

СПИСЪК

на научните трудове на гл. ас. д-р Павлина Димитрова Христатијева по научна специалност- 04.02.01- «Развъждане на селскостопанските животни, биология и биотехника на размножаването»

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I. Във връзка с дисертационен труд за придобиване на образователна и научна степен „Доктор“

1. Облакова, М., П. Христатијева, М. Лалев. 2005. Проучване на растежа, развитието и продуктивните способности на някои междудлинейни хибридни пуйчета. Животновъдни науки, 1: 59-65

ABSTRACT

This study determined the development and the age growth dynamics for five different turkey hybrid combinations which were obtained by crossing of the following turkey lines: Super heavy (SH), Meat heavy (MH), Laying heavy (LB), Laying light (LL), North Caucasian bronze (NCB). These were reared in the Poultry hybrid centre of the Agricultural Institute - Stara Zagora according the following scheme: I group ♂SH x ♀LH, II group ♂MH x ♀LH, III group ♂SH x ♀NCB, IV group ♂CSH x ♀LL, V group ♂MH x ♀LL.

I group was distinguished with the best ratio of one-year-old turkey mass to mass of eggs - 67.49% or with 4.55% higher than for IV group, which had a result of 64.62%. They were with the heaviest mass on the age of 16-weeks 6900±112.34g, significantly exceeded those of V group 6270±108.49g (the lightest combination) at probability $P<0.001$.

The percentage of fertility and hatchability of loaded and fertilized eggs was highest for the II group respectively 93.30%, 80.00%) and 85.71%, which were obtained from the crossing of MH turkey cocks with LH turkey line. The average daily gain for the whole period of 16 weeks was highest for the turkeys obtained from crossing the parents with the highest live mass (SH x LH)-61.01g, followed by the III group(MHxLH)-59.30g. With the lowest average daily gain for the whole period were the turkeys of IV and V group-57.44g and 55.47g. The survival ability for the whole period was highest for IV group-96%, followed by III group 88%and I group- 87%. The sires of the turkeys of these groups were from the SH line. For the turkeys from II and V group obtained by MH male line the survival ability was lower – respectively 82% and 80%. In the production of broiler turkeys it is advisable to utilize the SH sire line differentiated on the trait live mass, and as a maternal line- LH with the highest live mass and laying capacity.

Key words: turkey hybrids, live weight, average daily yield, feed consumption

2. Христакиева, П., 2005. Проучване на някои морфологични качества на пуйчи яйца получени от изходни линии пуйки. Животновъдни науки, 3: 76-79

ABSTRACT

This study was conducted in 2003 in the Agricultural Institute to determine the morphological properties of the eggs laid by the available lines of turkeys (Laying heavy, Laying light, Meat heavy, Super heavy, North Caucasian bronze) at the age of 32-34 weeks. The studied lines at the age 32-34 weeks laid eggs of standard weight, optimal index of shape from 71.89 to 73.04 and satisfactory thickness of the shell from 0.50 mm to 0.55 mm. The dynamics of the relative portion of the yolk and with the studied eggs showed that upon increase of the weight of the eggs the weight of the white increased to a higher extent. The relative portion of the shell was within the range of 10% from the whole egg and did not show any dependence on the weight of the egg. The indexes of the white and yolk, and colouring of the yolk to the Roche scale were almost similar for the eggs laid from the five lines of turkeys. The main morphological characteristics of the eggs were within the favourable limits typical for a biological product. The similarity between these results and the results reported by other local and foreign researchers should make the above statement reliable. The interest in the field of breeding and feeding should be directed toward the increase of the colouring of the egg yolk which would improve the incubation properties of the eggs.

