



The Use of Wheat Screenings with and without Enzyme Supplementation in the Grower Diets of Broiler Chickens

M. Mazhari^{1*} - A. Golian² - H. Kermanshahi³

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Abstract

An experiment was conducted to investigate the effect of wheat screenings with and without enzyme preparation on the performance, gastrointestinal parameters and gut viscosity and morphology of broiler chicks during grower period (11 to 24d). Five hundred day old male broiler chicks were fed a commercial diet till 10 d of age and then were randomly assigned to 10 diets. Diets were formulated to have five different levels (0, 9, 18, 27 and 36%) of wheat screenings with or without enzyme. Each diet fed to five groups of ten male birds. There was no significant difference in feed intake (FI) and feed conversion ratio (FCR) of chickens fed diets with different levels of wheat screenings during 14 days of age. Body weight gain (BWG) was decreased significantly with increasing level of wheat screenings in diets. Enzyme supplementation significantly increased BWG and decreased FCR. Increasing wheat screenings level significantly decreased gastrointestinal tract weight including pancreas, gizzard, large intestine as well as liver. Enzyme supplementation significantly decreased weight of liver, proventriculus, gizzard, pancreas, and large intestine. Villi height was decreased significantly by increasing wheat screenings level. Carcass weight was not affected by wheat screenings level and enzyme. Ileum and jejunum digesta viscosity increased by wheat screening level and decreased by enzyme supplementation. Increasing wheat screenings level increased villi width and decreased villi height and crypt depth. Enzyme supplementation increased villi height and crypt dept. Histological observations on jejunum of birds fed wheat screenings without enzyme showed shortening, thickening, and atrophy of the villi, all of which improved when enzyme was included in the diet.

Keywords: Wheat screenings, Enzyme supplementation, Performance, Broilers

1-Assistant Professor of Animal Science Department, University of Jiroft
(* - Corresponding Author Email: mozhganmazhari@yahoo.com)

2,3- Professors of Animal Science Department, College of Agriculture, Ferdowsi University of Mashhad



Effect of Various Levels of Roasted Fullfat Soybean and Methionine on Performance and Blood Parameter of Male Broiler Chickens

M. Teimury¹- R. Vakili²- S. Zaki Zade³- A. R. Forughi⁴- H. Rahmani⁵

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Abstract

To investigate the effects of different levels of roasted fullfat soybean and methionine on performance of broilers, an experiment was conducted in a completely randomized design on 312-day-old male broilers Ross strain with 6 treatments (three levels roasted soybean 0, 8, 12 and two levels of DL-methionine 100 and 110% Ross (2007) recommendation) and 4 replications (13 broilers per replicate). The experimental period was 42 days (starter 0-10, grower 11-24, finisher 25-42) and diets were provided isocaloric and isonitrogenous. All birds were fed ad libitum. The same management system was adopted for all birds, reared in 24 floor pens in a poultry house. Feed intake, weight gain and FCR were measured at the end of every period. At the end of production period, broilers were weighed; blood samples (5^{cc}) were obtained and slaughtered. The results showed that addition of roasted fullfat soybean to diet had significantly affected weight gain, FCR and feed intake in the finisher period ($p < 0.05$). The levels methionine had no significant effect on weight gain, FCR and feed intake in every period. The increase of roasted fullfat soybean and methionine in diet caused a significant decrease in pancreas weight and cholesterol ($p < 0.00$). However, it had no significant effect on triglyceride, LDL and HDL. In conclusion, the results of the present study demonstrated that the inclusion of 12% roasted fullfat soybean and 110% methionine in broiler diets may improve growth performance.

Keywords: Roasted fullfat soybean, DL-methionine, Blood parameter, Performance, Broiler

1, 2, 5- MSc, Assistant Professor, MSc of Animal Science Department, Islamic Azad University Kashmar Branch, Respectively

(*- Corresponding Author Email: Mteimury@yahoo.com)

3, 4- Assistant Professors of Animal Science Department, Education Complex of Khorasan Razavi Jihad-Agriculture.



Estimation of Digestible Lysine Requirements of Japanese Quail during the Starter Period

M. Ashoori¹- Gh. Jalilvand²- M. Mehri^{3*}- Gh.R. Zaboli⁴- M. Ghazaghi⁵

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Abstract

The aim of this study was the estimation of digestible lysine requirements of Japanese quail during the 7-21d period. Graduation level of L-lysine.HCL were added to the basal diet at the expense of corn starch to create different levels of digestible lysine ranged from 0.75 to 1.35% of diet. Growth performance and carcass composition were evaluated during the experiment. The results showed that incremental levels of digestible lysine significantly affected the body weight gain (BWG), feed conversion ratio (FCR), feed intake (FI), breast meat yield (BMY) and thigh meat yield (TMY). Either linear broken- line or quadratic broken line model were used to get break points of digestible lysine as a requirement. Based on linear broken line analysis, the break points for FCR and BMY were 0.99 and 1.04 % of diet, respectively. Using the quadratic broken-line model, the estimated Lys requirements for BWG, FCR, and BMY were 1.11, 1.04, and 1.15% of diet, respectively. The results showed that the Lys needs for optimum BMY was higher than BWG and FCR.

