



MEZINÁRODNÍ TESTOVÁNÍ DRŮBEŽE
státní podnik, ÚSTRAŠICE

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THE COMPLETE REPORT

OF THE L. INTERNATIONAL TEST
OF BROILER BREEDERS AND THEIR PROGENY

2021 – 2022

Ústrašice, August 2022

1 The list of participants

Sample	Cross	Breeding organization	State
1	XXXXX	XXXXX	XXXXX
2	XXXXX	XXXXX	XXXXX
3	XXXXX	XXXXX	XXXXX
4	XXXXX	XXXXX	XXXXX
5	XXXXX	XXXXX	XXXXX
6	XXXXX	XXXXX	XXXXX
7	XXXXX	XXXXX	XXXXX
8	XXXXX	XXXXX	XXXXX
9	XXXXX	XXXXX	XXXXX
10	XXXXX	XXXXX	XXXXX
11	XXXXX	XXXXX	XXXXX
12	XXXXX	XXXXX	XXXXX

2 The basic tests information

2.1 The basic dates

Rearing 1 – 22 weeks (1 – 154 days): 25 March 2021 – 25 August 2021
Production 23 – 62 weeks (155 – 434 days): 26 August 2021 – 1 June 2022
End of the test: 10 July 2022

2.2 Location of the test

Mezinárodní testování drůbeže, s.p. Ústrašice, Czech Republic

2.3 Material

There were 12 genotypes compared in the test.
Number of birds in one group: 270 females of female line and 75 males of male line.

3 The rearing of pullets

3.1 Samples and their location

Females were reared in three pens by 90 chicks, males in separate pens by 75 chicks. Numbers of birds were reduced in 5th week of age to specified numbers. Females were reduced to 240 birds, i.e. 80 birds per pen, males to 45 birds in one entry. Small or too big birds, ill ones and sexing errors were culled. Females were graded to three pens with low, medium and high bodyweight. All three pens got to the same bodyweight level in a few weeks by using different feed amounts.

Males were transferred to production house in 19 weeks of age according to the dedicated system; each entry was split to four pens (i.e. 9 males per pen). Females were mated to males by one week later. After the final culling at 22 weeks of age the numbers were 220 females and 28 males per entry. Males were reduced later to 24 birds (xxxxx) and to 20 birds (xxxxx).

3.2 Housing system

Pullets were kept in windowless house with full control of the environment. There were used automated heating and ventilation. There is controlled ventilation in the houses which assures the air exchange 6 cubic metres/hour/1kg live weight in summer time with lower levels in winter. Relative humidity is 60-65%.

Manually filled tube feeders and nipple automatic drinkers were used.

3.3 Conditions of the environment

Temperature

Age	Bird level (°C)	House (°C)
Week 1	32	27
Week 2	28	23
Week 3	25	22
Week 4	21	21
Week 5	20	20
From week 6	18	18

Stocking density

Age	♀	♂
1 – 35 days	10.7	8.9
36 – 126 days	9.5	5.3
127 – 154 days	4.8	4.8

3.4 Lighting programme

Pullets were kept in windowless house. All the birds were submitted to the following lighting programme.

Age	Light from - to	Hours of light
Day 1 - 3	7 ⁰⁰ – 6 ⁰⁰	23
Day 4	7 ⁰⁰ – 2 ⁰⁰	19
Day 5	7 ⁰⁰ – 23 ⁰⁰	16
Day 6 - 7	7 ⁰⁰ – 20 ⁰⁰	13
Day 8 - 14	7 ⁰⁰ – 17 ⁰⁰	10
Day 15 - 147	7 ⁰⁰ – 15 ⁰⁰	8
Day 148 - 154	7 ⁰⁰ – 19 ⁰⁰	12

Light intensity in first three days was 60 lux/sq. m. and then till the end of rearing 5 lux/sq. m.

3.5 Feeding and watering

There were used four different feed mixtures in the test. Feed was produced in xxxxx

Day 1 – 14: K1 – starter, pellets

Day 15 – 35: K2 – pellets

Day 36 – 105: KZK – pellets

Day 106 – 154: NP-0 – pellets

Diet formulas

	K1	K2	KZK	NP-0
Components (%)				
Wheat	41.10	51.47	46.23	45.17
Maize	22.50	18.00	15.00	23.00
Oat	1.00	1.00	9.60	2.00
Sunflower meal	1.00	3.00	4.60	5.30
Wheat bran	-	2.70	14.00	10.90
Soybean meal	29.70	19.75	7.00	9.15
Soybean heat-treated	1.27	0.75	0.20	0.77
Salt	0.23	0.20	0.15	0.21
Limestone	1.78	1.80	2.00	2.18
Monocalcium phosphate	0.63	0.65	0.41	0.46
Sodium sulphate	0.17	0.22	0.21	0.23
Vitamin premix	0.62	0.46	0.60	0.63
Nutrient content (calculated values)				
Protein	20.80	18.00	14.55	15.00
Fat	3.38	2.80	2.50	3.01
Lysin	0.95	0.72	0.54	0.56
Methionin	0.44	0.34	0.30	0.33
Calcium	1.05	1.05	1.06	1.15
Phosphorus	0.42	0.42	0.42	0.38
Metabolizable energy MJ/kg	12.14	12.12	10.99	11.40

Feeding management

First week ad libitum. From 2nd week feeding was based on bodyweight. Chicks were weighed weekly (20% of the total number) and feed amount adjusted for each pen separately, depending on the development of bodyweight and comparison with the standard bodyweight.

Feed was distributed daily to pan feeders in first three weeks, since four weeks of age pellets were spread on the litter.

Since 4th week oats was fed on the litter in following amount:

females – 1,25 g/bird/day

males – 2,20 g/bird/day

The oats was fed once a day.

If the bodyweight is over the weekly standard, the same feed level is used for one more week. If the actual bodyweight is below the weekly standard, feed level is increased by the same % as the % difference of bodyweight.

After the transfer to production house feeding was changed to separate sex feeding – female troughs with grids and male pan feeders. Oats was still fed on the litter.

Drinking management

Nipples were used in rearing period. Water was available the whole day.

3.6 Veterinary precautions

The house was disinfected by 1% xxxxx liquid. As a prevention permanganate was given to the birds as well as vitamin – xxxxx.

Vaccination programme

Age	Vaccine
Day 1	xxxxx
Days 6	xxxxx
Days 11	xxxxx
Days 15	xxxxx
Days 29	xxxxx
Days 26	xxxxx
Days 33	xxxxx
Week 6	xxxxx
Week 7	xxxxx
Week 8	xxxxx
Week 9	xxxxx
Week 10	xxxxx
Week 11	xxxxx
Week 12	xxxxx
Week 13	xxxxx
Week 14	xxxxx
Week 15	xxxxx
Week 16	xxxxx
Week 17	xxxxx
Week 19	xxxxx

4 The production period

4.1 Samples and their location

Females were moved to production houses in the same number as were housed in rearing house, male were dynamically added to females only 9 birds in a box. By the beginning of lay the animals had time to become acquainted with the new environment and a different way of feeding and drinking.

Final selection before lay was done at 22 weeks. One sample was placed into four boxes in two halls according to the test station. To lay control was included in each sample 220 females and 28 males, therefore in each box were 55 females and 7 males (who were later reduced to 20 males, i.e. 5 males per box). Selections are carried out primarily by negative selection by health and exterior, as well as by live weight of each bird.