Key words: turkey hens, egg weight, yolk and white, morphological characteristics of eggs

3. Христакиева П., М. Облакова, М. Лалев. 2005. Проучване на продуктивността на пуйчета бройлери. I. Кланичен анализ на месодайните качества на пуйчета –бройлери на 16-седмична възраст. Съюз на учените Стара Загора, Международна научна конференция, т III.:68-77

ABSTRACT

The experimental was done at the local breeding farm of the Hybrid Center of Poultry Breeding at Stara Zagora town. A full slaughter analysis of 19 indicators concerning fattening abilities of five groups turkey- broilers, was fulfilled. The turkey- broilers were bred by a traditional technology in optimal conditions. The slaughter yield, the ratio of the different body parts to the live weight and the ratio of the different body parts to the pure carcasse. were calculated. It was established that the mail turkey- broilers of the I group has reached the highest live weight for the period- 7633g. followed by II group- 7450g and III group- 7033.33g ($P < 0.05$). The tendency in females was kept! I group- 6041,67g exceeded the second one-5725g ($P < 0.05$). The pure carcasses in I group was 5361.7g in mails and 4345 in females, towards II group respectively 5360g and 4345. The slaughter yield was higher in females of the II group- 73.94% followed by I group- 71.92%. Mails of the V group- 72.28% had the highest value, followed by the II group-71.95%. On the base of this study, was recommended the utilization of the following turkey- broilers crossbreds: mail Syper heavy X femail Laying heavy line and mails Heavy meat X femails Laying Heavy line.

Key words: turkey broilers, growth, slaughter analysis

4. Христатијева П., 2006. Възможности за използване на линии пуйки от генофонда за получаване на хибридни пуйчета. *Автореферат*, Стара Загора, 2006

5. Христатијева П., М. Облакова, М. Лалев, 2006. Корелативни зависимости между някои продуктивни показатели при пуйчета-бройлери. Съюз на учените Стара Загора, Международна научна конференция 1-2 юни ,т.П, с.344-350

ABSTRACT

The aim of present study was to establish the relations between old turkey- broilers and weighth in five groups 16 weeks old turkey- broilers, and live weight registrated in dynamics in the course of the age.

The experiment was done at the turkey farm of the Agricultural Institute- Stara Zagora. Five initial lines were artificially inseminated (by the sheme 1) such as five groups were obtained In this way. It was followed the live weight in dynamics- at start level at 2,4,6,8,10,12,14 r 16 weeks of age by sex, troughth individual measurement of the weighth. within 5 g difference. Individual exterior measurement in 30 mails and 30 females turkey- broilers from each group, having the average live of the group, at 16 weeks of age were done. Phenotypic correlations were calculated on the base of the following indicators: body lenth, size of the thorax, sternum length, thigh length, subthigh length, methatarsus length, thorax width, thorax depth. It was established that the relations between live weight and indicators width and size of the thorax in the turkeys of the I and II group at the 16 week had the highest values wich was the best criterion for the meat purpose breeding. Correlations between live weights over the different periods had significant and high values in all five groups. This could contribute to the early age prediction of the live weight.

Key words: turkey broilers, growth, correlation

6. Христатијева П., М. Облакова, М. Лалев, 2006. Проучване продуктивността на пуйчета-бройлери П. Екстериорни измерения. Съюз на учените Стара Загора, Международна научна конференция 1-2 юни 2006.,т П, с.350-360

ABSTRACT

The aim of present study was to establish the exterior measurements in five groups turkey broilers at different age and the relation with the live weight.

The study was done at the turkey farm of the Agricultural Institute. By means of artificial insemination through five initial lines turkeys, five experimental groups were obtained. The turkey broilers were reared by a traditional technology with, established optimal parameters.

Individual exterior measurements were done at the age of 4, 8, 12 and 16 weeks in 30 males and 30 females birds of each group having the average live weight of the group.

Exterior measurements of the thorax at the age of 8, 12 and 16 weeks had the highest values of the live weight in both sexes of the birds from the first group.

The turkey- broilers from the III, IV and V group had the highest values of the indicator- legs and lowest live weight.

The mass index at the age of 16 weeks had the highest values in the birds from the I and II group for both sexes and the highest live weight. This relation could be used for production of the meat characteristics in turkey- broilers.

