



MEZINÁRODNÍ TESTOVÁNÍ DRŮBEŽE ÚSTRAŠICE

státní podnik

390 02 Tábor 2

Česká republika

BROILER FEEDING TEST No. 13/2020

Effect of feed additives to performance of broilers

XXXXXXXXXXXXXX

3 December 2020 – 7 January 2021

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Basic tests information

The basic dates

Beginning of the test: 10 November 2020 (setting in the incubator)
2 December 2020 (transfer to the chicken house)
End of the test: 7 January 2021

Material and methods

Material

In total there were 1680 day old chicks of xxxxxxxxxxxx. Day old chicks were randomly distributed into 4 dietary treatments.

Experimental treatments

| Treat. No. | Treat. | Description | No. of pen | Birds per pen | No. of chick |
|------------|--------|---------------|------------|---------------|--------------|
| 1 | T1 | xxxxxxxxxxxxx | 6 | 70 | 420 |
| 2 | T2 | xxxxxxxxxxxxx | 6 | 70 | 420 |
| 3 | T3 | xxxxxxxxxxxxx | 6 | 70 | 420 |
| 4 | T4 | xxxxxxxxxxxxx | 6 | 70 | 420 |

Origin of hatching eggs: Mezinárodní testování drůbeže s.p., Ústrašice, age of the breeding flock was 31 weeks.

Housing system

Chickens were kept in the windowless chicken house with full climatic control, on deep litter. Drinking water was supplied ad libitum by nipple drinkers. Each pen was equipped with manually filled tube feeders. Bedding material was wood shaving.

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 – 36 23 hours of light + 1 hour of darkness

Stocking density

15,8 broilers per square meter.

Feed

Feed was produced in Mezinárodní testování drůbeže s.p., Ústrašice.

Day 1 – 14 Starter (BR1)

Day 15 – 28 Grower (BR2)

Day 29 – 36 Finisher (BR3)

Diet formulas

| Components (%) | Starter BR1 | Grower BR2 | Finisher BR3 |
|---------------------------------|-------------|------------|--------------|
| Soybean meal | 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 |
| Limestone | 1.49 | 1.35 | 1.12 |
| MCP | 1.14 | 1.10 | 1.20 |
| Salt | 0.29 | 0.30 | 0.29 |
| Na ₂ CO ₃ | 0.12 | 0.15 | 0.15 |
| L-lysine HCl | 0.40 | 0.39 | 0.39 |
| L-threonine | 0.20 | 0.20 | 0.20 |
| DL-methionine | 0.10 | 0.10 | 0.10 |
| Premix AMVBR1 Plus | 0.50 | - | - |
| Premix AMVBR2 Plus | - | 0.50 | - |
| Premix AMVBR3 Plus | - | - | 0.50 |
| Nutrient content | | | |
| Crude protein (g/kg) | 230.00 | 215.00 | 195.00 |
| ME (MJ/kg) | 12.22 | 12.51 | 12.61 |
| Lysine (g/kg) | 14.01 | 12.97 | 11.64 |
| Methionine (g/kg) | 6.25 | 5.68 | 5.17 |
| Met.+Cys. (g/kg) | 9.49 | 8.81 | 8.17 |
| Ca (g/kg) | 9.60 | 8.83 | 7.90 |
| P (g/kg) | 4.40 | 4.24 | 4.33 |
| Na (g/kg) | 1.51 | 1.63 | 1.60 |

Veterinary precautions

The chicken house was disinfected by xxxxxxxxxxxx before the chick placement. On days 1 and 13 chickens were vaccinated with xxxxxxxxxxxx.

Parameters recorded

Live weight

Live weight was measured on days 1 (all the birds in each pen were weighed altogether), 14 and 28 (all the birds were weighed individually, without fasting). On day 36 birds were weighed individually, after 12 hours of fasting.

Weight gain

Weight gain per phase and average daily weight gains were calculated for the periods 1 – 14 days, 15 – 28 days, 29 – 36 days and for the overall experiment (1 – 36 days).