Keywords: Lysine requirement, Japanese quail, Production performance, Broken line model

1,2,3- MSc Graduate and Assistant Professors, Department of Animal Science, College of Agriculture, University of Zabol, Respectively

(*- Corrsponding Author Email: mehri@uoz.ac.ir)

4,5- Lecturer of University of Zabol



Effects of *Ferula gummosa* Boiss. Root on Performance, Microbial Population and Nutrient Digestibility in Broiler Chickens

Z. Abdollahi^{1*}-A. Hassanabadi²- A. Golian³

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Abstract

This experiment was conducted to investigate the effects of root of *Ferula gummosa* boiss. (galbanum) supplementation to corn-soy diets on performance, microbial population, nutrient digestibility and carcass characteristics of broiler chickens. Two hundred day old male broiler chicks of Ross 308 strain were used in a completely randomized design with 4 treatments, 5 replicates of 10 chicks each in floor pens. Four levels of ground root of galbanum (0, 1, 2 and 3%) were supplemented to starter (1-10 d), grower (11-24 d) and finisher (25-49 d) diets. The results indicated that diet supplementation with root of galbanum powder significantly reduced body weight, daily weight gain, feed intake of broiler chickens in starter period ($P<0.05$). The results of carcass analyses revealed that the relative weights of the breast yield, thighs and abdominal fat pad were significantly reduced by dietary root galbanum supplementation, whereas, relative weight of liver was increased ($P<0.05$). Feeding diets supplemented with root of galbanum had no significant effect on length of the small and large intestines. Broilers fed diets supplemented with powdered root of galbanum significantly lowered total coliiformes count in ileal contents and the number of lactobacilli was significantly increased ($P<0.05$). Digestibility of dry matter and crude fat were not affected by different levels of galbanum root. According to the results of this experiment, using of galbanum root powder in broiler diets, improved gut microbial population but had no significant effect on performance and apparent nutrient digestibility.

Keywords: Root of *Ferula gummosa* Boiss, Microbial population, Performance, Carcass characteristics, Apparent nutrient digestibility, Broiler

1,2,3- Former M.Sc Student, Associate Professor and Professor, Department of Animal Science, Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Iran, Respectively

(* - Corresponding Author Email: abdollahi@yahoo.com)



Studying Present Dairy Industry Management in the Khorasan Province of Iran

R. Valizadeh¹- M. Ghadami Kohestani^{2*}

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Abstract

The present condition and feeds utilization of dairy industry in Khorasan province was studied in 113 dairy farms based on the official data from Ministry of Agricultural-Jehad. Questioners evaluated the required parameters. The percentage proportion of lactating cows, dry cows, pregnant heifers, virgin heifers, 6-12 months old calves, under 6 months and 3 months old calves and breeding bulls were; 39, 10, 11, 6, 15, 9, 10 and 0.1 percent, respectively. Mean of milk yield was 25.5 kg/day with fat content of 3.5%. A large variation was detected in forage quality and concentrate constituents and composition. Generally, difference between feed costs in various seasons was about 30%. All group of cows were offered more nutrients than the recommended levels. The percentage of extra feed cost in comparison with the total dairy cost of feeding was 9.1, 14.3, 15.0 and 9.1 percent for the high, medium and low milk- producing and dry cows. Most of the used concentrates were prepared in the farms. Net energy of lactation (NEL) and protein contents of the hand made and factory made concentrates were 1.73 ± 0.03 Mcal per kg dry matter, $16.1\pm 0.8\%$ and 1.68 ± 0.04 Mcal per kg dry matter and $15.3\pm 1.04\%$, respectively. In most of the farms, silos were non-appropriately made. It was concluded that most of the utilized rations were imbalance in energy and protein ratios. Technical attention must be regarded to the ration formulation and forage quality in the province.

