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Inbreeding coefficient trend of lamb and parents and its effect on wool weight of Iran Black sheep in Animal Breeding Station of Abbas Abad

Ghasem Motaghinia¹, Homayoun Farhangfar^{2}, Mohsen Ahmadi Shahrakht¹, Abdolahad Shadparvar³ and Majid Jafari⁴*

1. M.Sc. Expert, Agriculture Department, Southern Khorasan University of Payame Noor, Birjand, Iran
2. Professor, Department of Animal Science, Faculty of Agriculture, University of Birjand, Birjand, Iran
3. Associate Professor, Department of Animal Science, Faculty of Agriculture, University of Guilan, Rasht, Iran
4. Expert, Animal Breeding Station of Abbas Abad, Agriculture Jihad Organisation of Razavi Khorasan, Mashhad, Iran

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Abstract

Effects of lamb and parents coefficient of inbreeding (CI) on wool weight were studied using 10,868 wool records belonging to 3,244 Iran Black lambs (1,633 males and 1,611 females) representing 96 rams and 995 ewes collected during 1983-2006 from Animal Breeding Station of Abbas Abad. Year and month of shearing, CI of lamb and dam, sex and birth type had significant affect on wool weight Among 3,244 pedigree animals, 3,005 heads (92.6 percent) were found to be inbred. Mean and standard deviation of CI of lamb, sire and dam in whole population were 8.1 ± 6.1 , 6.5 ± 6.1 and 5.3 ± 5.8 percent, respectively. The corresponding figures in inbred population were 9.0 ± 5.7 , 7.0 ± 6.1 and 5.7 ± 5.8 percent, respectively. Minimum and maximum CI of lamb was 0 and 36.4 percent, respectively. Increase of CI by one percent was accompanied with a decrease of 26.9 g (quadruplet male), 4.8 g (twin female), 4.3 g (triple female) and 13.1 g (quadruplet female) in wool weight. A decrease of 1.4 g in wool weight of lamb was observed as the CI of dam was increased by one percent. Statistically significant annual change trend were estimated to be 0.2 ± 0.02 percent and 0.1 ± 0.02 percent for whole and inbred populations, respectively. A controlled mating is needed to reduce deleterious effects of inbreeding.

Keywords: inbred lambs, inbreeding, Iran Black sheep, mixed model, wool weight.



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The effect of replacing of alfalfa by artichoke hay on nutrient digestibility, performance and carcass characteristics of Lori-Bakhtiari lambs

Mehdi Dehghani Sanij¹, Ahmad Afzalzadeh², Reza Kamran Yazdi³ and Mohammad Ali Norouzi^{4*}

1. M.Sc. Student, Department of Animal and Poultry Science, College of Abouraihan, University of Tehran, Iran
2. Associate Professor, Department of Animal and Poultry Science, College of Abouraihan, University of Tehran, Iran
3. Associate Professor, Department of Animal Science, University College of Agriculture and Natural Resources, University of Tehran, Iran
4. Assistant Professor, Department of Animal and Poultry Science, College of Abouraihan, University of Tehran, Iran

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Abstract

The effect of replacing alfalfa by artichoke hay on nutrient digestibility, gas production parameters, performance and carcass characteristics of Lori-Bakhtiari lambs was studied. The lambs in control group received diet containing 30 percent alfalfa, 15 percent barley straw and 55 percent concentrate and in test group alfalfa hay was replaced with artichoke hay, completely. Dry matter intake was higher for test group lambs ($P < 0.05$), but average daily gain and feed conversion ratio were not differed between experimental groups. Gas production rate was not differed between groups, but b fraction was higher for test group ($P < 0.05$). Replacing alfalfa by artichoke caused to increasing digestibility of dry matter and organic matter ($P < 0.05$). However, control diet had higher digestibility of crude protein and NDF ($P < 0.05$). After slaughter, there were no significant differences between groups in carcass characteristics and percentage of internal organs. Results of this study showed that artichoke hay could be replaced with alfalfa hay in finishing lambs diet.

Keywords: artichoke hay, carcass characteristics, digestibility, Lori-Bakhtiari lambs, performance.



