ABSTRACTS OF THE “21st HUNGARY CONFERENCE ON RABBIT PRODUCTION”

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About 90 participants took part at the 21st Hungarian Conference on Rabbit Production at Kaposvár, organized by the University of Kaposvár, the Hungarian Branch of the WRSA, the Rabbit Production Board and the Agribands Europe Hungary Inc. This is the largest and most popular event of the rabbit breeders in Hungary. Twelve papers were presented by senior and young scientists. The topic of the papers covered some fields of rabbit production (production, housing and welfare, reproduction, genetics and nutrition). Full papers are available from the organizer (Szendro.Zsolt@ke.hu) on request.

PRODUCTION

SITUATION OF RABBIT PRODUCTION IN HUNGARY IN 2008

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In 2008, the total quantity of the Hungarian rabbit production was 9,900 tons in live. The production level decreased as well 4,900 tons was exported. The amount of meat (fresh) was exported to Italy, Switzerland, Germany and Belgium. The proportion of rabbits produced in small farms did not change, it was about 5%. The price of live rabbits (paid by the slaughter houses) increased by 30 HUF/kg to 370 HUF/kg. The costs of rabbit production decreased by 10% in 2008, the feed cost by 15%, so the total costs of 1 kg of live rabbit was around break even 300-320 HUF/kg. Rabbit production profitability was around break even in 2008. The ratio of the export is 94-95% so the home consumption is only 5-6% shows a non significant growth.

HOUSING AND WELFARE

ENVIRONMENTAL CONDITIONS REQUIRED FOR THE RABBITS’ WELL BEING

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The study demonstrates the environmental peculiarities of the European wild rabbits. All benefits (higher survival rate against predators) and costs (aggressive behaviours, stress, higher risks of infections or injuries, competition for nest sites) aspects are summarized, being decisive for the rabbits to live in smaller and larger colonies or individually. For the farmed rabbits most of the benefits (e.g. surviving of predation) disappear, yet disadvantages of group-living remain. Rank order can be observed in the same way as for the European wild rabbits, causing stress and aggressive behaviour, some does kindle into the nest of each others, decreasing the reproductive performance and longevity of the does and increasing the mortality of the kits. These phenomena are against the aspects of well being, therefore for the breeding rabbits only the individual housing can be advocated. For the growing rabbits the possible largest groups that can be reared together are the litter mates. Mixing rabbits from different litters to the same groups generates more disadvantages than benefits. Based on previous studies, disadvantages (consumption of litter material, decreased weight gain, body weight, dressing out percentage, increased risk of coccidiosis and digestive tract disorder based mortality as a consequence of litter consumption) of rearing the rabbits on deep litter are summarized. For the growing rabbits above the temperature of 15-16°C staying on wire net is preferred, as compared to deep litter. Contrary to the several disadvantages due to the lack of information, the consumers show preference for rabbit meat originated from animals kept on deep litter. The consumers’ demands and the rabbits’ preference can be partly harmonized when the rabbits are reared on wire net after weaning, then during the second phase of the rearing deep litter material is used. Comparing the production and behaviour of rabbits kept on wire net, plastic net or plastic slat no differences were found, although the younger rabbits preferred the plastic net.
EXAMINATION OF GROWING RABBITS HOUSED IN CAGES OR IN PENS WITHOUT OR WITH PLATFORM