Keywords: Khorasan, Dairy cow management, Ration

1,2- Professor and PhD Student, Department of Animal Science, College of Agriculture, Ferdowsi University of Mashhad, Mashhad, Iran

(*-Corresponding Author Email: m_ghadami2006@yahoo.com)



The Effect of Oak Kernel on Digestibility and Fermentative Characteristics in Arabian Sheep

M. Harsini¹- M. Bojarpour²- M. Eslami³- M. Chaji^{4*}- T. Mohammadabadi⁵

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Abstract

The objective of this experiment was to study the effect of oak kernel on fermentative and microbial characteristics in Arabian sheep. Sixteen sheep were used (average weight of 45 ± 3 kg) in a completely randomized design. Treatments were four levels of oak kernel (0, 21, 42 and 63% DM). Animals were fed experimental diets for 28 days. Faecal with the ort feed of eight sheep collected for measured apparent digestibility during the last 5 days in the experiment. Rumen fluid obtained from all animals was used for gas production technique and measured fermentation parameters. Results showed that digestibility of dry matter of diets (respectively 63/55, 70/70, 71/73 and 75/80) increased linearly with increasing levels of oak. The rumen pH (respectively 6.29, 6/23, 6/17 and 5/90) and concentration of ammonia nitrogen (respectively 15/66, 13/75, 13/58 and 13/11) significantly reduced by increasing the level oak in the diet. Potential gas production, digestibility of ADF and NDF, digestible organic matter using gas production techniques were not affected by the experimental rations. So the No negative effect of oak kernel tannin. Oak kernel can be used as a source of carbohydrate and energy in sheep rations.

Keywords: Gas production Technique, Fermentation parameters, Digestibility of netural and acid detergent fibre

1,2,3,4,5- Former M.Sc. Student, Assistant Professor, Associate Professor and Assistant Professors, Department of Animal Sciences, Khuzestan Ramin Agriculture and Natural Resource University, Respectively
(* - Corresponding Author Email: mortezachaji@yahoo.com)



Dietary Effects of Micronized Soybean Meal and in Compare with Protected Methionine on Growing Performance of Zel crossbred Lambs

S. Yousefian^{1*}- A. Teimouri Yansari²- Z. Ansari Pirsaraei²

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Abstract

This study was carried out to evaluate the effects of microwave irradiated (800 W) soybean meal (irradiated over 5 min) and ruminal protected methionine (Mepron; 3 g/day) on crossbreds Zel weight gain using 15 lambs with an average weight of 31.52 ± 2.32 kg and similar condition score in a completely randomized design with 3 treatments in 5 replicates over 80 days. Three experimental treatments contain untreated soybean meal (T_1), microwave irradiated soybean meal (T_2) and supplemented with Mepron as treatment 3 (T_3). Weight in 15 days and daily feed consumption was determined and dry matter and nutrients digestibility among treatments were compared. Nine of the lamb were killed and their carcasses were evaluated. Daily Dry matter intake (2218.64, 2699.03 and 2775.47 g in T_1 , T_2 and T_3 respectively), final body weight (40.08, 50.48 and 52.51 kg respectively in T_1 , T_2 and T_3), daily weight gain (135.75, 234.51 and 248 g/day respectively in T_1 , T_2 and T_3) and carcasses characteristics between the control treatment and treatments 2 and 3 was significantly different, however there were similar among T_2 and T_3 . The results of current experiment showed that microwave irradiated soybean meal and ruminal protected methionine (Mepron) can significantly improve lamb performance and their carcasses characteristics with increase weight of expensive muscle group (standard muscle groups 1 and 3) and rib eye area.

Keywords: Soybean meal, Micronization, Ruminal protected methionine, Growing lamb

1,2,3- PhD Student and Assistant Professors, Department of Animal Science, University of Agriculture and Natural Resources of Sari, Respectively

(* - Corresponding Author Email: yousefian.sara@yahoo.com)



Chemical Composition and Nutritive Value of (*Astragalus brevidens* Freyn & Sint) and (*Astragalus masenderanus* Bunge)

F. Melati¹- N. Naghdi^{2*}- R. Valizadeh³

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Abstract

In this study, the nutritive value of *AS. brevidens* and *AS. masenderanus* were analyzed in 3 different morphological growth stages (vegetative, flowering, seeding) through chemical composition, *in vitro* gas production and *in vitro* dry matter digestibility determination. *Astragalus brevidens* and *Astragalus masenderanus* are the typical plants in khorasan ranglands that have high palatability and high biomass yeild. Gas production and degradation characteristics of plant's dry matter were measured during 120 h incubation in different growth stages. The results indicated that the nutritive value of the plants depended on their growth stages. In vegetative stage, protein content of leaf in *AS. brevidens* and *AS. masenderanus* were 16.99% and 20.77% respectively;as it has been accepted with the growth advancement, nutritive value of these plants decreased ($p<0.05$). According to gas production content, digestible organic matter (OMD) and metabolizable energy (ME) content were about 46.97-60.50% and 6.93-8.91 MJ/kg DM for *As. brevidens* and 45.52-57.61% and 6.71-8.41 MJ/kg DM for *As. masenderanus*. The *in vitro* dry matter digestibility (IVDMD) were 30.07-61 for *As. brevidens* and 28.60-61.05 for *As. masenderanus*. Considering, high digestibility and crude protein content of these forages, *As. brevidens* and *As. masenderanus* can be introduced as suitable forage crops. However, more studies need to identify the presence of anti-nutrition and phytochemical composition in these plants.