Feed conversion ratio

Feed consumption and feed conversion ratio to gain ratio were calculated for the periods 1 – 14 days, 15 – 28 days, 29 – 36 days and for the overall experiment (1 – 36 days). The calculation was included weight of deaths.

Feed consumption

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

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. Mortality was recorded for the periods 1 – 14 days, 15 – 28 days, 29 – 36 days and 1 – 36 days.

Carcass analysis

The carcass analysis was done in 10 birds per each pen (5 ♂ and 5 ♀) on day 36. Breast muscles was weighed without skin and thigh muscles with skin.

Statistical analyses

Performance results of live weight (on days 1, 14, 28, 36) were statistically evaluated using the ANOVA single-factor model (Scheffe test) or nonparametric method (Kruskal-Wallis test).

Results

Tab. No. **1 Hatchability**

2 Performance results:

2a Body weight

2b Weight gain

2c Feed conversion ratio per 1 kg of live weight

2d Feed consumption per 1 kg of weight gain

2e Feed consumption

3 Mortality

4 Carcass analysis

5 Statistical analysis of body weight at the age of 36 days

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

6 Statistical analyses of performance results

7 Performance results per pen:

7a Body weight

7b Weight gain

7c Feed conversion ratio per 1 kg of live weight

7d Feed consumption per 1 kg of weight gain

7e 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 | 93.20 | 85.60 | 91.70 | 420 | 59.40 | 38.59 |
| T2 | 2 | | | | 420 | | 38.74 |
| T3 | 3 | | | | 420 | | 38.81 |
| T4 | 4 | | | | 420 | | 39.05 |

Body weight per phases

Tab. No. 2a

| Treatment | Tr. No. | Day 1 | | Day 14 | | Day 28 | | Day 36 | |
|-----------|---------|-------|---------------------|--------|---------------------|--------|---------------------|--------|---------------------|
| | | Birds | Average body weight | Birds | Average body weight | Birds | Average body weight | Birds | Average body weight |
| | | | g | | g | | g | | g |
| T1 | 1 | 420 | 38.59 | 419 | 481.67 | 418 | 1687.49 | 418 | 2315.59 |
| T2 | 2 | 420 | 38.74 | 420 | 484.11 | 418 | 1729.98 | 415 | 2353.14 |
| T3 | 3 | 420 | 38.81 | 420 | 488.27 | 414 | 1663.28 | 414 | 2341.27 |
| T4 | 4 | 420 | 39.05 | 420 | 490.77 | 420 | 1687.16 | 418 | 2367.44 |

Weight gain per phases**Tab. No. 2b**

| Treatment | Tr. No. | Day 1 - 14 | | Day 15 - 28 | | Day 29 - 36 | | Day 1 - 36 | |
|------------------|----------------|-----------------------|-------------------|-----------------------|-------------------|-----------------------|-------------------|-----------------------|-------------------|
| | | 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 | 443.08 | 31.65 | 1205.82 | 86.13 | 628.10 | 78.51 | 2277.01 | 63.25 |
| T2 | 2 | 445.37 | 31.81 | 1245.87 | 88.99 | 623.16 | 77.90 | 2314.40 | 64.29 |
| T3 | 3 | 449.46 | 32.10 | 1175.01 | 83.93 | 678.00 | 84.75 | 2302.46 | 63.96 |
| T4 | 4 | 451.72 | 32.27 | 1196.40 | 85.46 | 680.28 | 85.04 | 2328.40 | 64.68 |

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

Tab. No. 2c

| Treatment | Tr. No. | Feed conversion ratio | | |
|------------------|----------------|------------------------------|----------------|----------------|
| | | Day 14 | Day 28 | Day 36 |
| | | g/kg LW | g/kg LW | g/kg LW |
| T1 | 1 | 1068.90 | 1276.16 | 1500.69 |
| T2 | 2 | 1070.50 | 1275.71 | 1513.85 |
| T3 | 3 | 1058.41 | 1318.29 | 1501.08 |
| T4 | 4 | 1059.62 | 1289.94 | 1491.34 |