Key words: turkey broilers, exterior, mass index

Б. Във връзка с конкурса за избор на академична длъжност „Доцент“

7. Облакова М., М. Лалев, П. Христканева. 2007. Correlations among exterior body measurements in turkey- broiler female parents BIG 5, Union of Bulgarian scientist, Stara Zagora, International science conference, Stara Zagora 7-8 June 2007., т II, с.161-166

ABSTRACT

Thirty female turkeys BIG 5 at the ages of 6, 12, 16, 20 weeks were used. The aim of the present study was to determine the phenotype correlations among the principal body measurements. The data show that live weight at the age of 6 weeks had positive correlations with the studied body dimensions, with a high statistical significance. At this age there was a significant positive correlation ($r=0.84$) between live body weight, breast depth, keel length ($r=0.79$), breast width ($r=0.79$), breast circumference ($r=0.75$), femur length ($r=0.68$) at $p<0.001$. In the process of growth and development, at the next studied age, 12 months the tendency for high and positive correlations between the studied body dimensions was preserved. At the age of 16 weeks, the results showed that the influence of live body weight on the parameters of the other body dimensions was preserved; body length and breast circumference at $r=0.41$, breast width and depth at $r=0.40$ ($p<0.05$). The results showed that, at the age of 20 weeks, live body weight correlated positively with all body dimensions in the study of female turkeys, but at different statistical levels. A preservation of the tendency for high correlation between living body weight and breast circumference was observed: $r=0.764$ at $p<0.001$. The correlations between live body weight and the other studied body dimensions during the different development periods were statistically significant and high. With advancing of age, the most constant correlation was the one between live body weight and breast circumference, which can be used in selection at an early age, and to predict the live body weight of adult turkeys.

Key words: live body weight, correlation, body dimensions

8. Облакова М., М. Лалев, П. Христканева. 2007. Correlation among exterior body measurements in turkey- broiler male parents- BIG 6, Съюз на

ABSTRACT

Thirty male turkeys BIG 6 at the ages of 6, 12, 16, 20 weeks were used. In order to establish the phenotype differences between lines, measurements of 9 exterior body parameters were performed with a precision of 1 cm: body length, breast circumference (with a band), breast width and depth, keel length, shank length, femur length, metatarsal length, total leg length. On the basis of obtained results, the correlations between body parameters and among body parameters and the live body weight were derived. Live body weight correlated positively and highly to all studied body measurement at the age of 6 weeks at $p < 0.001$. At the age of 12 and 16 weeks, the body weight of male BIG 6 turkey-broilers could not be an indirect parameter for the development of the other body parts. Among the other body dimensions as breast width-breast depth and breast circumference, there were significant positive correlations with coefficients of $r = 0.690$; $r = 0.590$ at $p < 0.001$. A high positive correlation existed between breast depth and breast circumference ($r = 0.700$; $p < 0.001$). At the age of 20 weeks, the live body weight could be predicted on the basis of body length, breast width and breast circumference – the correlation was positive and high ($r = 0.620$, $r = 0.820$ и $r = 0.820$ respectively).

Key words: live body weight, correlation, body dimensions

9. Христатијева, П., М. Облакова, М. Лалев, 2007. Проучване възпроизводителните качества на изходни линии пуйки, Съюз на учените Стара Загора, Международна научна конференция 7-8 юни ,т II, с.115-121

ABSTRACT

The experimental was done at the local breeding farm of the Hibrid Center of Poultry Breeding - Stara Zagora . Turkey hens from the lines: Super Heavy (SH), Meat Heavy (MH) Layer heavy (LH), Layer Light (LL), North Caucasian Bronze (NCB) were used. The age to into lay, the volume to laying, was made Percent of fecundate and hatch of the eggs. Line LH laying the turkeys Year old 205 days, and the turkeys from line-MH in 240 days. The average hatch for 150 days and the intensity to laying is highest with the turkeys from LH line due 81. 25%- number of eggs and 54. 16 percent as well lowest of MH line 41. 42 of number of eggs and 27. 61 percent. Largest number of inseminated eggs in dependence for have MH- turkey-91. 55 percent and lowest percent fecundate of the eggs have SH turkey-82. 02 percent. Highest percent hatch of the inseminated of eggs have the eggs of the LH turkeys with the fourth nest 79. 31 percent and first nest- 79. 01 percent.

