.76
T5	5	5	130	45.38	130	315.77	124	1631.77	124	2375.08
		15	130	45.00	130	306.54	128	1679.06	127	2510.87
		25	130	44.62	130	295.77	127	1752.83	127	2430.87
		36	130	45.00	130	308.46	128	1607.66	126	2393.33
		46	130	45.00	130	315.77	125	1749.68	123	2465.28
		56	130	45.77	130	312.31	126	1825.79	125	2504.24

Body weight per phases

Tab. No. 6a (page 2)

Treatment	Tr. No.	Pen	Day 1		Day 10		Day 28		Day 35	
			Birds	Average body weight	Birds	Average body weight	Birds	Average body weight	Birds	Average body weight
				g		g		g		g
T6	6	6	130	45.38	130	306.15	126	1632.22	125	2429.52
		16	130	45.00	130	307.31	127	1667.87	127	2514.17
		26	130	44.62	130	293.08	126	1723.49	126	2408.49
		35	130	45.00	130	299.23	125	1592.24	125	2336.96
		45	130	45.00	130	317.69	125	1643.28	124	2439.52
		55	130	45.77	130	303.08	123	1525.77	120	2311.83
T7	7	7	130	45.38	130	310.77	126	1629.29	125	2383.44
		17	130	45.00	130	303.08	125	1629.28	125	2488.24
		27	130	45.00	130	295.77	127	1760.71	127	2467.56
		34	130	45.00	130	284.62	128	1525.94	128	2343.83
		44	130	45.00	130	298.85	127	1663.94	126	2394.60
		54	130	45.38	130	300.00	126	1709.37	126	2478.65
T8	8	8	130	45.38	130	319.23	126	1689.29	126	2368.81
		18	130	45.00	130	309.23	126	1707.70	126	2471.35
		28	130	44.62	130	286.15	126	1788.89	125	2528.88
		33	130	45.00	130	322.69	127	1669.13	127	2545.98
		43	130	45.00	130	320.38	128	1723.13	128	2480.31
		53	130	45.38	130	312.69	128	1802.27	128	2515.94
T9	9	9	130	45.38	130	301.54	127	1637.40	126	2387.70
		19	130	45.00	130	318.85	125	1787.60	125	2523.68
		29	130	45.00	130	318.85	126	1850.16	126	2556.11
		32	130	45.00	130	299.62	125	1646.88	125	2426.24
		42	130	45.38	130	323.46	125	1756.56	125	2564.72
		52	130	45.77	130	307.31	128	1698.52	127	2386.38
T10	10	10	130	45.38	130	309.23	127	1718.90	127	2540.31
		20	130	45.00	130	314.62	128	1819.30	126	2536.59
		30	130	44.62	130	315.77	126	1904.13	125	2756.96
		31	130	45.00	130	313.85	127	1746.46	127	2576.46
		41	130	45.00	130	318.85	126	1840.32	126	2538.97
		51	130	45.38	130	310.77	128	1799.06	128	2520.16

Weight gain per phases (WG) and daily weight gain

Tab. No. 6b (page 1)