Feed consumption per 1 kg of weight gain (WG)**Tab. No. 2d**

| Treatment | Tr. No. | Feed consumption per 1 kg of weight gain | | | |
|------------------|----------------|---|-------------------|-------------------|------------------|
| | | 1-14 days | 15-28 days | 29-36 days | 1-36 days |
| | | g/kg WG | g/kg WG | g/kg WG | g/kg WG |
| T1 | 1 | 1162.06 | 1359.21 | 2105.03 | 1526.21 |
| T2 | 2 | 1163.61 | 1355.72 | 2180.82 | 1539.31 |
| T3 | 3 | 1149.80 | 1427.57 | 1952.22 | 1526.65 |
| T4 | 4 | 1151.21 | 1384.42 | 1990.77 | 1516.35 |

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

| Treatment | Tr. No. | Feed consumption | | | |
|------------------|----------------|----------------------------|----------------------------|------------------------------|--------------|
| | | Starter (1-14 days) | Grower (15-28 days) | Finisher (29-36 days) | Total |
| | | kg | kg | kg | kg |
| T1 | 1 | 216.10 | 685.71 | 552.67 | 1454.48 |
| T2 | 2 | 217.66 | 706.96 | 564.36 | 1488.98 |
| T3 | 3 | 217.05 | 696.22 | 547.97 | 1461.24 |
| T4 | 4 | 218.41 | 695.65 | 568.89 | 1482.95 |

Results of carcass analysis

Tab. No. 4

| Treatment | Tr. No. | Sex | Weight | | | | Ratio of abd. fat to live weight | Breast muscles without skin | | | Thigh muscles with skin | | | Total muscles | | | Carcass | |
|-----------|---------|-----|-------------|-------------|------------|-------------|---|--------------------------------|-----------------|-----------------|----------------------------|-----------------|-----------------|---------------|-----------------|-----------------|--------------|--------------|
| | | | Total | Body | Gibl. | Abd. fat | | Weight | Percentage | | Weight | Percentage | | Weight | Percentage | | Value | Yield |
| | | | | | | | | | Total weight | Body carcass | | Total weight | Body carcass | | Total weight | Body carcass | | |
| | | | g | g | g | g | | g | % | % | % | g | % | % | g | % | % | % |
| T1 | 1 | ♂ | 2551 | 1803 | 145 | 23 | 0.92 | 611 | 23.96 | 33.91 | 528 | 20.70 | 29.29 | 1139 | 44.66 | 63.20 | 70.66 | 76.33 |
| | | ♀ | 2243 | 1585 | 129 | 25 | 1.11 | 535 | 23.83 | 33.74 | 469 | 20.90 | 29.58 | 1003 | 44.73 | 63.31 | 70.65 | 76.40 |
| | | ♂ | 2397 | 1694 | 137 | 24 | 1.01 | 573 | 23.90 | 33.83 | 498 | 20.79 | 29.43 | 1071 | 44.69 | 63.26 | 70.65 | 76.37 |
| T2 | 2 | ♂ | 2507 | 1792 | 142 | 22 | 0.89 | 608 | 24.24 | 33.91 | 532 | 21.23 | 29.71 | 1140 | 45.47 | 63.62 | 71.48 | 77.16 |
| | | ♀ | 2195 | 1563 | 127 | 21 | 0.96 | 514 | 23.43 | 32.92 | 459 | 20.93 | 29.40 | 974 | 44.36 | 62.31 | 71.19 | 76.96 |
| | | ♂ | 2351 | 1677 | 134 | 22 | 0.92 | 561 | 23.86 | 33.45 | 496 | 21.09 | 29.56 | 1057 | 44.96 | 63.01 | 71.35 | 77.06 |
| T3 | 3 | ♂ | 2577 | 1847 | 149 | 25 | 0.97 | 612 | 23.74 | 33.13 | 546 | 21.19 | 29.58 | 1158 | 44.93 | 62.70 | 71.65 | 77.41 |
| | | ♀ | 2265 | 1625 | 129 | 25 | 1.12 | 540 | 23.83 | 33.22 | 483 | 21.33 | 29.74 | 1023 | 45.16 | 62.96 | 71.73 | 77.41 |
| | | ♂ | 2421 | 1736 | 139 | 25 | 1.04 | 576 | 23.78 | 33.17 | 515 | 21.26 | 29.65 | 1090 | 45.04 | 62.82 | 71.68 | 77.41 |
| T4 | 4 | ♂ | 2590 | 1813 | 149 | 23 | 0.89 | 611 | 23.58 | 33.67 | 541 | 20.90 | 29.85 | 1152 | 44.48 | 63.53 | 70.02 | 75.75 |
| | | ♀ | 2262 | 1606 | 128 | 24 | 1.07 | 536 | 23.68 | 33.35 | 481 | 21.28 | 29.97 | 1017 | 44.96 | 63.32 | 71.00 | 76.64 |
| | | ♂ | 2426 | 1709 | 138 | 24 | 0.97 | 573 | 23.63 | 33.52 | 511 | 21.08 | 29.91 | 1084 | 44.70 | 63.43 | 70.48 | 76.17 |