4.2 Housing system

Animals were kept in windowless house with full control of the environment. There were used automated heating and ventilation.

Manually filled tube feeders and nipple automatic drinkers were used.

4.3 Conditions of the environment

Temperature

Age	House (°C)
155 – 434 days	18

Stocking density

Age	♀ and ♂
155 – 434 days	4.2

4.4 Lighting programme

Age	Light from - to	Hours of light
Week 22 (Day 148 – 154)	7 ⁰⁰ – 19 ⁰⁰	12
Week 23 (Day 155 – 161)	7 ⁰⁰ – 20 ⁰⁰	13
From week 24 (from day 162)	7 ⁰⁰ – 21 ⁰⁰	14

4.5 Feeding and watering

Feed was produced in xxxxx.

Day 155 – 245: NP-1 – crusher

Day 246 – 434: NP-2 – crusher

	NP – 1	NP – 2
Components (%)		
Wheat	43.73	44.57
Maize	25.00	25.00
Soybean meal	14.65	14.35
Limestone	4.39	4.95
Oat	3.60	2.00
Limestone–roughly ground	3.00	3.00
Sunflower meal	2.20	2.70
Soya oil	1.88	2.07
Monocalcium phosphate	0.37	0.27
Salt	0.26	0.27
Premix	0.92	0.82
Nutrient content (calculated values)		
Protein	150.96	150.06
Fat	40.00	41.39
Lysine	7.08	6.66
Methionine	3.77	3.52
Calcium	28.61	30.49
Phosphorus	4.28	4.07
Vitamin A (m.j./kg)	10000.00	10000.00
Vitamin D3 (m.j./kg)	3000.00	3000.00
Metabolizable energy MJ/kg	11.70	11.70

Feeding management

The flock was fed daily at 7 a.m. separately males and females. Females were using troughs with grids, males tube pan feeders hanging higher. Oats (3g/birds) was fed daily at 12 a.m. on the litter. In the afternoon he was flung out into the litter grit.

Drinking management

Nipples were used in production period. Water was available the whole day.

4.6 Veterinary precautions

The house was disinfected by 1% xxxxx liquid, then treated against red mites and finally by Virkon aerosol on litter before the placement of the flock.

During the laying has been given the vaccine xxxxx (every 6 weeks), xxxxx (24th and 42th week), xxxxx (30th and 48th week), xxxxx (36th and 54th week).

From week 32, xxxxx (every 2 weeks), xxxxx (every 6 weeks) and xxxxx were administered.

5 The growing test of progeny

5.1 Samples and their location

Four progeny fattening test of 32 days were performed for each sample, with the 3rd fattening test extended to 39 days. In the prolonged test live weight and feed consumption were observed at 32 and 39 days of age.

Carcass analysis was performed on 20 cocks and 20 hens from each genotype. Breast muscles was weighed without the skin and the thigh muscles with the bone and the skin.

720 hatching eggs were set, 560 broilers were sexed and placed always 280 females (in two pens) and 280 males (in two pens). In 3rd part fattening test there were 520 birds – 260 females (in two pens) and 260 males (in two pens).

5.2 Housing system

Chickens were kept in windowless house with full control of the environment. There were used automated heating and ventilation.

Manually filled tube feeders and nipple automatic drinkers were used.

5.3 Conditions of the environment

Stocking density

	broilers per square meter
1 st , 2 nd and 4 th part fattening test	17.2
3 rd part fattening test	16.0

5.4 Lighting programme

	Age	Hours of light	Hours of darkness
1 st , 2 nd and 4 th part fattening test	Day 1 – 7	23	1
	Day 8 – 29	18	6
	Day 30 – 32	23	1
3 rd part fattening test	Day 1 – 7	23	1
	Day 8 – 36	18	6
	Day 37 – 39	23	1

5.5 Feeding and watering

Feed was produced in xxxxx.

1 st , 2 nd and 4 th part fattening test:	Day 1 – 10	Starter (BR1)
	Day 11 – 21	Grower (BR2-A)
	Day 22 – 28	Grower (BR2-B)
	Day 29 – 32	Finisher (BR3)
3 rd part fattening test:	Day 1 – 10	Starter (BR1)
	Day 11 – 21	Grower (BR2-A)
	Day 22 – 28	Grower (BR2-B)
	Day 29 – 39	Finisher (BR3)

	Starter BR1	Grower BR2-A	Grower BR2-B	Finisher BR3
Age	Days 1 - 10	Days 11 - 21	Day 22 - 28	Day 29 - 32 (39)
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	-	-	-
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 suppl.	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

5.6 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.

6 The results

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	13d	Statistical analysis – hens at 39 days of age

Rearing period

Tab. No. 1 (page 1)

Breed	Treat. No.	Sex	Number of birds at			Average live weight at		Feed consumption per 1 bird and day		
			1 day	36 days	154 days	1 day	154 days	1-35 days	36-154 days	1-154 days
			birds	birds	birds	g	g	g	g	g
xxxxx	1	♂	75	45	28	34.40	3439.64	38.90	69.19	59.22
		♀	270	240	220	36.56	2803.09	33.57	70.92	61.63
xxxxx	2	♂	75	45	28	46.80	3521.43	37.60	74.88	62.62
		♀	270	240	220	38.22	2872.05	30.90	73.24	62.71
xxxxx	3	♂	75	45	28	34.40	3322.14	38.74	68.24	58.53
		♀	270	240	220	31.33	2784.50	32.56	71.21	61.60
xxxxx	4	♂	75	45	28	42.53	3616.79	40.50	77.82	65.54
		♀	270	240	220	38.74	2880.77	31.24	74.44	63.70
xxxxx	5	♂	75	45	28	41.20	3356.79	38.97	65.73	56.93
		♀	270	240	220	36.19	2805.36	33.46	69.81	60.77
xxxxx	6	♂	75	45	28	45.60	3399.29	40.04	78.39	65.78
		♀	270	240	220	39.33	2844.64	31.26	74.56	63.79

Rearing period

Tab. No. 1 (page 2)

Breed	Treat. No.	Sex	Number of birds at			Average live weight at		Feed consumption per 1 bird and day		
			1 day	36 days	154 days	1 day	154 days	1-35 days	36-154 days	1-154 days
			birds	birds	birds	g	g	g	g	g
xxxxx	7	♂	75	45	28	46.27	3262.86	40.50	78.17	65.78
		♀	270	240	220	39.33	2865.68	31.14	74.78	63.93
xxxxx	8	♂	75	45	28	40.00	3312.14	39.12	64.76	56.33
		♀	270	240	220	33.48	2714.91	32.50	69.96	60.65
xxxxx	9	♂	75	45	28	41.87	3447.86	40.50	79.07	66.38
		♀	270	240	220	39.44	2867.27	30.95	73.61	63.00
xxxxx	10	♂	50	45	28	34.40	3376.79	38.90	68.35	58.66
		♀	270	240	220	45.33	2850.64	33.87	70.34	61.27
xxxxx	11	♂	75	45	28	46.93	3457.50	40.27	78.54	65.95
		♀	270	240	220	38.30	2879.50	31.10	74.82	63.95
xxxxx	12	♂	75	45	28	43.73	3357.86	38.48	67.56	57.99
		♀	270	240	220	39.52	2884.73	33.49	69.78	60.76

Mortality during the rearing period

Tab. No. 2 (page 1)