Treatment	Tr. No.	Box	Day 1 - 10		Day 11 - 28		Day 29 - 35		Day 1 - 35	
			WG	DWG	WG	DWG	WG	DWG	WG	DWG
			g	g	g	g	g	g	g	g
T1	1	1	63.46	6.35	813.53	45.20	716.90	89.61	1593.90	45.54
		11	71.92	7.19	749.51	41.64	652.06	81.51	1473.49	42.10
		21	62.69	6.27	761.59	42.31	557.53	69.69	1381.81	39.48
		40	64.38	6.44	702.32	39.02	663.23	82.90	1429.93	40.86
		50	63.85	6.38	711.38	39.52	636.11	79.51	1411.34	40.32
		60	60.38	6.04	919.71	51.09	534.84	66.86	1514.93	43.28
T2	2	2	263.85	26.38	1326.48	73.69	698.05	87.26	2288.38	65.38
		12	247.31	24.73	1223.28	67.96	646.69	80.84	2117.28	60.49
		22	261.54	26.15	1361.35	75.63	630.24	78.78	2253.13	64.38
		39	271.92	27.19	1328.79	73.82	675.12	84.39	2275.83	65.02
		49	260.77	26.08	1327.00	73.72	772.74	96.59	2360.50	67.44
		59	240.00	24.00	1403.26	77.96	536.25	67.03	2179.52	62.27
T3	3	3	254.23	25.42	1444.65	80.26	738.80	92.35	2437.67	69.65
		13	267.69	26.77	1395.32	77.52	753.73	94.22	2416.75	69.05
		23	248.85	24.88	1489.58	82.75	703.57	87.95	2442.00	69.77
		38	271.54	27.15	1417.48	78.75	701.65	87.71	2390.67	68.30
		48	261.54	26.15	1451.41	80.63	720.93	90.12	2433.88	69.54
		58	257.31	25.73	1468.25	81.57	702.84	87.86	2428.39	69.38
T4	4	4	263.08	26.31	1398.82	77.71	813.76	101.72	2475.66	70.73
		14	261.92	26.19	1340.58	74.48	819.84	102.48	2422.34	69.21
		24	261.54	26.15	1559.04	86.61	688.77	86.10	2509.35	71.70
		37	271.54	27.15	1310.15	72.79	749.18	93.65	2330.87	66.60
		47	265.00	26.50	1393.86	77.44	822.73	102.84	2481.59	70.90
		57	245.00	24.50	1412.91	78.50	584.08	73.01	2241.99	64.06
T5	5	5	270.38	27.04	1316.00	73.11	743.31	92.91	2329.70	66.56
		15	261.54	26.15	1372.52	76.25	831.80	103.98	2465.87	70.45
		25	251.15	25.12	1457.07	80.95	678.03	84.75	2386.25	68.18
		36	263.46	26.35	1299.19	72.18	785.68	98.21	2348.33	67.10
		46	270.77	27.08	1433.91	79.66	715.60	89.45	2420.28	69.15
		56	266.54	26.65	1513.49	84.08	678.45	84.81	2458.47	70.24

Weight gain per phases (WG) and daily weight gain

Tab. No. 6b (page 2)

Treatment	Tr. No.	Box	Day 1 - 10		Day 11 - 28		Day 29 - 35		Day 1 - 35	
			WG	DWG	WG	DWG	WG	DWG	WG	DWG
			g	g	g	g	g	g	g	g
T6	6	6	260.77	26.08	1326.07	73.67	797.30	99.66	2384.14	68.12
		16	262.31	26.23	1360.57	75.59	846.30	105.79	2469.17	70.55
		26	248.46	24.85	1430.42	79.47	685.00	85.63	2363.88	67.54
		35	254.23	25.42	1293.01	71.83	744.72	93.09	2291.96	65.48
		45	272.69	27.27	1325.59	73.64	796.24	99.53	2394.52	68.41
		55	257.31	25.73	1222.70	67.93	786.06	98.26	2266.06	64.74
T7	7	7	265.38	26.54	1318.52	73.25	754.15	94.27	2338.06	66.80
		17	258.08	25.81	1326.20	73.68	858.96	107.37	2443.24	69.81
		27	250.77	25.08	1464.94	81.39	706.85	88.36	2422.56	69.22
		34	239.62	23.96	1241.32	68.96	817.89	102.24	2298.83	65.68
		44	253.85	25.38	1365.09	75.84	730.67	91.33	2349.60	67.13
		54	254.62	25.46	1409.37	78.30	769.29	96.16	2433.27	69.52
T8	8	8	273.85	27.38	1370.05	76.11	679.52	84.94	2323.42	66.38
		18	264.23	26.42	1398.47	77.69	763.65	95.46	2426.35	69.32
		28	241.54	24.15	1502.74	83.49	739.99	92.50	2484.26	70.98
		33	277.69	27.77	1346.44	74.80	876.85	109.61	2500.98	71.46
		43	275.38	27.54	1402.74	77.93	757.19	94.65	2435.31	69.58
		53	267.31	26.73	1489.57	82.75	713.67	89.21	2470.55	70.59
T9	9	9	256.15	25.62	1335.86	74.21	750.30	93.79	2342.31	66.92
		19	273.85	27.38	1468.75	81.60	736.08	92.01	2478.68	70.82
		29	273.85	27.38	1531.31	85.07	705.95	88.24	2511.11	71.75
		32	254.62	25.46	1347.26	74.85	779.36	97.42	2381.24	68.04
		42	278.08	27.81	1433.10	79.62	808.16	101.02	2519.34	71.98
		52	261.54	26.15	1391.21	77.29	687.86	85.98	2340.61	66.87
T10	10	10	263.85	26.38	1409.67	78.31	821.42	102.68	2494.93	71.28
		20	269.62	26.96	1504.68	83.59	717.29	89.66	2491.59	71.19
		30	271.15	27.12	1588.36	88.24	852.83	106.60	2712.34	77.50
		31	268.85	26.88	1432.61	79.59	830.00	103.75	2531.46	72.33
		41	273.85	27.38	1521.47	84.53	698.65	87.33	2493.97	71.26
		51	265.38	26.54	1488.29	82.68	721.09	90.14	2474.77	70.71