Statistical analysis - Body weight at 36 days of age

Tab. No. 5

| Treatment | Tr. No. | Cocks | | | | Hens | | | |
|-----------|---------|-----------------|---------------------|--------------------|--------------------------|-----------------|---------------------|--------------------|--------------------------|
| | | Number of birds | Average body weight | Standard deviation | Coefficient of variation | Number of birds | Average body weight | Standard deviation | Coefficient of variation |
| | | | g/birds | g/birds | % | | g/birds | g/birds | % |
| T1 | 1 | 184 | 2496.32 | 249.43 | 9.99 | 234 | 2173.49 | 234.87 | 10.81 |
| T2 | 2 | 196 | 2514.95 | 250.40 | 9.96 | 219 | 2208.32 | 211.32 | 9.57 |
| T3 | 3 | 186 | 2517.62 | 210.50 | 8.36 | 228 | 2197.41 | 237.50 | 10.81 |
| T4 | 4 | 187 | 2560.05 | 236.60 | 9.24 | 231 | 2211.53 | 236.23 | 10.68 |

Statistical analyses of performance results

Performance results were statistically evaluated using the ANOVA single-factor model (Scheffe 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. 6a

| Treatment | Treat. No. | No. of box | Average (g) | Standard deviation | Kruskal-Wallis test | | | |
|-----------|------------|------------|-------------|--------------------|---------------------|----------|----------|----|
| | | | | | T1 | T2 | T3 | T4 |
| T1 | 1 | 6 | 38.59 | 0.74 | | o | o | o |
| T2 | 2 | 6 | 38.74 | 0.84 | 1.000000 | | o | o |
| T3 | 3 | 6 | 38.81 | 1.27 | 1.000000 | 1.000000 | | o |
| T4 | 4 | 6 | 39.05 | 0.39 | 1.000000 | 1.000000 | 1.000000 | |

Body weight - day 14**Tab. No. 6b**

| Treatment | Treat. No. | No. of birds | Average (g) | Standard deviation | Scheffe test | | | |
|-----------|------------|--------------|-------------|--------------------|--------------|----------|----------|----|
| | | | | | T1 | T2 | T3 | T4 |
| T1 | 1 | 419 | 481.67 | 47.62 | | o | o | o |
| T2 | 2 | 420 | 484.11 | 46.42 | 0.908783 | | o | o |
| T3 | 3 | 420 | 488.27 | 48.68 | 0.262970 | 0.662487 | | o |
| T4 | 4 | 420 | 490.77 | 48.55 | 0.055733 | 0.254525 | 0.902384 | |