Breed	Treat. No.	Sex	Mortality - days								Mortality according causes													
			1 - 14		15 - 35		36 - 154		1 - 154		1	2	3	4	5	6	7	8	9	10	11	12	13	14
			birds	%	birds	%	birds	%	birds	%														
xxxxx	1	♂	0	0.00	0	0.00	0	0.00	0	0.00														47
		♀	0	0.00	1	0.56	1	0.42	2	0.74											2			48
xxxxx	2	♂	0	0.00	0	0.00	0	0.00	0	0.00														47
		♀	0	0.00	0	0.00	2	0.83	2	0.74											2			48
xxxxx	3	♂	0	0.00	0	0.00	2	4.44	2	2.22											2			45
		♀	0	0.00	1	0.56	1	0.42	2	0.74											2			48
xxxxx	4	♂	0	0.00	0	0.00	2	4.44	2	2.22											2			45
		♀	0	0.00	1	0.56	1	0.42	2	0.74					1						1			48
xxxxx	5	♂	0	0.00	1	1.11	1	2.22	2	2.22											2			45
		♀	0	0.00	1	0.56	0	0.00	1	0.37											1			49
xxxxx	6	♂	0	0.00	1	1.11	0	0.00	1	1.11											1			46
		♀	0	0.00	4	2.22	1	0.42	5	1.85					2						3			45

- Causes:**
- | | | | | |
|------------------------|-------------------------|---------------------------------|------------------------------------|---------------------------------|
| 1 - Viral diseases | 4 - Parasitary diseases | 7 - Digestive tract diseases | 10 - Locomotion apparatus diseases | 13 - Diverticulus inflammation. |
| 2 - Bacterial diseases | 5 - Culling | 8 - Respiratory tract diseases | 11 - Sudden death syndrome | 14 - Stock reduction |
| 3 - Fungal diseases | 6 - Injuries | 9 - Reproductive tract diseases | 12 - Cannibalism | |

Mortality during the rearing period

Tab. No. 2 (page 2)

Breed	Treat. No.	Sex	Mortality - days								Mortality according causes																
			1 - 14		15 - 35		36 - 154		1 - 154		1	2	3	4	5	6	7	8	9	10	11	12	13	14			
			birds	%	birds	%	birds	%	birds	%																	
xxxxx	7	♂	0	0.00	0	0.00	0	0.00	0	0.00														47			
		♀	0	0.00	3	1.67	1	0.42	4	1.48					1								3		46		
xxxxx	8	♂	0	0.00	0	0.00	1	2.22	1	1.11														1		46	
		♀	0	0.00	1	0.56	0	0.00	1	0.37														1		49	
xxxxx	9	♂	0	0.00	0	0.00	0	0.00	0	0.00																47	
		♀	0	0.00	2	1.11	2	0.83	4	1.48					1									3		46	
xxxxx	10	♂	0	0.00	0	0.00	1	2.22	1	1.11					1											46	
		♀	0	0.00	0	0.00	0	0.00	0	0.00																50	
xxxxx	11	♂	0	0.00	0	0.00	0	0.00	0	0.00																47	
		♀	0	0.00	0	0.00	1	0.42	1	0.37															1		49
xxxxx	12	♂	0	0.00	1	1.11	1	2.22	2	2.22															2		45
		♀	0	0.00	2	1.11	2	0.83	4	1.48															4		46

- Causes:**
- | | | | | |
|------------------------|-------------------------|---------------------------------|------------------------------------|---------------------------------|
| 1 - Viral diseases | 4 - Parasitary diseases | 7 - Digestive tract diseases | 10 - Locomotion apparatus diseases | 13 - Diverticulus inflammation. |
| 2 - Bacterial diseases | 5 - Culling | 8 - Respiratory tract diseases | 11 - Sudden death syndrome | 14 - Stock reduction |
| 3 - Fungal diseases | 6 - Injuries | 9 - Reproductive tract diseases | 12 - Cannibalism | |

Statistical analysis - Cocks at 154 days of age

Tab. No. 3a

Breed	Treat. No.	Treat. size	Average live weight	Standard deviation	Coefficient of variation	Standard error of mean	Precision select. average	Standard error of coeff. of variation
			g/ks	g/ks	%	g/ks	%	%
xxxxx	1	28	3439.64	207.32	6.03	39.18	1.14	0.82
xxxxx	2	28	3521.43	167.88	4.77	31.73	0.90	0.65
xxxxx	3	28	3322.14	227.50	6.85	42.99	1.29	0.94
xxxxx	4	28	3616.79	222.69	6.16	42.09	1.16	0.84
xxxxx	5	28	3356.79	242.95	7.24	45.91	1.37	0.99
xxxxx	6	28	3399.29	217.75	6.41	41.15	1.21	0.88
xxxxx	7	28	3262.86	288.60	8.84	54.54	1.67	1.21
xxxxx	8	28	3312.14	189.70	5.73	35.85	1.08	0.78
xxxxx	9	28	3447.86	179.86	5.22	33.99	0.99	0.71
xxxxx	10	28	3376.79	271.05	8.03	51.22	1.52	1.10
xxxxx	11	28	3457.50	200.70	5.80	37.93	1.10	0.79
xxxxx	12	28	3357.86	218.08	6.49	41.21	1.23	0.89

Statistical analysis - Hens at 154 days of age

Tab. No. 3b

Breed	Treat. No.	Treat. size	Average live weight	Standard deviation	Coefficient of variation	Standard error of mean	Precision select. average	Standard error of coeff. of variation
			g/ks	g/ks	%	g/ks	%	%
xxxxxx	1	220	2803.09	241.91	8.63	16.31	0.58	0.42
xxxxxx	2	220	2872.05	224.04	7.80	15.10	0.53	0.37
xxxxxx	3	220	2784.50	249.38	8.96	16.81	0.60	0.43
xxxxxx	4	220	2880.77	267.50	9.29	18.03	0.63	0.45
xxxxxx	5	220	2805.36	238.96	8.52	16.11	0.57	0.41
xxxxxx	6	220	2844.64	248.64	8.74	16.76	0.59	0.42
xxxxxx	7	220	2865.68	296.48	10.35	19.99	0.70	0.50
xxxxxx	8	220	2714.91	231.87	8.54	15.63	0.58	0.41
xxxxxx	9	220	2867.27	242.08	8.44	16.32	0.57	0.41
xxxxxx	10	220	2850.64	260.41	9.14	17.56	0.62	0.44
xxxxxx	11	220	2879.50	233.66	8.11	15.75	0.55	0.39
xxxxxx	12	220	2884.73	278.23	9.64	18.76	0.65	0.47

Body weight - rearing

Tab. No. 4 (page 1)