Keywords: *Astragalus brevidens*, *Astragalus masenderanus*, Gas production, Digestible organic matter, Metabolizable energy, *In vitro* dry matter digestibility

1 - Lecture, Faculty of Natural Resources and Environment, Ferdowsi University of Mashhad

2,3- PhD Student and Professor, Department of Animal Sciences, Faculty of Agriculture, Ferdowsi University of Mashhad

(*-Corresponding Author Email: ne.naghdi@gmail.com)



The Effect of Different Level of *Ziziphus jujube* Mill Foliage on Feed Intake, Blood Metabolites and Milk Production and Composition in Fluffy Goats

M. Bashtani^{1*}-M.H. Tehrani²-A.A. Naserian³- M.H. Fathi⁴

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Abstract

This Research was conducted to study the effect of different levels of *Ziziphus jujube* mill foliage on milk yield and composition, blood metabolites (glucose, BUN, triglyceride), dry matter intake and ruminal fermentation. For this purpose 27 heads multiparous southern Khorasan cross-bred goats (DIM of 60±12 and average BW of 28.59±3.18kg) were assigned to three groups as randomized complete design and housed in individual stalls. Treatments were: 1. without jujube leaves, 2. 7.5% jujube leaves/DM of diet and 3. 15% jujube leaves/DM of diet. The Goats were fed TMR diets twice a day (800 and 2000h) and water was available at all the times. For determination the milk composition, ruminal pH, NH₃-N and blood parameters, samples were taken in days 30 and 60 and dry matter intake (DMI) and milk yield was measured daily. Dry matter intake between experimental treatments were significant difference (P<0.05). Ruminal fluid pH and NH₃-N were not significantly different among treatments. Milk yield were higher for treatment containing 7.5% jujube leaves as compared to other groups, and between experimental treatments there was significant difference (P<0.05). There was no significant difference on milk compositions. The concentrations of glucose and blood urea were significantly different among treatments. It is concluded, using of *Ziziphus jujube* mill foliage as section of diet forage had positive effect on milk production and no effects on milk composition.

Keywords: *Ziziphus jujube* Mill, Milk production and composition, Blood parameters, Dairy goat

1,2,4-Associate Professor, Former MSc Student and Associate Professor, Department of Animal Science, Faculty of Agriculture, University of Birjand, Iran, Respectively

(*- Corresponding Author Email: mbashtani@birjand.ac.ir)

3- Professor, Department of Animal Science, Faculty of Agriculture, Ferdowsi University of Mashhad



Effect of Sulphur Coated Urea on Digestibility, Blood Parameters and Ruminant Fermentation in Raieni Goats

A. Javandel Korbaslou¹ _ R. Tahmasbi^{2*} _ O. Dayani³

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Abstract

This study was conducted to investigate the effect of sulphur coated urea for substitution of as nitrogen sources of diets. Digestibility, fermentation and blood parameters and microbial protein synthesis were investigated. Four male Raieni goats were used in 4 x 4 Latin square experimental design. Each experimental period was 21d with 16d adaption period and 5d for collecting samples. The experimental diets were: 1) control (soybean meal), 2) containing 1% urea, 3) containing 1.4% of sulphur coated urea, and 4) containing 2.15% of sulphur coated urea. Dry matter (DM), organic matter (OM) and feces nitrogen were highest in control group. Also, digestibility of DM, OM and nitrogen were reduced with feeding diet containing 1% urea. Urinary nitrogen excretion between treatments was significantly different. Ruminant $\text{NH}_3\text{-N}$, blood glucose and blood urea N in animals fed diet containing 2.15% sulphur coated urea were significantly lower compared with the diet containing 1% urea. Microbial protein synthesis, total purine derivatives excretion (mmol/day), nitrogen content of purine derivatives and allantoin excretion were lowest in animals fed diet containing 1% urea. Purine nitrogen index and microbial nitrogen to total urinary nitrogen ratio were the same in all treatments but those values were reduced when animals fed diet containing 1% urea. In conclusion, using sulphur coated urea had a reduction effect on nitrogen excretion and increased microbial protein synthesis.

Keyword: Digestibility, Sulphur coated urea, Nitrogen, Microbial protein synthesis

1,2,3- MSc Graduated, Assistant Professor, Associate Professor, Department of Animal Science, Faculty of Agriculture, Shahid Bahonar University of Kerman, Respectively
(* - Corresponding Author Email: rtahmasb@mail.uk.ac.ir)