Body weight - day 28**Tab. No. 6c**

| Treatment | Treat. No. | No. of birds | Average (g) | Standard deviation | Kruskal-Wallis test | | | |
|-----------|------------|--------------|-------------|--------------------|---------------------|----------|----------|----|
| | | | | | T1 | T2 | T3 | T4 |
| T1 | 1 | 418 | 1687.49 | 233.55 | | o | o | o |
| T2 | 2 | 418 | 1729.98 | 247.34 | 0.306238 | | ** | o |
| T3 | 3 | 414 | 1663.28 | 191.54 | 0.467970 | 0.001181 | | o |
| T4 | 4 | 420 | 1687.16 | 198.46 | 1.000000 | 0.839683 | 0.158385 | |

Body weight - day 36**Tab. No. 6d**

| Treatment | Treat. No. | No. of birds | Average (g) | Standard deviation | Scheffe test | | | |
|-----------|------------|--------------|-------------|--------------------|--------------|----------|----------|----|
| | | | | | T1 | T2 | T3 | T4 |
| T1 | 1 | 418 | 2315.59 | 289.60 | | o | o | o |
| T2 | 2 | 415 | 2353.14 | 276.66 | 0.303417 | | o | o |
| T3 | 3 | 414 | 2341.27 | 276.19 | 0.636874 | 0.947990 | | o |
| T4 | 4 | 418 | 2367.45 | 293.00 | 0.073360 | 0.912597 | 0.622348 | |

Body weight (BW) per box

Tab. No. 7a

| Treatment | Tr. No. | Box No. | Day 1 | | Day 14 | | Day 28 | | Day 36 | |
|-----------|---------|---------|-------|-------|--------|--------|--------|---------|--------|---------|
| | | | Birds | BW | Birds | BW | Birds | BW | Birds | BW |
| | | | | g | | g | | g | | g |
| T1 | 1 | 3 | 70 | 39.14 | 69 | 480.80 | 69 | 1613.75 | 69 | 2333.81 |
| | | 5 | 70 | 38.57 | 70 | 490.90 | 70 | 1694.80 | 70 | 2344.07 |
| | | 11 | 70 | 37.23 | 70 | 475.53 | 70 | 1764.27 | 70 | 2294.39 |
| | | 15 | 70 | 39.29 | 70 | 500.33 | 69 | 1687.94 | 69 | 2374.36 |
| | | 20 | 70 | 38.86 | 70 | 449.94 | 70 | 1558.49 | 70 | 2145.37 |
| | | 24 | 70 | 38.43 | 70 | 492.51 | 70 | 1804.64 | 70 | 2402.66 |
| T2 | 2 | 4 | 70 | 39.71 | 70 | 488.54 | 69 | 1638.39 | 68 | 2389.24 |
| | | 8 | 70 | 38.43 | 70 | 470.60 | 69 | 1654.77 | 69 | 2330.94 |
| | | 12 | 70 | 37.43 | 70 | 498.50 | 70 | 1853.30 | 70 | 2358.73 |
| | | 14 | 70 | 38.86 | 70 | 486.71 | 70 | 1698.33 | 69 | 2385.39 |
| | | 17 | 70 | 38.43 | 70 | 463.51 | 70 | 1642.36 | 69 | 2274.16 |
| | | 23 | 70 | 39.57 | 70 | 496.79 | 70 | 1890.33 | 70 | 2380.43 |
| T3 | 3 | 2 | 70 | 40.14 | 70 | 495.66 | 70 | 1612.87 | 70 | 2310.66 |
| | | 7 | 70 | 38.00 | 70 | 486.66 | 69 | 1612.09 | 69 | 2314.75 |
| | | 10 | 70 | 38.00 | 70 | 485.94 | 69 | 1651.97 | 69 | 2310.29 |
| | | 13 | 70 | 37.29 | 70 | 480.06 | 68 | 1633.16 | 68 | 2458.50 |
| | | 18 | 70 | 39.00 | 70 | 487.80 | 68 | 1750.09 | 68 | 2327.25 |
| | | 22 | 70 | 40.43 | 70 | 493.49 | 70 | 1720.21 | 70 | 2328.31 |
| T4 | 4 | 1 | 70 | 39.43 | 70 | 498.94 | 70 | 1685.23 | 70 | 2414.14 |
| | | 6 | 70 | 39.14 | 70 | 494.24 | 70 | 1661.87 | 70 | 2342.26 |
| | | 9 | 70 | 38.29 | 70 | 485.30 | 70 | 1670.17 | 70 | 2343.13 |
| | | 16 | 70 | 39.14 | 70 | 484.44 | 70 | 1646.81 | 70 | 2327.07 |
| | | 19 | 70 | 39.14 | 70 | 501.33 | 70 | 1710.77 | 70 | 2415.33 |
| | | 21 | 70 | 39.14 | 70 | 480.34 | 70 | 1748.11 | 68 | 2362.60 |