Breed	Tr. No.	Sex	weeks																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
xxxxx	1	♂	130	260	450	610	770	890	1160	1230	1290	1420	1520	1580	1740	1860	1910	2080	2390	2580	2740	2730	2910	3440
		♀	122	234	333	463	577	763	837	883	960	1060	1197	1270	1337	1420	1500	1710	1817	2063	2243	2373	2490	2790
xxxxx	2	♂	161	303	470	620	870	1080	1300	1340	1470	1680	1860	1880	2090	2130	2240	2350	2670	2820	3040	3040	3130	3520
		♀	146	260	362	473	560	630	787	860	950	1060	1173	1250	1347	1460	1543	1787	1953	2103	2270	2457	2560	2867
xxxxx	3	♂	124	255	446	600	750	900	1090	1210	1310	1380	1590	1750	1810	1870	1990	2130	2300	2630	2730	2670	2920	3320
		♀	120	233	334	457	578	643	850	893	960	1067	1173	1257	1313	1410	1483	1697	1810	2020	2273	2360	2517	2777
xxxxx	4	♂	155	295	464	610	830	1030	1220	1340	1450	1580	1750	1870	1970	2120	2220	2280	2640	2750	3020	3070	3170	3620
		♀	145	260	365	453	557	620	783	860	937	1063	1150	1270	1343	1443	1537	1783	1893	2073	2340	2430	2600	2867
xxxxx	5	♂	135	264	441	610	790	980	1140	1250	1330	1410	1590	1690	1840	1950	2080	2150	2380	2610	2690	2650	3040	3360
		♀	123	247	329	460	587	643	850	883	973	1073	1163	1260	1337	1410	1550	1717	1830	2030	2243	2433	2480	2810
xxxxx	6	♂	169	309	450	600	820	1060	1210	1300	1440	1550	1710	1820	1960	2080	2260	2320	2570	2750	2950	2980	3100	3400
		♀	150	260	358	457	563	637	773	850	960	1063	1173	1250	1337	1460	1537	1813	1923	2087	2300	2447	2590	2837

Body weight - rearing

Tab. No. 4 (page 2)

Breed	Tr. No.	Sex	weeks																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
xxxxx	7	♂	161	310	456	610	830	1090	1210	1270	1430	1600	1710	1860	1920	2080	2230	2310	2610	2800	2930	2920	3090	3260
		♀	147	261	360	453	547	627	777	850	963	1040	1170	1283	1327	1477	1523	1740	1960	2137	2313	2453	2577	2833
xxxxx	8	♂	128	261	439	570	760	910	1150	1190	1340	1400	1560	1660	1790	1850	2020	2150	2400	2590	2720	2650	2950	3310
		♀	121	230	333	437	560	643	803	867	970	1040	1150	1223	1317	1433	1503	1727	1827	2023	2243	2437	2500	2710
xxxxx	9	♂	156	303	470	610	810	1080	1200	1290	1450	1580	1690	1820	1950	2100	2190	2260	2550	2770	2920	2940	3170	3450
		♀	148	260	363	453	530	623	773	847	947	1090	1177	1243	1340	1463	1520	1793	1910	2097	2267	2427	2550	2860
xxxxx	10	♂	143	260	440	590	740	890	1110	1220	1310	1400	1500	1740	1760	1860	2020	2120	2360	2620	2720	2640	2950	3380
		♀	133	235	333	480	590	690	837	863	980	1073	1187	1253	1343	1470	1517	1713	1843	2070	2263	2433	2477	2843
xxxxx	11	♂	163	305	455	580	820	1100	1230	1280	1450	1580	1700	1860	1970	2110	2230	2330	2560	2750	2870	2890	3220	3460
		♀	149	260	362	447	523	637	783	863	967	1027	1153	1257	1347	1433	1517	1733	1923	2120	2237	2463	2590	2870
xxxxx	12	♂	158	255	463	570	750	880	1130	1250	1320	1400	1540	1740	1790	1850	2030	2160	2350	2620	2660	2660	2950	3360
		♀	126	236	334	443	573	683	823	890	997	1103	1173	1283	1373	1437	1510	1717	1877	2077	2263	2407	2593	2873

Breed	Tr. no.	Initial flock	Fertility	Hatchability		Average number of eggs per bird-housed			Average egg weight	Nr. of chicks hatched per 1 hen	Days at percentage of laying		Average live weight at the end of laying		Feed consumption during laying per		
				set	fert.	total	hatching eggs				30%	50%	cocks	hens	bird/da	egg	chick
				%	%	number	number	%			g	days	days	g	g	g	g
XXXXXX	1	220	96.08	80.71	84.00	173.96	157.90	90.77	65.24	127.43	175	178	5455.26	4393.65	173.53	270.88	369.78
XXXXXX	2	220	98.29	84.96	86.43	197.43	180.35	91.35	63.90	153.22	166	169	4955.00	4226.81	173.72	237.52	306.05
XXXXXX	3	220	96.25	78.75	81.82	173.25	157.53	90.93	65.40	124.06	177	179	5333.68	4371.62	173.21	270.45	377.69
XXXXXX	4	220	97.46	80.88	82.98	208.68	190.15	91.12	64.15	153.78	166	169	4940.56	4254.32	174.94	230.45	312.72
XXXXXX	5	220	94.63	78.96	83.44	169.09	154.33	91.27	65.29	121.86	176	179	5382.63	4405.38	170.60	276.55	383.73
XXXXXX	6	220	98.04	81.96	83.60	182.09	168.00	92.27	65.12	137.69	173	176	4992.78	4291.60	174.26	263.20	348.05
XXXXXX	7	220	97.04	80.38	82.83	172.44	157.19	91.16	65.04	126.34	173	175	5125.56	4279.86	175.09	277.94	379.35
XXXXXX	8	220	95.38	78.58	82.39	175.67	162.64	92.58	65.57	127.81	176	179	5396.32	4339.95	171.12	266.61	366.45
XXXXXX	9	220	94.50	81.21	85.93	180.35	166.07	92.08	65.01	134.86	172	176	4946.67	4240.00	173.74	263.87	352.88
XXXXXX	10	220	96.67	77.29	79.96	173.86	159.19	91.56	67.67	123.04	177	180	5163.50	4353.04	171.93	265.81	375.62
XXXXXX	11	220	97.96	80.46	82.14	197.25	181.63	92.08	64.28	146.14	166	170	5205.26	4188.42	176.25	235.28	317.57
XXXXXX	12	220	97.25	81.38	83.68	168.55	153.28	90.94	66.61	124.73	174	178	5185.00	4372.00	171.12	270.46	365.46

Egg weight in period (period = 28 days)

Tab. No. 6

Breed	Treat. No.	Period										Cumulate
		1	2	3	4	5	6	7	8	9	10	
xxxxx	1	53.90	57.54	62.28	64.32	66.90	68.87	69.71	70.91	71.84	71.46	65.24
xxxxx	2	55.38	58.23	61.25	63.14	65.01	65.94	67.40	68.83	69.33	70.62	63.90
xxxxx	3	54.86	57.97	61.65	64.61	66.99	68.90	69.80	70.74	71.67	72.08	65.40
xxxxx	4	54.83	57.94	61.59	63.35	64.95	66.64	67.78	68.81	69.29	70.41	64.15
xxxxx	5	54.70	57.95	61.21	65.01	66.88	68.80	70.02	71.24	71.35	71.93	65.29
xxxxx	6	54.92	57.28	62.32	64.06	66.77	68.06	69.19	70.36	71.47	72.17	65.12
xxxxx	7	54.92	58.45	60.20	64.93	66.76	68.81	68.42	70.81	71.86	72.08	65.04
xxxxx	8	53.99	58.03	62.26	64.56	67.32	69.09	70.39	71.06	72.11	72.04	65.57
xxxxx	9	55.15	57.89	62.27	64.21	66.16	67.46	69.27	70.20	70.69	71.70	65.01
xxxxx	10	57.26	59.68	63.77	66.84	69.24	70.51	71.97	72.69	73.66	74.00	67.67
xxxxx	11	55.21	58.30	62.03	63.16	65.26	66.35	67.70	69.58	70.48	70.87	64.28
xxxxx	12	55.25	59.03	62.98	65.67	68.28	70.07	71.24	72.48	73.04	73.48	66.61