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The objective of this study was to test a new combination of deep litter and wire net floor. The experiment (2nd replication) was conducted at Kaposvár University using Pannon White rabbits (n=193). The following experimental groups were formed: C=20 cages (2 rabbits/cage, n=40); P16=3 pens (14 rabbits/pen, 16 rabbits/m², n=42); P11=3 pens (9 rabbits/pen, 11 rabbits/m², n=27); PW=3 pens with wire net elevated platform (14 rabbits/pen, 11 rabbits/m², n=42); PD=3 pens with elevated platform deep litter on it (14 rabbits/pen, 11 rabbits/m², n=42). Rearing the rabbits in group PD decreased feed intake (FI), body weight (BW), average weight gain (AWG) and dressing out percentage (DoP). Significant (P<0.05) differences were found between group PD and P16 or P11 in BW (2841 and 2980 or 3012 g, resp.), in BWG (44.4 and 47.7 or 48.4 g/d, resp.), between PD and C or P11 in FI (130 and 146 or 151 g/d, resp.), between PD and C in DoP (60.5 and 62.0% or 62.0%) and between PD and C or P16 in the ratio of hind part (38.8 and 38.1 or 38.1%, resp.). No significant differences were observed for feed conversion ratio, mortality, or perirenal and interscapular fat percentage. In group PD, 16.7, 53.7 and 29.6% of the rabbits were located on the platform (1/3 basic area), under the platform (1/3 basic area) and at areas near the feeder or drinker (1/3 basic area). In group PW, the main location of rabbits was more balanced (on the platform: 30.3%, under the platform: 34.6%, near the feeder or drinker: 35.6%). The combination of wire net and deep litter floor (group PD) negatively affected production, whereas the higher possibility for locomotory behaviour and staying on deep litter is considered more favourably by consumers. The rabbits can freely choose their location, and the litter can also be easily replaced with the use of a removable platform.

REPRODUCTION

INFLUENCE OF ALTERED NURSING AND NUTRIENT SUPPLY OF RABBIT DOES ON THE PRODUCTION

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The effect of altered nursing and fasting before AI on subsequent reproduction and growth of current litters was studied in multiparous does (n=480). Control rabbits (K) nursed freely and were fed ad libitum. Does for local farm practice (T) nursed freely and were fed ad libitum. In three biostimulated groups, there was a shift from free to once-a-day nursing (i.e. controlled on d 9, 10 and 11) with wire-mesh separation (BD), metal-plate insertion (BF) and nest-tray removal (BE) and return to free nursing on d
The objective of the experiment was to compare different lighting regimes. The experiment was made with Pannon White rabbits. The does were randomly housed in two buildings. In the first room a 16L lighting regime was applied (16L, n=60), in the second room a 8L lighting schedule was used which was extended 8 d prior to insemination (11 d) by a 1 hour light period inserted into the middle of the 16-hour dark period (8±1L, n=59). The lighting schedule, type of feeding and random effect: parity) except for the mortality which was analyzed by \( \chi^2 \)-test. No significant differences were observed for the number of insemination per kindling, for litter weight at kindling or at 21d of lactation and for litter size (total, born alive, litter size at 21 and 35 d). The changing of the pellet affected the body weight of the rabbit does at the 35th d of lactation (−326 g, \( P=0.033 \)) in favour of BB group). The individual and litter weight of the does at the 35th d of lactation (−326 g, \( P=0.001 \); −42 g, \( P<0.001 \), BG<BB) and the condition of the does after parturition (e-value: BB: 1922 vs. BG: 1957, \( P=0.024 \)). For the growing rabbits the weight differences that were observed at weaning remained until the end of the growing period (11 wk of age) (5 wk of age: +54 g, \( P=0.008 \); 7 wk of age: +74 g, \( P=0.014 \); 9 wk of age: +91 g, \( P=0.007 \); 11 wk of age: +91 g, \( P=0.033 \) in favour of BB group). No significant differences were observed for feed consumption and for feed conversion ratio. Based on the results, feeding the rabbits with breeding pellet until their weaning was favourable.
COMPARISON OF PRODUCTIVE AND CARCASS TRAITS OF DIFFERENT GENOTYPES

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The objective of the study was to compare the production and carcass traits of three rabbit genotypes having different adult weight. The maternal line was selected for litter size (M; n=31) (adult weight 4.0-4.5 kg); the Pannon White (P; n=32; AW: 4.3-4.8 kg) and a large sized (L; n=32; AW: 4.8-5.4 kg) paternal line were selected for weight gain and for carcass traits (using CT-data). The average daily gain (between the ages of 5 and 11 wk) of the L rabbits exceeded that of the P and M rabbits by 4.3 and 8.8 g, respectively (\(P<0.001\)). Differences of 272 and 491 g were found for 11 wk old body weight.