Weight gain (WG) and daily weight gain (DWG) per box

Tab. No. 7b

| Treatment | Tr. No. | Box No. | Day 1 - 14 | | Day 15 - 28 | | Day 29 - 36 | | Day 1 - 36 | |
|-----------|---------|---------|------------|-------|-------------|-------|-------------|--------|------------|-------|
| | | | WG | DWG | WG | DWG | WG | DWG | WG | DWG |
| | | | g | g | g | g | g | g | g | g |
| T1 | 1 | 3 | 441.66 | 31.55 | 1132.96 | 80.93 | 720.06 | 90.01 | 2294.67 | 63.74 |
| | | 5 | 452.33 | 32.31 | 1203.90 | 85.99 | 649.27 | 81.16 | 2305.50 | 64.04 |
| | | 11 | 438.30 | 31.31 | 1288.74 | 92.05 | 530.11 | 66.26 | 2257.16 | 62.70 |
| | | 15 | 461.04 | 32.93 | 1187.61 | 84.83 | 686.42 | 85.80 | 2335.07 | 64.86 |
| | | 20 | 411.08 | 29.36 | 1108.54 | 79.18 | 586.89 | 73.36 | 2106.51 | 58.51 |
| | | 24 | 454.08 | 32.43 | 1312.13 | 93.72 | 598.01 | 74.75 | 2364.23 | 65.67 |
| T2 | 2 | 4 | 448.83 | 32.06 | 1149.85 | 82.13 | 750.84 | 93.86 | 2349.53 | 65.26 |
| | | 8 | 432.17 | 30.87 | 1184.17 | 84.58 | 676.17 | 84.52 | 2292.51 | 63.68 |
| | | 12 | 461.07 | 32.93 | 1354.80 | 96.77 | 505.43 | 63.18 | 2321.30 | 64.48 |
| | | 14 | 447.85 | 31.99 | 1211.61 | 86.54 | 687.06 | 85.88 | 2346.53 | 65.18 |
| | | 17 | 425.08 | 30.36 | 1178.84 | 84.20 | 631.80 | 78.98 | 2235.73 | 62.10 |
| | | 23 | 457.22 | 32.66 | 1393.54 | 99.54 | 490.10 | 61.26 | 2340.86 | 65.02 |
| T3 | 3 | 2 | 455.52 | 32.54 | 1117.21 | 79.80 | 697.79 | 87.22 | 2270.52 | 63.07 |
| | | 7 | 448.66 | 32.05 | 1125.43 | 80.39 | 702.67 | 87.83 | 2276.75 | 63.24 |
| | | 10 | 447.94 | 32.00 | 1166.03 | 83.29 | 658.32 | 82.29 | 2272.29 | 63.12 |
| | | 13 | 442.77 | 31.63 | 1153.10 | 82.36 | 825.34 | 103.17 | 2421.21 | 67.26 |
| | | 18 | 448.80 | 32.06 | 1262.29 | 90.16 | 577.16 | 72.15 | 2288.25 | 63.56 |
| | | 22 | 453.06 | 32.36 | 1226.73 | 87.62 | 608.10 | 76.01 | 2287.88 | 63.55 |
| T4 | 4 | 1 | 459.51 | 32.82 | 1186.29 | 84.73 | 728.91 | 91.11 | 2374.71 | 65.96 |
| | | 6 | 455.10 | 32.51 | 1167.63 | 83.40 | 680.39 | 85.05 | 2303.12 | 63.98 |
| | | 9 | 447.01 | 31.93 | 1184.87 | 84.63 | 672.96 | 84.12 | 2304.84 | 64.02 |
| | | 16 | 445.30 | 31.81 | 1162.37 | 83.03 | 680.26 | 85.03 | 2287.93 | 63.55 |
| | | 19 | 462.19 | 33.01 | 1209.44 | 86.39 | 704.56 | 88.07 | 2376.19 | 66.01 |
| | | 21 | 441.20 | 31.51 | 1267.77 | 90.56 | 614.49 | 76.81 | 2323.46 | 64.54 |