xxxxx

1st period: 23th – 26th week of age

10th period: 59th – 62th week of age

Mortality - hens in the laying period

Tab. No. 7

Breed	Treat. No.	Initial flock	Final flock	Mortality in the laying period		Mortality according causes													
		birds	birds	birds	%	1	2	3	4	5	6	7	8	9	10	11	12	13	14
xxxxx	1	220	202	18	8.18									1	6	11			
xxxxx	2	220	204	16	7.27									3	5	7			1
xxxxx	3	220	204	16	7.27									1	7	8			
xxxxx	4	220	213	7	3.18											6			1
xxxxx	5	220	208	12	5.45									1	6	4			1
xxxxx	6	220	213	7	3.18											7			
xxxxx	7	220	212	8	3.64										4	4			
xxxxx	8	220	211	9	4.09										5	4			
xxxxx	9	220	210	10	4.55									2	3	4			1
xxxxx	10	220	204	16	7.27										8	7			1
xxxxx	11	220	202	18	8.18									3	9	6			
xxxxx	12	220	201	19	8.64										4	15			

Diagnostic: 1 - Viral diseases 4 - Parasitary diseases 7 - Digestive tract diseases 10 - Locomotion apparatus diseases 13 - Diverticulus inflammation
 2 - Bacterial diseases 5 - Tumors 8 - Respiratory tract diseases 11 - Sudden death syndrome 14 - culling and other causes
 3 - Fungal diseases 6 - Injuries 9 - Reproductive tract diseases 12 - Cannibalism

Statistical analysis - Cocks at 434 days of age

Tab. No. 8a

Breed	Treat. No.	Treatment size	Average live weight	Standard deviation	Coefficient of variation	Standard error of mean	Precision select. average	Standard error of coeff. of variation
			g/ks	g/ks	%	g/ks	%	%
xxxxx	1	19	5455.26	627.51	11.50	143.96	2.64	1.94
xxxxx	2	18	4955.00	594.69	12.00	140.17	2.83	2.09
xxxxx	3	19	5333.68	460.57	8.64	105.66	1.98	1.45
xxxxx	4	18	4940.56	544.19	11.01	128.27	2.60	1.91
xxxxx	5	19	5382.63	823.55	15.30	188.94	3.51	2.61
xxxxx	6	18	4992.78	531.50	10.65	125.28	2.51	1.85
xxxxx	7	18	5125.56	384.76	7.51	90.69	1.77	1.29
xxxxx	8	19	5396.32	672.31	12.46	154.24	2.86	2.11
xxxxx	9	18	4946.67	497.70	10.06	117.31	2.37	1.74
xxxxx	10	20	5163.50	601.03	11.64	134.39	2.60	1.91
xxxxx	11	19	5205.26	554.81	10.66	127.28	2.45	1.80
xxxxx	12	18	5185.00	631.43	12.18	148.83	2.87	2.12

Statistical analysis - Hens at 434 days of age

Tab. No. 8b

Breed	Treat. No.	Treatment size	Average live weight	Standard deviation	Coefficient of variation	Standard error of mean	Precision select. average	Standard error of coeff. of variation
			g/ks	g/ks	%	g/ks	%	%
xxxxx	1	202	4393.42	580.72	13.22	40.86	0.93	0.67
xxxxx	2	204	4226.81	558.41	13.21	39.10	0.92	0.67
xxxxx	3	204	4371.62	540.39	12.36	37.83	0.87	0.62
xxxxx	4	213	4254.32	459.47	10.80	31.48	0.74	0.53
xxxxx	5	208	4405.38	445.80	10.12	30.91	0.70	0.50
xxxxx	6	213	4291.60	521.42	12.15	35.73	0.83	0.60
xxxxx	7	212	4279.86	457.44	10.69	31.42	0.73	0.53
xxxxx	8	211	4339.95	469.38	10.82	32.31	0.74	0.53
xxxxx	9	210	4240.00	525.86	12.40	36.29	0.86	0.62
xxxxx	10	204	4353.04	539.71	12.40	37.79	0.87	0.62
xxxxx	11	202	4188.42	485.74	11.60	34.18	0.82	0.59
xxxxx	12	201	4372.34	440.53	10.08	31.07	0.71	0.51

Hatchability

Tab. No. 9

Breed	Treat. No.	Fertility	Hatchability		Birds housed	Average weight		
			Set	Fert.		hatch. eggs	1-day	
		%	%	%			♂	♀
		g	g	g				
xxxxx	1	94.94	79.58	83.82	2200	67.57	44.65	44.91
xxxxx	2	97.82	83.67	85.53	2200	65.65	44.73	45.19
xxxxx	3	96.06	79.33	82.59	2200	67.39	44.66	44.45
xxxxx	4	94.58	78.00	82.47	2200	65.27	45.07	44.56
xxxxx	5	92.70	76.97	83.03	2200	67.42	44.96	44.26
xxxxx	6	95.85	79.06	82.48	2200	67.23	45.81	45.87
xxxxx	7	95.64	78.18	81.75	2200	67.60	45.95	45.82
xxxxx	8	94.21	78.12	82.92	2200	67.86	44.95	44.56
xxxxx	9	91.73	76.67	83.58	2200	67.04	45.06	44.46
xxxxx	10	95.88	77.76	81.10	2200	69.59	46.25	46.10
xxxxx	11	96.06	78.09	81.29	2200	66.17	44.93	44.69
xxxxx	12	95.91	79.76	83.16	2200	68.88	45.95	45.78

Broiler results at the age of 14 days

Tab. No. 10a

Breed	Treat. No.	Average live weight at 14 days								
		male			female			average		
		birds	live weight.	FCR	birds	live weight	FCR	birds	live weight	FCR
			g	g		g	g		g	
xxxxx	1	1073	514.13	1091.62	1052	496.08	1115.30	2125	505.19	1103.13
xxxxx	2	1079	519.08	1090.54	1083	504.08	1091.73	2162	511.57	1091.13
xxxxx	3	1078	516.58	1087.85	1073	505.42	1083.32	2151	511.01	1085.62
xxxxx	4	1083	523.75	1063.08	1073	518.92	1085.13	2156	521.34	1074.00
xxxxx	5	1080	523.96	1085.05	1049	508.54	1087.99	2129	516.36	1086.47
xxxxx	6	1077	525.21	1092.20	1071	508.13	1100.14	2148	516.69	1096.09
xxxxx	7	1089	539.17	1073.49	1083	513.54	1081.69	2172	526.39	1077.48
xxxxx	8	1073	514.00	1126.52	1060	508.96	1105.66	2133	511.49	1116.21
xxxxx	9	1085	531.88	1073.67	1070	515.21	1066.26	2155	523.60	1070.05
xxxxx	10	1071	517.29	1112.24	1075	506.83	1113.71	2146	512.05	1112.97
xxxxx	11	1091	527.46	1070.28	1082	513.96	1051.96	2173	520.74	1061.28
xxxxx	12	1080	522.50	1116.78	1070	513.67	1120.40	2150	518.10	1118.57