Key words: turkey hens, hatchability, fertility

10. Христакиева, П., М. Облакова, М. Лалев, 2008. Зависимост между масата и инкубационните качества на пуйчи яйца. Животновъдни науки, XLV,4: 85-90

ABSTRACT

The eggs from three turkey lines were included in the study. The eggs were distributed in three groups depending on their weight. The percent of hatching as a part of the charged eggs and the hatching from the inseminated eggs were determined after the incubation of the turkey eggs. They were weighed and the percentages were calculated per weight group.

It was found that the eggs from the heaviest weighing group of the turkeys from the Heavy line had the lowest fertility of 76.67%.

The percentages of the hatched eggs from the stocked ones as well as of the hatched eggs from the inseminated ones were the highest for the sub-middle level to about the middle level table as well as for the corresponding line, in comparison to the heaviest eggs.

For the three weighing groups of the reviewed lines the loss of weight of the eggs from the initial one was from 65.59 percents up to 72.19 percents, which makes them eligible for hatching.

Key words: turkey lines, incubation, fertility, hatching

11. Oblakova M., M.Lalev, P.Hristakieva, S. Georgieva. 2008. Effect of egg weight on the productive traits of hatched turkey poults not later than 16 weeks of age. Trakia Journal of Science, vol.6, N 4: 83-87

ABSTRACT

The experiment was performed in 2007 in the selection farm of the Agricultural Institute, Stara Zagora. The eggs were products of artificial insemination in turkeys, aged 36 weeks, of the Layer Light (LL) strain. After hatching, the hatching percentage of incubated and th

e hatching percentage of fertilized eggs were determined, the percentage of the weight of poults from the weight of incubated eggs. In order to establish whether the egg weight had any effect on the growth potential of turkeys, 15 LL poults of both genders in each egg group were reared. Total forage consumption, survival rates and body weight at some chosen ages were recorded. The heaviest turkey poults were hatched from the heaviest eggs; the percentage ratio of these weights to the egg weight was 71.48 % and 70.63%, respectively. After 10-12 weeks, the death rates became stable and then decreased up to the end of the experimental period. Our study did not show weight of turkey eggs displaying a significant effect on the growth of turkey by age 16 weeks. Accordingly, eggs from all studied weight groups could be used in the production of turkeys.

Key words: turkey, broiler, growth, way of breeding, slaughter analysis

12. **Hristakieva, P., M. Oblakova, M. Lalev. 2009.** Incubation and vital morphological traits in eggs from age-related of the turkeys. *Trakia journal of sciences*, v.7, N1: 63-67

ABSTRACT

The experiment was performed in the selection farm of the Agricultural Institute, Stara Zagora, "Poultry breeding and production technologies" section in 2008. Eggs produced by turkeys of the Heavy Meat (HM) strain at the age of 32 and 44 weeks were used. The incubation traits were studied on all newly-laid eggs with hatching potential. The early embryonic death rate (EED) was determined at first week of incubation at following defined periods: I– formation of embryonic disk (incubation days 0-3) and II– after formation of the embryonic disk (incubation days 4-7). The embryonic death was determined by examinations by Day 25 and by the time of placing eggs in the hatching chamber. The eggs of the Heavy Meat hybrid turkeys, aged 32 weeks, showed a higher fertilization rate –91.92%, higher early embryonic death rates: 1.35% up to the 3rd day of incubation and 2.02% up to the 7th day, vs. 0.88% (up to day 3) and 0.88% (up to day 7) in eggs laid by turkeys aged 44 weeks. The hatchability of placed and fertilized eggs was higher for eggs from younger layers (age of 32 weeks) compared to those laid by turkeys at the age of 44 weeks.