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

Tab. No. 7c

| Treatment | Tr. No. | Box No. | Feed conversion ratio | | |
|-----------|---------|---------|-----------------------|---------|---------|
| | | | Day 14 | Day 28 | Day 36 |
| | | | g/kg LW | g/kg LW | g/kg LW |
| T1 | 1 | 3 | 1003.13 | 1330.63 | 1501.46 |
| | | 5 | 1147.75 | 1295.14 | 1508.12 |
| | | 11 | 1061.68 | 1225.68 | 1513.38 |
| | | 15 | 1051.88 | 1296.59 | 1476.72 |
| | | 20 | 1114.43 | 1322.90 | 1540.26 |
| | | 24 | 1036.95 | 1200.16 | 1468.73 |
| T2 | 2 | 4 | 1024.04 | 1358.91 | 1491.49 |
| | | 8 | 1075.53 | 1330.03 | 1550.05 |
| | | 12 | 1067.20 | 1211.43 | 1515.83 |
| | | 14 | 1123.57 | 1327.69 | 1502.71 |
| | | 17 | 1097.82 | 1320.31 | 1554.20 |
| | | 23 | 1037.24 | 1134.35 | 1472.00 |
| T3 | 3 | 2 | 942.18 | 1393.61 | 1520.59 |
| | | 7 | 1067.34 | 1349.25 | 1516.83 |
| | | 10 | 1054.21 | 1324.65 | 1523.41 |
| | | 13 | 1119.81 | 1352.79 | 1436.62 |
| | | 18 | 1066.89 | 1244.61 | 1497.56 |
| | | 22 | 1102.36 | 1254.08 | 1514.58 |
| T4 | 4 | 1 | 1077.71 | 1324.62 | 1477.37 |
| | | 6 | 994.88 | 1267.93 | 1463.79 |
| | | 9 | 1077.39 | 1313.64 | 1525.07 |
| | | 16 | 1105.25 | 1319.43 | 1527.30 |
| | | 19 | 1054.06 | 1269.02 | 1475.81 |
| | | 21 | 1049.25 | 1247.47 | 1479.96 |