Feed conversion ratio (Feed consum. per 1 kg of live weight)

Tab. No. 6c (page 1)

Treatment	Tr. No.	Box	Feed conversion ratio		
			Day 10	Day 28	Day 35
			g/kg live weight	g/kg live weight	g/kg live weight
T1	1	1	2664.31	1585.22	1507.93
		11	2382.24	1543.20	1497.79
		21	2455.91	1439.48	1495.20
		40	1944.56	1515.49	1497.55
		50	2039.72	1549.60	1476.27
		60	2826.09	1296.37	1425.14
T2	2	2	1014.93	1477.04	1623.02
		12	1014.47	1512.48	1621.21
		22	972.36	1452.71	1636.93
		39	971.99	1448.87	1601.37
		49	989.92	1421.31	1484.87
		59	1041.72	1290.01	1580.19
T3	3	3	1040.56	1318.60	1468.77
		13	974.91	1391.64	1513.47
		23	960.16	1316.70	1467.50
		38	995.87	1383.10	1501.45
		48	912.81	1343.78	1484.70
		58	994.41	1306.67	1466.06
T4	4	4	980.30	1393.26	1484.77
		14	981.45	1422.38	1513.07
		24	998.99	1270.23	1482.64
		37	1002.67	1486.83	1600.93
		47	956.82	1417.88	1516.21
		57	1082.28	1321.64	1517.89
T5	5	5	968.33	1454.99	1553.64
		15	948.56	1405.76	1478.28
		25	1092.33	1351.06	1540.50
		36	1042.39	1460.01	1528.54
		46	1019.49	1418.52	1553.19
		56	1018.47	1345.11	1581.30

Feed conversion per 1 kg of live weight

Tab. No. 6c (page 2)

Treatment	Tr. No.	Box	Feed conversion ratio		
			Day 10	Day 28	Day 35
			g/kg live weight	g/kg live weight	g/kg live weight
T6	6	6	976.13	1425.98	1473.91
		16	993.74	1477.40	1514.21
		26	1136.48	1366.90	1514.90
		35	1023.14	1455.01	1507.08
		45	977.00	1419.89	1470.70
		55	1019.04	1487.19	1551.05
T7	7	7	981.68	1448.08	1529.03
		17	958.38	1441.73	1455.64
		27	1041.87	1328.05	1470.77
		34	1066.49	1502.76	1504.99
		44	1067.18	1383.71	1500.35
		54	1075.90	1404.05	1496.79
T8	8	8	968.92	1441.79	1566.07
		18	1000.25	1383.66	1496.59
		28	1072.85	1330.99	1460.03
		33	965.67	1451.35	1481.80
		43	985.83	1393.41	1500.47
		53	1043.30	1329.15	1575.96
T9	9	9	979.59	1417.01	1505.04
		19	968.64	1366.12	1465.13
		29	971.05	1314.31	1499.56
		32	1042.36	1437.15	1505.90
		42	954.82	1405.43	1491.14
		52	1020.03	1380.09	1507.22
T10	10	10	1003.23	1383.43	1452.93
		20	948.17	1334.00	1492.08
		30	1079.90	1262.91	1405.86
		31	1041.18	1350.22	1431.91
		41	1082.75	1347.80	1511.90
		51	1050.25	1316.28	1483.97