Broiler results at the age of 32 days

Tab. No. 10b

Breed	Treat. No.	Average live weight at 32 days								
		male			female			average		
		birds	live weight	FCR	birds	live weight	FCR	birds	live weight	FCR
			g	g		g	g		g	
xxxxx	1	1043	2221.98	1441.33	1034	2008.16	1493.25	2077	2115.53	1465.86
xxxxx	2	1059	2162.99	1447.30	1079	1914.58	1463.72	2138	2037.62	1455.09
xxxxx	3	1058	2199.69	1430.52	1064	2016.89	1442.80	2122	2108.03	1436.41
xxxxx	4	1062	2212.01	1452.57	1062	1988.44	1444.94	2124	2100.22	1448.96
xxxxx	5	1061	2207.62	1444.23	1028	2066.54	1411.83	2089	2138.20	1428.82
xxxxx	6	1054	2215.52	1450.57	1060	1942.00	1491.07	2114	2078.37	1469.54
xxxxx	7	1067	2236.25	1434.70	1078	1945.93	1450.53	2145	2090.34	1442.11
xxxxx	8	1054	2245.04	1417.89	1046	2061.99	1451.05	2100	2153.86	1433.70
xxxxx	9	1062	2318.19	1423.00	1068	2057.09	1430.06	2130	2187.27	1426.33
xxxxx	10	1044	2243.25	1440.77	1067	1998.18	1466.61	2111	2119.38	1453.08
xxxxx	11	1069	2102.27	1481.98	1074	1907.98	1455.52	2143	2004.90	1469.36
xxxxx	12	1056	2277.34	1429.35	1050	2091.41	1476.74	2106	2184.64	1451.97

Broiler results at the age of 39 days

Tab. No. 10c

Breed	Treat. No.	Average live weight at 39 days								
		male			female			average		
		birds	live weight	FCR	birds	live weight	FCR	birds	live weight	FCR
			g	g		g	g		g	
xxxxx	1	117	3133.93	1576.35	124	2712.18	1597.63	241	2916.93	1586.53
xxxxx	2	127	3162.36	1516.36	129	2599.77	1579.45	256	2878.87	1545.07
xxxxx	3	122	3053.77	1558.68	127	2759.92	1589.97	249	2903.90	1573.84
xxxxx	4	124	3337.58	1508.72	128	2868.52	1554.32	252	3099.33	1530.16
xxxxx	5	128	3085.31	1488.66	117	2756.67	1593.34	245	2928.37	1535.72
xxxxx	6	123	3107.24	1557.08	122	2769.67	1642.50	245	2939.14	1597.16
xxxxx	7	119	3124.71	1603.92	128	2750.39	1577.90	247	2930.73	1591.26
xxxxx	8	125	3220.24	1527.59	123	2801.54	1582.75	248	3012.58	1553.03
xxxxx	9	121	3158.35	1620.26	126	2755.00	1581.54	247	2952.59	1601.83
xxxxx	10	122	3085.00	1573.98	129	2672.87	1594.26	251	2873.19	1583.68
xxxxx	11	127	3099.37	1528.12	129	2585.74	1582.32	256	2840.55	1552.99
xxxxx	12	124	3278.95	1538.40	125	2832.64	1582.98	249	3054.90	1559.15

Mortality during growing period at the age of 32 days

Tab. No. 11a

Breed	Treat. No.	Mortality in the period						Mortality according causes													
		1 - 14		15 - 32		1 - 32		1	2	3	4	5	6	7	8	9	10	11	12	13	14
		birds	%	birds	g	birds	%														
xxxxx	1	75	3.41	48	2.18	123	5.59										2	64			57
xxxxx	2	38	1.73	24	1.09	62	2.82											46		2	14
xxxxx	3	49	2.23	29	1.32	78	3.55										1	40		6	31
xxxxx	4	44	2.00	32	1.45	76	3.45										4	44		2	26
xxxxx	5	71	3.23	40	1.82	111	5.05										1	44		3	63
xxxxx	6	52	2.36	34	1.55	86	3.91										4	54			28
xxxxx	7	28	1.27	27	1.23	55	2.50											45			10
xxxxx	8	67	3.05	33	1.50	100	4.55										2	41		1	56
xxxxx	9	45	2.05	25	1.14	70	3.18										3	42		1	24
xxxxx	10	54	2.45	35	1.59	89	4.05										1	49		3	36
xxxxx	11	27	1.23	30	1.36	57	2.59											35		6	16
xxxxx	12	50	2.27	44	2.00	94	4.27										3	54		2	35

- 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 | |

Mortality during growing period at the age of 39 days

Tab. No. 11b

Breed	Treat. No.	Mortality in the period						Mortality according causes													
		1 - 14		15 - 39		1 - 39		1	2	3	4	5	6	7	8	9	10	11	12	13	14
		birds	%	birds	%	birds	%														
xxxxx	1	16	1.48	15	1.39	31	2.87											15			16
xxxxx	2	3	0.28	4	0.37	7	0.65											7			
xxxxx	3	1	0.09	14	1.30	15	1.39											15			
xxxxx	4	4	0.37	12	1.11	16	1.48											13			3
xxxxx	5	15	1.39	7	0.65	22	2.04											7			15
xxxxx	6	15	1.39	13	1.20	28	2.59										1	15			12
xxxxx	7	2	0.19	14	1.30	16	1.48											14			2
xxxxx	8	13	1.20	12	1.11	25	2.31										1	9			15
xxxxx	9	11	1.02	10	0.93	21	1.94										1	14			6
xxxxx	10	4	0.37	9	0.83	13	1.20											11			2
xxxxx	11	2	0.19	7	0.65	9	0.83											8			1
xxxxx	12	6	0.56	10	0.93	16	1.48											11			5

- Causes:**
- 1 – Viral diseases
 - 2 – Bacterial diseases
 - 3 – Moulds diseases
 - 4 – Parasitary diseases
 - 5 – Tumors
 - 6 – Wounds
 - 7 – Digestive track diseases
 - 8 – Respiratory tract diseases
 - 9 – Reproduction tract diseases
 - 10 – Locomotion apparatus diseases
 - 11 – Sudden death syndrome
 - 12 – Cannibalism
 - 13 – Yolk sac. infam.
 - 14 – Culling and other causes

Results of carcass analysis in 32 days

Tab. No. 12a (page 1)