The daily feed intake of the L rabbits was 17 and 23 g higher than that of the P and M rabbits by 4.3 and 8.8 g, respectively. The opposite order was recorded in the P rabbits, which exceeded the M group by 1.1% (\(P<0.001\)). Similar differences of 272 and 491 g were found in daily feed intake. Gain-to-feed ratio did not differ significantly. It was concluded that the live performance of growing rabbits was affected by the adult weight of their parents.

2. CARCASS TRAITS

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The aim of the experiment was to study the effect of dam and sire genotypes on the carcass traits of growing rabbits. The experiment was carried out at Kaposvar University. Pannon White and Maternal line does were inseminated with the sperm of Pannon White (P), Maternal line (M), Large-bodied line (L), Terminal line of Hycol hybrid (H) or Coloured line (C). M, P and C were medium sized; L and H were large-sized genotypes. P and L genotypes were selected for carcass traits by CT. The rabbits were weaned at the age of 5 wk and housed in wire net cages. Daily lighting was 16 h and the temperature 15 to 18°C. Rabbets were fed ad libitum a commercial pellet. Water was available ad libitum from nipple drinkers. Examining the dam breed effect, the daily weight gain (+5.7%, \(P<0.001\)) and the gain-to-feed ratio (−6.7%, \(P=0.004\)) of the progenies of P does were better than those of the M does. Examining the sire breed effect, the body weight and the daily weight gain were higher in groups H and L; whereas those of the progenies of M and C sires were worse. Body weights at 11 wk of age were: H: 2918 g, L: 2793 g, P: 2678 g, C: 2636 g, M: 2585 g (\(P<0.001\)). Similar differences were found in daily feed intake. Gain-to-feed ratio did not differ significantly. It was concluded that the live performance of growing rabbits was affected by the adult weight of their parents.
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**GENETIC PARAMETERS OF CARCASS TRAITS IN PANNON WHITE RABBIT POPULATION**

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CT and test slaughter results of 278 ten week old Pannon White rabbits were analyzed. The rabbits were reared at the Experimental rabbit farm of the Kaposvár University. The main traits that were considered in the analysis were the following: CT-based thigh muscle volume, thigh muscle weight (based on test slaughter), dressing out percentage, weight gain, ratio of the fore, mid and hind body parts (compared to the reference carcass). The Pearson correlation coefficient between the CT based thigh muscle volume and thigh muscle weight was high (0.77) but it was far from unity. The moderately high correlation coefficients between the thigh muscle volume/weight and dressing out percentage (0.45-0.53) were favourable. The selection on weight gains seems to increase also the thigh muscle volume/weight (0.51-0.52). Taking into account the seasonal (batch) effects did not modify the results.

**NUTRITION**

**THE EFFECT OF FEED SUPPLEMENTED BY DIFFERENT TANNIN LEVELS ON THE PRODUCTION AND CARCASS TRAITS OF GROWING RABBITS**

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The objective of the experiment was to analyze the production and carcass traits of growing rabbits fed pelleted diets either medicament-free or supplemented with a coccidiostatic drug, or supplemented with 3 different chestnut hydrolysable tannin extract levels, respectively. From the age of 18 d, the rabbits were fed a diet supplemented with a coccidiostatic drug (Cc), or with tannin (400 g/100 kg: T400). At weaning (35 d of age) the 5 following dietary sub-groups were formed in both groups: medicament-free (CO), supplemented with coccidiostatic drug (Cc), and increased levels of hydrolysable tannin (Farmatan) (T200, T400 and T600). At weaning, the body weight of the Cc rabbits was significantly higher than that of the T400 rabbits (974 vs. 940 g, *P*<0.05). Except for this finding the experimental diets did not influence the growing rabbit production (weight gain, body weight, feed consumption, feed conversion ratio, mortality). The two diets given prior to weaning significantly affected the perirenal fat weight (Cc=28.9 and T400=26.3 g; *P*<0.05). The rabbits fed tannin supplemented pellets after weaning had a higher mid-part ratio compared to the reference carcass (*P*=0.1). Because the mortality rate was low in all groups (CO, T200 and T600=5.9%, T400=1.4%, Cc=0%, NS), it can be concluded that no positive effect can be expected when the population analyzed is healthy and housing conditions and feed compositions are adequate.