Feed conversion per 1 kg of weight gain

Tab. No. 6d (page 1)

Treatment	Tr. No.	Box	Feed conversion ratio			
			Day 1-10	Day 11-28	Day 29-35	Day 1-35
			g/kg weight gain	g/kg weight gain	g/kg weight gain	g/kg weight gain
T1	1	1	4569.70	1270.74	1405.40	1551.48
		11	3872.73	1221.50	1435.61	1544.20
		21	4203.68	1137.82	1583.91	1543.64
		40	3268.82	1255.63	1475.13	1544.00
		50	3465.06	1280.18	1378.67	1523.57
		60	4968.15	1004.23	1676.16	1468.41
T2	2	2	1189.50	1284.50	1975.26	1655.65
		12	1199.07	1315.49	1879.95	1656.12
		22	1138.24	1271.42	2139.48	1670.18
		39	1128.71	1261.67	1986.02	1632.68
		49	1159.29	1235.72	1624.19	1513.37
		59	1240.38	1111.65	2549.79	1614.30
T3	3	3	1226.32	1135.98	1841.45	1497.17
		13	1138.79	1211.47	1795.30	1542.14
		23	1132.30	1156.99	1861.85	1494.88
		38	1160.91	1201.03	1800.02	1529.96
		48	1068.53	1184.26	1843.68	1512.39
		58	1169.81	1137.01	1876.75	1493.61
T4	4	4	1149.42	1215.11	1683.05	1512.48
		14	1150.07	1239.72	1698.11	1541.33
		24	1169.41	1105.72	2075.62	1509.34
		37	1168.84	1291.68	1856.87	1632.20
		47	1119.30	1243.36	1725.07	1544.04
		57	1284.46	1134.59	2105.19	1549.52
T5	5	5	1130.87	1265.80	1778.24	1584.60
		15	1111.76	1233.07	1627.69	1505.41
		25	1286.37	1166.00	2039.25	1569.60
		36	1220.44	1260.69	1673.59	1558.09
		46	1188.92	1232.18	1900.77	1582.94
		56	1193.36	1168.85	2230.30	1611.29

Feed conversion per 1 kg of weight gain

Tab. No. 6d (page 2)

Treatment	Tr. No.	Box	Feed conversion ratio			
			Day 1-10	Day 11-28	Day 29-35	Day 1-35
			g/kg weight gain	g/kg weight gain	g/kg weight gain	g/kg weight gain
T6	6	6	1146.02	1241.61	1574.98	1502.48
		16	1164.22	1293.89	1588.20	1542.09
		26	1340.56	1172.02	1895.49	1543.94
		35	1204.24	1261.70	1622.09	1537.18
		45	1138.22	1230.04	1581.23	1499.00
		55	1200.30	1281.76	1686.58	1583.86
T7	7	7	1149.57	1260.92	1711.25	1559.13
		17	1125.48	1261.32	1482.72	1483.06
		27	1228.83	1152.69	1833.57	1498.33
		34	1266.77	1304.66	1509.22	1534.56
		44	1256.36	1192.23	1776.26	1529.43
		54	1267.67	1213.64	1707.42	1525.18
T8	8	8	1129.49	1257.73	1882.74	1597.08
		18	1170.60	1201.49	1755.35	1524.75
		28	1271.02	1158.01	1781.07	1486.72
		33	1122.16	1264.27	1540.95	1508.75
		43	1146.93	1211.05	1748.87	1528.25
		53	1220.43	1148.37	2209.09	1605.04
T9	9	9	1153.15	1236.83	1703.12	1534.49
		19	1127.81	1191.15	1711.77	1492.31
		29	1130.62	1145.88	1996.63	1526.82
		32	1226.59	1246.14	1655.72	1534.89
		42	1110.65	1228.88	1683.82	1518.44
		52	1198.53	1196.16	1828.76	1536.83
T10	10	10	1175.80	1203.16	1601.80	1479.56
		20	1106.42	1170.24	1903.20	1519.22
		30	1257.59	1082.11	1733.84	1429.44
		31	1215.45	1162.45	1607.06	1457.64
		41	1260.67	1158.22	1952.74	1539.66
		51	1229.86	1135.10	1908.99	1511.30