Feed consumption per 1 kg of weight gain (WG) per box

Tab. No. 7d

| Treatment | Tr. No. | Box No. | Feed consumption per 1 kg of weight gain | | | |
|-----------|---------|---------|--|------------|------------|-----------|
| | | | 1-14 days | 15-28 days | 29-36 days | 1-36 days |
| | | | g/kg WG | g/kg WG | g/kg WG | g/kg WG |
| T1 | 1 | 3 | 1092.41 | 1471.08 | 1885.52 | 1527.39 |
| | | 5 | 1245.61 | 1355.24 | 2064.07 | 1533.35 |
| | | 11 | 1151.86 | 1286.19 | 2470.90 | 1538.35 |
| | | 15 | 1141.52 | 1400.62 | 1923.23 | 1501.78 |
| | | 20 | 1219.77 | 1407.51 | 2117.47 | 1568.67 |
| | | 24 | 1124.71 | 1261.42 | 2279.21 | 1492.60 |
| T2 | 2 | 4 | 1114.64 | 1501.79 | 1785.42 | 1516.90 |
| | | 8 | 1171.17 | 1432.77 | 2090.19 | 1576.36 |
| | | 12 | 1153.84 | 1264.50 | 2632.00 | 1540.27 |
| | | 14 | 1221.06 | 1409.69 | 1937.92 | 1527.64 |
| | | 17 | 1197.07 | 1407.80 | 2178.76 | 1581.12 |
| | | 23 | 1127.01 | 1168.96 | 2774.36 | 1496.89 |
| T3 | 3 | 2 | 1025.21 | 1593.89 | 1814.11 | 1547.48 |
| | | 7 | 1157.74 | 1473.25 | 1902.28 | 1542.48 |
| | | 10 | 1143.64 | 1438.30 | 2026.46 | 1549.10 |
| | | 13 | 1214.12 | 1451.55 | 1605.22 | 1459.15 |
| | | 18 | 1159.60 | 1315.22 | 2271.51 | 1523.66 |
| | | 22 | 1200.74 | 1315.11 | 2251.51 | 1541.35 |
| T4 | 4 | 1 | 1170.18 | 1428.47 | 1830.51 | 1501.90 |
| | | 6 | 1080.45 | 1383.51 | 1942.18 | 1488.67 |
| | | 9 | 1169.68 | 1410.40 | 2049.80 | 1550.40 |
| | | 16 | 1202.39 | 1408.70 | 2030.53 | 1553.43 |
| | | 19 | 1143.32 | 1358.12 | 1977.94 | 1500.12 |
| | | 21 | 1142.33 | 1322.57 | 2140.52 | 1504.88 |

Feed consumption per box

Tab. No. 7e

| Treatment | Tr. No. | Box No. | Feed consumption | | | |
|-----------|---------|---------|------------------------|------------------------|--------------------------|--------|
| | | | Starter (1-14 days) | Grower (15-28 days) | Finisher (29-36 days) | Total |
| | | | kg | kg | kg | kg |
| T1 | 1 | 3 | 33.63 | 115.00 | 93.68 | 242.31 |
| | | 5 | 39.44 | 114.21 | 93.81 | 247.46 |
| | | 11 | 35.34 | 116.03 | 91.69 | 243.06 |
| | | 15 | 36.84 | 115.39 | 91.09 | 243.32 |
| | | 20 | 35.10 | 109.22 | 86.99 | 231.31 |
| | | 24 | 35.75 | 115.86 | 95.41 | 247.02 |
| T2 | 2 | 4 | 35.02 | 120.37 | 92.09 | 247.48 |
| | | 8 | 35.43 | 116.91 | 97.52 | 249.86 |
| | | 12 | 37.24 | 119.92 | 93.12 | 250.28 |
| | | 14 | 38.28 | 119.56 | 92.65 | 250.49 |
| | | 17 | 35.62 | 116.17 | 93.80 | 245.59 |
| | | 23 | 36.07 | 114.03 | 95.18 | 245.28 |
| T3 | 3 | 2 | 32.69 | 124.65 | 88.61 | 245.95 |
| | | 7 | 36.36 | 114.10 | 92.23 | 242.69 |
| | | 10 | 35.86 | 116.43 | 92.05 | 244.34 |
| | | 13 | 37.63 | 115.08 | 90.09 | 242.80 |
| | | 18 | 36.43 | 113.03 | 89.15 | 238.61 |
| | | 22 | 38.08 | 112.93 | 95.84 | 246.85 |
| T4 | 4 | 1 | 37.64 | 118.62 | 93.40 | 249.66 |
| | | 6 | 34.42 | 113.08 | 92.50 | 240.00 |
| | | 9 | 36.60 | 116.98 | 96.56 | 250.14 |
| | | 16 | 37.48 | 114.62 | 96.69 | 248.79 |
| | | 19 | 36.99 | 114.98 | 97.55 | 249.52 |
| | | 21 | 35.28 | 117.37 | 92.19 | 244.84 |