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Effect of supplementing broiler diets with SAF-Mannan prebiotic on intestinal microflora and performance

Mohammad Roostaei-Ali Mehr^{1}, Marziyeh Ghamgosar², Mahmoud Haghghian Roodsari³*

1. Associate Professor, Department of Animal Science, Faculty of Agricultural Sciences, University of Guilan, Rasht, Iran
2. Graduate M.Sc. Student, Department of Animal Science, Faculty of Agricultural Sciences, University of Guilan, Rasht, Iran
3. Assistant Professor, Department of Animal Science, Faculty of Agricultural Sciences, University of Guilan, Rasht, Iran

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Abstract

Experiment was conducted to evaluate the effect of SAF-Mannan on productive performance and intestinal microflora by 180 day-old chicks. At six d, Chicks were divided to five groups (treatments) and each group was split into three replicates which included 12 birds. Amounts of 0.3 mg/Kg lincomycin premix, 0 (control), 0.5 (A_{0.5}) and 1 (S₁) g/Kg SAF-Mannan for total period were added to diet of the first four treatments and also 0.25 and 0.75 g/Kg SAF-Mannan for starter and grower, respectively were added to diets of the fifth treatment (S_{0.25-0.75}). Population of *E. coli* and *Lactobacillus* of ileal samples were assayed at 18, 28 and 38 d of age. The results showed that birds fed on SAF-Mannan diets had lower feed conversion ratio compared to control group ($P < 0.05$). At 18 and 28 d, the *E. coli* count in the ileal content of SAF-Mannan treatments was lower than control and lincomycin treatment ($P < 0.05$). At 28 d, *Lactobacillus* count in ileal content of birds fed on diet containing 1 g SAF-Mannan was higher compared to other treatments ($P < 0.05$). It could be concluded that addition of 0.5 g/Kg SAF-Mannan to broiler diet improve weight gain and feed conversion ratio probably, by modifying of intestinal microflora.

Keywords: broiler, lincomycin, micro flora, performance, SAF-Mannan.



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Investigation of *in vitro* digestibility and fermentation of diets containing of different parts of Siris (*Albizia lebbek*)

Zeinab Yousefi¹, Tahereh Mohammadabadi^{2}, Morteza Chaji³ and Mohammad Bojarpour³*

1. M.Sc. Student, Department of Animal Science, College of Animal Science and Food Technology, Khuzestan Ramin Agriculture and Natural Resources University, Ahwaz, Mollasani, Iran.
2. Assistant Professors, Department of Animal Science, College of Animal Science and Food Technology, Khuzestan Ramin Agriculture and Natural Resources University, Ahwaz, Mollasani, Iran
3. Assistant Professors, Department of Animal Science, College of Animal Science and Food Technology, Khuzestan Ramin Agriculture and Natural Resources University, Ahwaz, Mollasani, Iran.

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Abstract

This experiment was conducted to investigate the digestibility and fermentation parameters of diets containing flower, pod with seed and leaf of *siris* in sheep by two-step digestion and gas production methods. The experimental diets were including zero, 25, 50, 75 and 100 percent of *Siris* flower, pod and leaf. The result showed that gas production potential of diet containing 50 percent leaf was greater than other treatments ($P<0.05$). Gas production rate of diet containing 75 percent flower showed significant increase compared with the other diets ($P<0.05$). Partitioning factor, microbial biomass, biomass efficiency were the greatest for diets containing 100 percent leaf and different levels of pod ($P<0.05$). Dry matter digestibility of diets including different levels of *siris* leaf, 50 percent *siris* flower and 25 percent *siris* pod and neutral detergent fiber digestibility of diets including different levels of *siris* flower and 25 percent *Siris* pod were higher compared to control diet ($P<0.05$). The lowest concentration of ammonia nitrogen was belonged to diets containing 100 percent leaf and pod of *Siris* ($P<0.05$). It could be concluded that *Siris* leaf, flower and pod with seed of *siris* can be used instead of alfalfa in sheep diet and increase digestibility and diet ruminal fermentation.

Keywords: digestibility, fermentation, gas production, partitioning factor, *Siris*.



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Isolation and purification of spermatogonial stem cells from adult goat testis

Alireza Hasani Bafarani¹, Seyed Ziaoddin Mirhoseini^{2} and Farid Heidari³*

1. Ph.D. Candidate, Department of Animal Science, Faculty of Agriculture, University of Guilan, Rasht, Iran
2. Professor, Department of Animal Science, Faculty of Agriculture, University of Guilan, Rasht, Iran
3. Assistant Professor, Department of Animal Biotechnology, National Institute of Genetic Engineering and Biotechnology, Tehran, Iran

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Abstract

The Spermatogonial Stem Cells (SSCs) are founder of spermatogenesis and they are the only stem cells that can transmit genetic materials to offspring's. This research was conducted to achieving a reliable origin of SSCs from the goat testicular tissues according to a four steps procedure; a) Collection and preparing testicular tissues, b) Two enzymatic digestions, c) Using mesh and cell suspension and d) Culture the isolated SSCs on goat embryonic fibroblasts. Distinct markers of pluripotency such as NANOG, SOX2 and OCT4 were expressed in the isolated SSCs and also in these cells, nonspecific alkaline phosphatase test was positive. These cells used for co-culturing with GEF for several passages without differentiation or changing the shape. It was also found out that by using DMSO, these cells can be held in -70°C for one month. The result showed that the used procedure was efficient and the cells not only can express distinct markers of pluripotency but also can be culture and proliferate for long period of time without differentiations.