Key words: turkey, age, eggs, hatch, morphologic qualities of the eggs

13. **Облакова, М., П. Христкаева, М. Лалев. 2009.** Класичен анализ на пуйчета излюпени от яйца с различна маса. Съюз на учените Стара Загора, Международна научна конференция 4-5 юни, том 1, с. 162-167

ABSTRACT

The present study was carried out in the breeder turkey farm of the Agricultural Institute, Stara Zagora with eggs of Layer Light (LL) turkeys at the age of 36 weeks, artificially inseminated. After the 20th week of age, three male and three female turkey poults with an average live weight gain were slaughtered. After a 12-hour fasting, slaughter analysis was performed according to 19 parameters. On their basis, the slaughter yield and the percentage ratios of the different body parts were calculated. It was found out that the dressed carcass, breast muscles and the slaughter yield of male turkey poults at the age of 20 weeks, hatched from eggs of the highest weight group, were superior to those of the other groups at $p < 0.05$. The highest weight for the 20-week period was those of female turkeys of group II –7500 g, followed by group III–7100 g and group I –6900 g at $p < 0.01$. Breast muscle of turkey poults from group II was statistically significant higher by 1800 g as compared to the other groups (group I: 1690 g, group III: 1716.67 g). Within the studied egg weights, a tendency towards influence on the slaughter traits, directly related to growth and development of one-day old male turkey poults, was present. For the production of turkeys, eggs from all three studied categories could be used.

Key words: turkey, egg size, growth, way of breeding, slaughter analysis

14. Лалев М., И. Иванова, П. Христатијева, М. Облакова, Н. Минчева. 2010. Използване на граха като източник на протеин в смеските за пилета бройлери. Животновъдни науки, XLVII, 2010, N 2, с. 60-66.

ABSTRACT

Опита бе проведен с по 50 броя предварително сексирани еднодневни пилета от двата пола във опитна и контролната група, получени от линии от генофонда на ХЦП. Отглеждането беше групово при постоянен достъп (*ad libitum*) с комбиниран фураж съобразен с възрастта и категорията на птиците до 49-дневна възраст. Пилетата от контролната група получаваха традиционен комбиниран фураж за съответния период, а опитната група - комбиниран фураж с 10% грах. По време на опита се контролираше живата маса на пилетата чрез индивидуално претегляне с точност до 1 g на 1, 14, 28, 42- и 49-дневна възраст. Отчитана е консумацията на фураж и оползотворяването му по групи за периодите от излюпването до 14-дневна възраст, от 14 до 28, от 28 до 42- и от 42-ри до 49- дневна възраст. В края на периода бе направен кланичен анализ на по три мъжки и женски пилета- бройлери с жива маса средна за групата, след 12 часово гладуване по 8 показателя. Въз основа на тях беше изчислен кланичният рандеман и процентните съотношения между отделните телесни части. Интензитетът на растеж се запазва висок до 49-дневна възраст при мъжки и женски пилета бройлери, угодявани с комбинирани фуражни смеси с 10% грах, като достигат средна жива маса съответно 1949,34 g и 1891,28 g. Разхода на фураж за 1 kg прираст за целия период е по-нисък с 11.69% и 10.27%, съответно при женските и мъжките от опитната група. Бройлерите угодявани с комбиниран фураж с 10% грах в състава си до 49-дневна възраст имат по-висока жива маса, маса на братфъртинга, бутчетата, грила, гърдите и ядливите вътрешности.

Key words: broilers, live weight, feed efficiency, slaughter performance, peas

15. Лалев М., И. Иванова, Н. Минчева, М. Облакова, П. Христатијева. 2010. Използване на сух спиртоварен остатък от пшеница при угодяване на пилета бройлери. Животновъдни науки, XLVII, N 1, с. 26-35.