Breed	Treat. No.	Sex	Weight				Ratio of abd. fat to live weight	Breast meat without skin			Thigh meat with bone			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	%	%	%
xxxxxx	1	♂	2244	1540	138	32	1.42	502	22.35	32.57	465	20.72	30.20	967	43.07	62.78	68.62	74.75
		♀	2077	1418	124	29	1.38	477	22.95	33.62	417	20.09	29.43	894	43.05	63.06	68.27	74.23
		♂	2161	1479	131	30	1.40	489	22.64	33.08	441	20.42	29.83	930	43.06	62.91	68.45	74.50
xxxxxx	2	♂	2126	1450	131	24	1.13	496	23.31	34.19	437	20.55	30.14	933	43.86	64.33	68.18	74.32
		♀	1945	1306	117	23	1.18	437	22.47	33.44	390	20.08	29.88	827	42.54	63.33	67.18	73.21
		♂	2035	1378	124	24	1.16	466	22.91	33.83	414	20.32	30.02	880	43.23	63.85	67.70	73.79
xxxxxx	3	♂	2201	1496	139	29	1.33	469	21.32	31.36	466	21.16	31.12	935	42.47	62.47	67.98	74.28
		♀	2038	1365	125	31	1.53	439	21.55	32.17	413	20.26	30.24	852	41.80	62.42	66.98	73.12
		♂	2120	1431	132	30	1.43	454	21.43	31.74	439	20.72	30.70	893	42.15	62.45	67.50	73.72
xxxxxx	4	♂	2169	1500	133	26	1.22	499	22.99	33.24	460	21.20	30.65	958	44.19	63.88	69.17	75.31
		♀	1997	1383	119	25	1.24	466	23.31	33.66	414	20.73	29.92	879	44.04	63.59	69.26	75.20
		♂	2083	1442	126	26	1.23	482	23.14	33.44	437	20.97	30.30	919	44.12	63.74	69.21	75.26
xxxxxx	5	♂	2174	1488	133	30	1.39	486	22.37	32.68	452	20.78	30.35	938	43.14	63.03	68.44	74.56
		♀	2021	1394	123	29	1.45	462	22.86	33.14	414	20.47	29.67	876	43.34	62.81	69.00	75.10
		♂	2097	1441	128	30	1.42	474	22.60	32.90	433	20.63	30.02	907	43.23	62.92	68.71	74.82
xxxxxx	6	♂	2167	1504	132	24	1.12	506	23.36	33.67	455	21.01	30.28	962	44.37	63.95	69.38	75.47
		♀	1925	1333	117	24	1.24	458	23.76	34.32	395	20.51	29.63	853	44.28	63.95	69.24	75.33
		♂	2046	1418	125	24	1.18	482	23.55	33.97	425	20.78	29.97	907	44.33	63.95	69.31	75.40

Results of carcass analysis in 32 days

Tab. No. 12a (page 2)

Breed	Treat. No.	Sex	Weight				Ratio of abd. fat to live weight	Breast meat without skin			Thigh meat with bone			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	%	%	%
xxxxxx	7	♂	2213	1522	132	25	1.11	512	23.12	33.64	462	20.89	30.39	974	44.02	64.02	68.75	74.71
		♀	1921	1338	120	24	1.23	454	23.64	33.94	394	20.52	29.47	848	44.16	63.41	69.63	75.89
		♂	2067	1430	126	24	1.17	483	23.36	33.78	428	20.72	29.96	911	44.08	63.74	69.16	75.26
xxxxxx	8	♂	2216	1527	139	31	1.40	489	22.04	32.00	461	20.79	30.17	949	42.83	62.17	68.89	75.16
		♀	2028	1418	127	30	1.48	474	23.38	33.44	418	20.61	29.48	892	43.99	62.92	69.91	76.15
		♂	2122	1472	133	30	1.44	481	22.68	32.69	439	20.70	29.84	921	43.38	62.53	69.38	75.63
xxxxxx	9	♂	2304	1607	138	30	1.32	536	23.29	33.38	486	21.11	30.25	1023	44.39	63.63	69.77	75.77
		♀	2070	1458	122	28	1.35	499	24.08	34.19	438	21.16	30.04	936	45.24	64.23	70.43	76.32
		♂	2187	1533	130	29	1.33	518	23.66	33.77	462	21.13	30.15	980	44.79	63.92	70.08	76.03
xxxxxx	10	♂	2226	1531	139	34	1.53	499	22.44	32.61	470	21.13	30.71	970	43.56	63.32	68.80	75.04
		♀	1981	1367	125	31	1.57	445	22.48	32.57	410	20.67	29.96	855	43.15	62.53	69.01	75.30
		♂	2103	1449	132	33	1.55	472	22.46	32.59	440	20.91	30.35	912	43.37	62.94	68.90	75.17
xxxxxx	11	♂	2118	1462	131	24	1.12	474	22.36	32.38	447	21.10	30.55	920	43.45	62.93	69.05	75.25
		♀	1957	1327	119	22	1.11	447	22.83	33.67	396	20.25	29.86	843	43.07	63.53	67.80	73.89
		♂	2037	1395	125	23	1.11	460	22.58	32.99	422	20.69	30.22	882	43.27	63.22	68.45	74.59
xxxxxx	12	♂	2272	1572	137	34	1.51	503	22.12	31.96	477	20.98	30.31	979	43.10	62.27	69.21	75.26
		♀	2119	1460	128	34	1.62	476	22.48	32.62	435	20.51	29.76	911	43.00	62.38	68.93	74.96
		♂	2195	1516	133	34	1.56	489	22.29	32.28	456	20.76	30.05	945	43.05	62.32	69.08	75.11

Results of carcass analysis in 39 days

Tab. No. 12b (page 1)

Breed	Treat. No.	Sex	Weight				Ratio of abd. fat to live weight	Breast meat without skin			Thigh meat with bone			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	%	%	%
xxxxxx	1	♂	3103	2203	180	39	1.26	765	24.66	34.72	649	20.93	29.47	1414	45.58	64.19	71.01	76.81
		♀	2754	1990	171	47	1.72	700	25.40	35.16	597	21.68	30.01	1297	47.08	65.17	72.24	78.44
		♂	2928	2096	175	43	1.48	732	25.01	34.93	623	21.28	29.72	1355	46.29	64.66	71.59	77.58
xxxxxx	2	♂	3238	2303	168	34	1.05	790	24.41	34.32	702	21.69	30.49	1493	46.10	64.81	71.14	76.32
		♀	2779	1963	163	36	1.28	687	24.73	35.02	592	21.30	30.16	1279	46.03	65.17	70.63	76.49
		♂	3008	2133	165	35	1.16	739	24.56	34.64	647	21.51	30.34	1386	46.07	64.97	70.90	76.40
xxxxxx	3	♂	3216	2247	188	45	1.39	751	23.36	33.44	702	21.83	31.25	1454	45.20	64.69	69.87	75.72
		♀	2743	1946	173	47	1.72	633	23.09	32.54	597	21.77	30.68	1230	44.86	63.22	70.96	77.27
		♂	2979	2097	181	46	1.54	692	23.24	33.02	650	21.80	30.98	1342	45.04	64.01	70.37	76.43
xxxxxx	4	♂	3431	2440	183	41	1.21	836	24.37	34.27	750	21.87	30.75	1586	46.24	65.02	71.12	76.45
		♀	2925	2103	162	41	1.41	735	25.15	34.97	645	22.04	30.65	1380	47.19	65.62	71.91	77.45
		♂	3178	2272	172	41	1.30	786	24.73	34.59	697	21.95	30.70	1483	46.67	65.30	71.48	76.91
xxxxxx	5	♂	3488	2441	190	41	1.18	838	24.04	34.35	713	20.43	29.19	1551	44.47	63.54	69.99	75.44
		♀	2719	1957	163	35	1.28	684	25.17	34.98	567	20.84	28.97	1251	46.01	63.95	71.95	77.96
		♂	3103	2199	177	38	1.22	761	24.54	34.63	640	20.61	29.09	1401	45.15	63.72	70.85	76.54
xxxxxx	6	♂	3130	2219	173	37	1.18	800	25.55	36.04	661	21.13	29.80	1461	46.68	65.84	70.91	76.44
		♀	2747	1982	161	36	1.30	696	25.34	35.12	590	21.47	29.76	1286	46.81	64.87	72.16	78.04
		♂	2938	2101	167	36	1.24	748	25.45	35.60	626	21.29	29.78	1373	46.75	65.38	71.49	77.19

Results of carcass analysis in 39 days

Tab. No. 12b (page 2)

