

P99 The effect of a programmed nutrition strategy on myostatin (MSTN/GDF8) mRNA levels and microRNA 27a in muscle of broiler chicks.

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Myostatin (MSTN/GDF8) is downregulated by microRNA 27a (miR-27a) and inhibits myoblast proliferation; its decreased expression is associated with increased muscling such as seen in Belgian Blue cattle. The Programmed Nutrition (PN, Alltech Inc.) strategy has been shown to increase BW gain in broilers. We evaluated the effect of the PN strategy, with and without a post-hatch conditioning diet, on miR-27a and MSTN mRNA levels in the skeletal muscle of broiler chicks. Birds were randomly assigned to one of three diets: commercial corn-soy diet with a traditional feeding strategy (control), the commercial diet until 84 h post-hatch followed by a PN diet with reduced levels of ME, minerals and vitamin E (COMM), or the commercial diet plus a PN Post-hatch conditioning supplement until 84 h post-hatch followed by the PN diet (COND). Breast muscle was sampled at d 5 and d 42 for real-time PCR analysis. On d 5 miR-27a expression and MSTN mRNA levels did not differ between diets. On d 42, miR-27a tended to be up-regulated in COMM birds (1.3-fold; $P = 0.06$) and was upregulated in COND birds (1.6-fold; $P = 0.04$), whereas MSTN mRNA was down-regulated COMM (-1.27-fold; $P = 0.05$) and COND (-1.32-fold; $P = 0.02$) compared with the control. Down-regulation of myostatin expression via miR-27a up-regulation promotes myoblast proliferation which could increase muscle mass in birds consuming the COMM and COND diets compared with birds fed using a traditional feeding strategy.

P100 Effect of temperature stimulation during last days of incubation and protein-energy concentration in feed on performance of laying-type cockerels

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The aim of the study was to make a complex investigation of the influence of a mild short term; increases in incubation temperature at the end of incubation (Day 18 up to hatching) on hatchability and secondary sex ratio, and on performance of males of laying type cockerels (Lohmann Brown-LB, Lohmann Tradition-LT) until age of slaughter. In the trial 899 eggs (LB) and 899 eggs (LT) were incubated from days 1 to 17 under normal incubation temperature (370C). From day 18 until hatching the eggs were sorted in hatch incubators with different temperature programs: 370C (control) and 10C over standard for 2 hours daily (380C: short-term warm stimulation). The one-day-old chicks were sorted by sex and male cockerels were randomly distributed in 8 treatments resulted from the two origin of chicks (LB, LT), from two hatch incubators and twofold protein/energy (200/11; 215 g crude protein/12 MJ AMEN/kg) grading in the diet. The duration of the trial was 70 days. Data from the trial were analyzed by a three-way ANOVA (SAS). The results of the incubation trial showed that a short-term warm stimulation improved the hatching results by 11%/7% in LB/LT eggs and notably number and percentage of male and female chicks was increased. The feed intake, daily weight gain and feed to gain-ratio was significantly improved from the two diets and also the cockerel's origin. Slaughter of cockerels at the age of 70 days yielded carcasses of 63–64%, breast meat of 7.3–8.3% and legs of 20.1–20.7%.



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