Keywords: adult stem cells, goat, spermatogonia, spermatogonial stem cells, spermatogonium.



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Effect of administration of Savory (*Satureja Khuzistanica*) essential oil in drinking water on performance and antioxidative potential of thigh meat in broiler chicken

Shahnaz Ebrahiminejad¹, Heshmatollah Khosravinia^{2*} and Masoud Alirezaei³

1. M.Sc., Department of Animal Science, Faculty of Agriculture, University of Lorestan, Khorramabad, Iran.
2. Associate Professor, Department of Animal Science, Faculty of Agriculture, University of Lorestan, Khorramabad, Iran.
3. Assistant Professor, Department of Animal Science, Faculty of Agriculture, University of Lorestan, Khorramabad, Iran.

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Abstract

This study was carried out to investigate the effect of administration of *Satureja khuzistanica* essential oil (SkEO) in drinking water on performance, lipid oxidation, activity of antioxidative enzymes and cholesterol content of thigh meat using 720 one-day-old Ross 308 broiler chicks. The SkEO was added into drinking water at zero (control-), 200, 300, 400 and 500 mg/L along with a treatment consisting polysorbate-80 (control+) at 500 mg/L. Inclusion of SkEO in drinking water significantly decreased water intake and improved production efficiency index of the birds during days one to 42 of age ($P < 0.05$). The concentration of thiobarbitoric acid reactive substances in thigh meat was significantly decreased by SkEO-treated water ($P < 0.05$). Addition of SkEO into drinking water significantly decreased superoxide dismutase as well as glutathione peroxidase activity in raw thigh meat of the birds ($P < 0.05$). Catalase activity was not influenced by SkEO-added water ($P > 0.05$). Lipid content and cholesterol level in thigh meat was significantly decreased in the birds received 500 and 200 to 400 mg/L SkEO through drinking, respectively ($P < 0.05$). It could be concluded that administration of *Satureja khuzistanica* essential oils into drinking water at minimum 200 mg/L promoted meat lipid stability. Cholesterol levels of thigh meat decreased by SkEO at 200 to 500 mg/L.

Keywords: antioxidative enzymes, broiler chicken, cholesterol, lipid, savory essential oil.



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Effects of *Artemisia sieberi* essential oil on performance and some of blood parameters in broiler chickens

Farzaneh Rahimi Niat¹, Shokoufeh Ghazanfari^{2*} and Seyed Davood Sharifi³

1. MSc. Student, Department of Animal and Poultry Sciences, College of Abouraihan, University of Tehran, Iran.
2. Assistant Professor, Department of Animal and Poultry Sciences, College of Abouraihan, University of Tehran, Iran.
3. Associate Professor, Department of Animal and Poultry Sciences, College of Abouraihan, University of Tehran, Iran.

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Abstract

This experiment was conducted to evaluate the effects of different levels of *Artemisia Sieberi* oil (zero, 100, 200 and 300 mg/kg) and antibiotic on performance and blood parameters in broiler chicken. 200 day-old broiler chickens (Ross 308) were allocated to five treatments, four replications with a completely randomized design. In total period, broilers were fed dietary *Artemisia Sieberi* oil at level of 300 mg/kg had higher weight gain than other experimental treatments ($P<0.05$). Control treatment had worse feed conversion ratio compared with broilers were fed dietary *Artemisia Sieberi* oil at levels of 100 and 300 mg/kg ($P<0.05$). The level of 100 mg/kg of dietary *Artemisia Sieberi* oil significantly increased the white blood cell value compared with other treatments ($P<0.05$). Red blood cell value significantly increased at levels of 100 and 300 mg/kg of dietary *Artemisia Sieberi* oils compared with other treatments ($P<0.05$). In this study, dietary *Artemisia Sieberi* oil at levels of 300 mg/kg improve broiler performance and can be considered as an alternative to antibiotic growth promoter.

Keywords: *Artemisia Sieberi* oil, blood parameters, broiler chicken, carcass characteristic, performance.