Breed	Treat. No.	Sex	Weight				Ratio of abd. fat to live weight	Breast meat without skin			Thigh meat with bone			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	7	♂	2947	2103	174	33	1.11	741	25.15	35.24	634	21.51	30.14	1375	46.66	65.38	71.37	77.29
		♀	2721	1981	155	36	1.32	697	25.60	35.18	599	22.00	30.22	1295	47.60	65.40	72.79	78.48
		♂	2834	2042	165	34	1.21	719	25.37	35.21	616	21.74	30.18	1335	47.11	65.39	72.05	77.86
xxxxx	8	♂	3207	2306	177	39	1.22	773	24.10	33.52	705	21.98	30.57	1478	46.08	64.09	71.91	77.41
		♀	2652	1895	154	49	1.83	651	24.55	34.35	552	20.82	29.13	1203	45.37	63.48	71.47	77.28
		♂	2929	2101	165	44	1.50	712	24.30	33.89	628	21.46	29.92	1340	45.76	63.81	71.71	77.35
xxxxx	9	♂	3295	2293	183	39	1.17	794	24.11	34.63	712	21.62	31.06	1506	45.73	65.70	69.60	75.16
		♀	2858	2081	161	41	1.43	726	25.38	34.87	631	22.08	30.34	1357	47.47	65.21	72.80	78.44
		♂	3076	2187	172	40	1.29	760	24.70	34.75	672	21.84	30.72	1432	46.54	65.46	71.08	76.69
xxxxx	10	♂	2960	2115	181	38	1.29	682	23.05	32.25	656	22.17	31.02	1338	45.23	63.27	71.48	77.59
		♀	2643	1863	159	40	1.51	603	22.83	32.40	573	21.70	30.79	1177	44.53	63.18	70.47	76.47
		♂	2801	1989	170	39	1.39	643	22.95	32.32	615	21.95	30.91	1258	44.90	63.23	71.00	77.06
xxxxx	11	♂	3014	2143	171	34	1.11	741	24.58	34.57	640	21.23	29.86	1381	45.82	64.43	71.11	76.80
		♀	2703	1943	158	35	1.30	665	24.59	34.22	589	21.80	30.33	1254	46.39	64.56	71.86	77.71
		♂	2858	2043	165	34	1.20	703	24.59	34.40	615	21.50	30.08	1317	46.09	64.49	71.47	77.23
xxxxx	12	♂	3357	2378	186	39	1.15	807	24.02	33.92	719	21.41	30.23	1525	45.43	64.15	70.82	76.36
		♀	2750	1975	156	45	1.63	665	24.20	33.70	588	21.37	29.75	1253	45.57	63.45	71.81	77.50
		♂	3053	2176	171	42	1.37	736	24.10	33.82	653	21.39	30.01	1389	45.49	63.84	71.27	76.88

Statistical analysis - Cocks on the age of 32 days

Tab. No. 13a

Breed	Treat. No.	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	%	%
xxxxx	1	1043	2221.98	331.85	14.93	10.28	0.46	0.33
xxxxx	2	1059	2162.99	309.43	14.31	9.51	0.44	0.32
xxxxx	3	1058	2199.69	284.73	12.94	8.75	0.40	0.29
xxxxx	4	1062	2212.01	278.48	12.59	8.55	0.39	0.28
xxxxx	5	1061	2207.62	310.03	14.04	9.52	0.43	0.31
xxxxx	6	1054	2215.52	305.81	13.80	9.42	0.43	0.31
xxxxx	7	1067	2236.25	289.46	12.94	8.86	0.40	0.28
xxxxx	8	1054	2245.04	325.00	14.48	10.01	0.45	0.32
xxxxx	9	1062	2318.19	311.40	13.43	9.56	0.41	0.30
xxxxx	10	1044	2243.25	297.71	13.27	9.21	0.41	0.30
xxxxx	11	1069	2102.27	319.72	15.21	9.78	0.47	0.34
xxxxx	12	1056	2277.34	322.20	14.15	9.92	0.44	0.31

Statistical analysis - Hens on the age of 32 days

Tab. No. 13b

Breed	Treat. No.	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	%	%
xxxxx	1	1034	2008.16	292.46	14.56	9.10	0.45	0.33
xxxxx	2	1079	1914.58	282.88	14.78	8.61	0.45	0.33
xxxxx	3	1064	2016.89	300.72	14.91	9.22	0.46	0.33
xxxxx	4	1062	1988.44	288.83	14.53	8.86	0.45	0.32
xxxxx	5	1028	2066.54	292.63	14.16	9.13	0.44	0.32
xxxxx	6	1060	1942.00	270.27	13.92	8.30	0.43	0.31
xxxxx	7	1078	1945.93	254.32	13.07	7.75	0.40	0.29
xxxxx	8	1046	2061.99	274.60	13.32	8.49	0.41	0.30
xxxxx	9	1068	2057.09	274.04	13.32	8.39	0.41	0.29
xxxxx	10	1067	1998.18	279.85	14.01	8.57	0.43	0.31
xxxxx	11	1074	1907.98	287.51	15.07	8.77	0.46	0.33
xxxxx	12	1050	2091.41	306.50	14.65	9.46	0.45	0.33

Statistical analysis - Cocks on the age of 39 days

Tab. No. 13c

Breed	Treat. No.	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	%	%
xxxxx	1	117	3133.93	352.53	11.25	32.59	1.04	0.75
xxxxx	2	127	3162.36	265.03	8.38	23.52	0.74	0.53
xxxxx	3	122	3053.77	331.23	10.85	29.99	0.98	0.71
xxxxx	4	124	3337.58	287.68	8.62	25.83	0.77	0.55
xxxxx	5	128	3085.31	402.45	13.04	35.57	1.15	0.83
xxxxx	6	123	3107.24	385.05	12.39	34.72	1.12	0.81
xxxxx	7	119	3124.71	288.43	9.23	26.44	0.85	0.61
xxxxx	8	125	3220.24	351.40	10.91	31.43	0.98	0.70
xxxxx	9	121	3158.35	404.22	12.80	36.75	1.16	0.84
xxxxx	10	122	3085.00	269.84	8.75	24.43	0.79	0.57
xxxxx	11	127	3099.37	274.28	8.85	24.34	0.79	0.56
xxxxx	12	124	3278.95	273.66	8.35	24.58	0.75	0.54

Statistical analysis - Hens on the age of 39 days

Tab. No. 13d

Breed	Treat. No.	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	%	%
xxxxx	1	124	2712.18	334.45	12.33	30.03	1.11	0.80
xxxxx	2	129	2599.77	225.87	8.69	19.89	0.76	0.55
xxxxx	3	127	2759.92	255.91	9.27	22.71	0.82	0.59
xxxxx	4	128	2868.52	279.20	9.73	24.68	0.86	0.62
xxxxx	5	117	2756.67	326.90	11.86	30.22	1.10	0.79
xxxxx	6	122	2769.67	195.93	7.07	17.74	0.64	0.46
xxxxx	7	128	2750.39	220.66	8.02	19.50	0.71	0.51
xxxxx	8	123	2801.54	273.98	9.78	24.70	0.88	0.63
xxxxx	9	126	2755.00	307.10	11.15	27.36	0.99	0.71
xxxxx	10	129	2672.87	199.63	7.47	17.58	0.66	0.47
xxxxx	11	129	2585.74	239.72	9.27	21.11	0.82	0.58
xxxxx	12	125	2832.64	210.17	7.42	18.80	0.66	0.47