Feed consumption per phases

Tab. No. 6e (page 1)

Treatment	Tr. No.	Box	Feed consumption			
			Starter (D 1-10)	Grower (D 11-28)	Finisher (D 29-35)	Total (D 1-35)
			kg	kg	kg	kg
T1	1	1	37.70	152.25	126.95	316.90
		11	36.21	137.40	117.95	291.56
		21	34.26	129.15	112.95	276.36
		40	27.36	132.10	124.25	283.71
		50	28.76	136.55	110.50	275.81
		60	39.00	134.00	114.75	287.75
T2	2	2	40.80	271.80	173.25	485.85
		12	38.55	257.05	154.40	450.00
		22	38.70	271.00	167.20	476.90
		39	39.90	268.50	167.60	476.00
		49	39.30	261.30	156.70	457.30
		59	38.70	240.90	165.40	445.00
T3	3	3	40.53	251.80	164.50	456.83
		13	39.63	266.10	170.50	476.23
		23	36.63	265.00	163.10	464.73
		38	40.98	269.95	160.40	471.33
		48	36.33	269.30	164.60	470.23
		58	39.13	261.90	167.80	468.83
T4	4	4	39.31	267.75	171.20	478.26
		14	39.16	265.40	178.20	482.76
		24	39.76	266.90	179.50	486.16
		37	41.26	272.70	174.80	488.76
		47	38.56	274.30	179.20	492.06
		57	40.91	247.85	153.70	442.46
T5	5	5	39.75	265.55	163.90	469.20
		15	37.80	269.50	172.70	480.00
		25	42.00	264.30	175.60	481.90
		36	41.80	264.00	165.60	471.40
		46	41.85	276.35	165.20	483.40
		56	41.35	273.85	190.20	505.40

Feed consumption per phases

Tab. No. 6e (page 2)

Treatment	Tr. No.	Box	Feed consumption			
			Starter (D 1-10)	Grower (D 11-28)	Finisher (D 29-35)	Total (D 1-35)
			kg	kg	kg	kg
T6	6	6	38.85	261.25	157.20	457.30
		16	39.70	279.50	170.70	489.90
		26	43.30	260.10	163.60	467.00
		35	39.80	259.40	151.00	450.20
		45	40.35	261.05	154.30	455.70
		55	40.15	250.15	155.10	445.40
T7	7	7	39.66	266.80	160.90	467.36
		17	37.76	263.60	159.20	460.56
		27	40.06	263.00	164.60	467.66
		34	39.46	259.50	158.00	456.96
		44	41.46	257.80	162.40	461.66
		54	41.96	267.10	165.50	474.56
T8	8	8	40.21	274.35	161.20	475.76
		18	40.21	264.85	168.90	473.96
		28	39.91	266.85	165.00	471.76
		33	40.51	273.35	171.60	485.46
		43	41.06	272.29	169.50	482.85
		53	42.41	269.05	201.80	513.26
T9	9	9	38.40	263.20	161.10	462.70
		19	40.15	272.95	157.50	470.60
		29	40.25	273.45	177.60	491.30
		32	40.60	264.50	161.30	466.40
		42	40.15	279.05	170.10	489.30
		52	40.75	264.65	160.00	465.40
T10	10	10	40.33	268.80	167.10	476.23
		20	38.78	276.75	173.10	488.63
		30	44.33	265.00	185.10	494.43
		31	42.48	262.65	169.40	474.53
		41	44.88	273.85	171.90	490.63
		51	42.43	265.50	176.20	484.13