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## The effects of citrus peel oil supplementations on some blood parameters in broilers

S Canan Bolukbasi<sup>1</sup> and M Kuddusi Erhan<sup>2</sup>

<sup>1</sup>Ataturk University, Turkey

<sup>2</sup>Agri Ibrahim Cecen University, Turkey

The present study was conducted to determine dietary supplemental citrus peel oils (orange, lemon, bergamot) in different levels (1, 2 and 3 ml/kg) on some blood parameters in broilers. The trial consisted of 1-day-old male and female (250 male and 250 female) Ross 308 chicks. The study consisted of 10 groups in total and each group had 5 subgroups. Experimental diets were prepared by adding orange, lemon and bergamot peel oil levels (1, 2 and 3 ml/kg) to basal diet. It was observed that supplementation of citrus peel oils to their diets significantly changed HDL-cholesterol. Especially, the highest HDL-cholesterol value was obtained from broilers fed with 1 ml/kg orange peel oil. However, LDL-cholesterol value was not affected by supplementing citrus peel oils. It was found that the lowest total cholesterol level was in the groups which had 2 ml/kg of orange peel oil in the ration and the highest cholesterol level was in the groups which had 1 ml/kg of orange peel oil in the ration. Citrus peel oils except for levels of 1 ml significantly increased glucose values. The lowest glucose value was obtained from broilers fed with 1 ml/kg lemon peel oil. Highest TG concentration was in the groups added 1 ml/kg of lemon peel oil and the lowest was in the groups added 3 ml/kg of orange peel oil to the ration. In this study, it was observed that with 2 ml/kg lemon and 3 ml/kg orange additions triglycerides values decreased significantly but 1 ml/kg lemon peel addition increased the value of triglyceride. As a result, because HDL cholesterol increased and decreased TG value and LDL cholesterol (numerically), 2 ml/kg lemon peel oil and 3 ml/kg orange peel oil addition to the ration may be suggested.

canan@atauni.edu.tr

## Comparatives of two bio-stimulation protocols in relation to lifetime reproductive performance in South African Mukota sows

Dennis Onuoha Umesiobi<sup>1</sup> and M C Achilonu<sup>2</sup>

<sup>1</sup>Farm Dysell's Rust, South Africa

<sup>2</sup>Central University of Technology, South Africa

30 sows were assigned per group to each of two bio-stimulation protocols, twice daily (08:30 to 09:00 and 16:00 to 16:30) per 30 minutes duration in a four-week observation per parity over three parities. The bio-stimulation protocols involved fence-line boar exposure (FBE), in which sows were exposed to fence-line boars during estrus detection and physical boar exposure (PBE), in which sows received physical contact with the boar during estrus detection. Estrus was synchronized in sows by a single subcutaneous injection of P.G. 600<sup>®</sup> (400 IU PMSG with 200 IU HCG/5 mL dose/animal). Sows on each treatment were artificially inseminated using semen from the same boars and collections. All experimental females received inseminations of  $3.5 \times 10^9$  sperm/80 mL at 24 hours after onset of estrus. Sows that received physical boar exposure in parity 3 produced a higher estrus expressions ( $98 \pm 23.1$  vs.  $77.5 \pm 25.5\%$ ), NRR ( $92.1 \pm 6.3$  vs.  $74.4 \pm 3.5\%$ ), farrowing rate ( $88.2 \pm 16.5$  vs.  $63.8 \pm 7.1\%$ ), litter size ( $12 \pm 0.02$  vs.  $8 \pm 0.05$ ) and live piglets ( $10 \pm 0.05$  vs.  $6.3 \pm 0.02$ ), respectively compared with those from sows that received fence-line boar exposure in parity 3. Direct exposure of boars to sows prior to estrus induction and artificial insemination progressively enhances the lifetime reproductive performance in South African Mukota sows.

doumesiobi@gmail.com