ABSTRACT

Опита бе проведен с по 50 броя предварително сексирани еднодневни пилета от двата пола във опитна и контролните групи, получени от линии от генофонда на ХЦП. Отглеждането беше групово при постоянен достъп (*ad libitum*) с комбиниран фураж, съобразен с възрастта и категорията на птиците до 49-дневна възраст. Пилетата от контролната група получаваха традиционен комбиниран фураж за съответния период, а опитните групи - комбиниран фураж с 3-6-9% ИСОЗ и 6-12-18% ИСОЗ. По време на опита са контролирани - живата маса на пилетата на 1, 14, 28, 42- и 49-дневна възраст. Отчитана е консумацията на фураж и оползотворяването му по групи за периодите от излюпването до 14-дневна възраст, от 14 до 28, от 28 до 42- и от 42-ри до 49- дневна възраст. В края на периода бе направен кланичен анализ на по три мъжки и женски пилета- бройлери с жива маса

средна за групата, след 12 часово гладуване по 8 показателя. Въз основа на тях беше изчислен кланичният рандеман и процентните съотношения между отделните телесни части. Включването на 3-6-9% ИСОЗ и 6-12-18% ИСОЗ към комбинираните фуражи за пилета бройлери, угодявани до 49 – дневна възраст, води до достоверно увеличаване на живата маса в сравнение с контролната. Разхода на фураж за 1 kg прираст за целия период е по-нисък с 4.58% и 9.58%, съответно при женските и мъжките от II опитна група, а при III опитна група 7.90% при женските и 13.69% при мъжките. Разликата между двете опитни групи е съответно 3.48% за женските и 4.55% за мъжките. Комбинираните фуражи с различно процентно участие на ИСОЗ за пилета бройлери, угодявани до 49 –дневна възраст води до по-високо тегло на братфертинга, бутчетата, грила, гърдите, ядлите вътреиности. Храненето с комбинирани фуражи съдържащи 3-6-9% ИСОЗ води до 44.76 лв. за тон по – малко през финишерния период, а с фуражи съдържащи 6-12-18% ИСОЗ до 95.68 лв. за тон също през финишерния период спрямо контролната група. Храненето с комбинирани фуражи съдържащи 3-6-9% ИСОЗ води до понижаване на комбинирания фураж с 44.76 лв. за тон през финишерния период, а с фуражи съдържащи 6-12-18% ИСОЗ до 95.68 лв. за тон за същия период.

Key words: broiler, live weight, slaughter performance, feed utilization, dry distiller's grains

16. Лалев, М., П. Христакиева, М. Облакова, Н. Минчева, И. Иванова.
2010. Морфологични качества на яйцата при кокошки с различен генотип. Животновъдни науки, XLVII, N 1, с. 50-55.

ABSTRACT

Проучването е проведено през 2009 г. в племенната ферма на ХЦП при ЗИ – Ст. Загора. То е етап от създаване и усъвършенстване на линии кокошки в яйценосно и бройлерно направление. Като опитен материал бяха използвани пет яйценосни линии кокошки – Т, Б, В, Г и Д и три бройлерни – линия М, Л и К. Целта на изследването е да се направи сравнителна характеристика на морфологичните качества на яйцата на пет генотипа кокошки от яйценосно и три генотипа от бройлерно направление, което ще послужи при бъдещата работа за правилно насочване на селекцията. На 34 седмична възраст от всяка група бяха взети за изследване на морфологичните качества по 30 броя яйца. На всяко яйце се определиха 13 показателя. Най-висока маса на яйцата от яйценосно направление имат кокошките от линиите Т и Б- 61,58 g и 62.90 g, а от бройлерно – линия М (корниш) - 66.51 g при $p < 0,001$. Дебелината на черупката с подчерупковата ципа при кокошките от яйценосно направление е най-голяма при линиите, снасящи по-тежки яйца – линия Т и линия Б $p < 0,001$ - 0,392 mm и 0,387 mm, а при линиите от бройлерно направление се наблюдава обратна тенденция. С най-дебела черупка са яйцата на плимутрока линии Л и К -0.369 mm и 0.356 mm, съответно. Кокошките от проучваните линии в двете направления снасят яйца с добър индекс на жълтъка. Най-високо качество на белтъка имат яйцата на линия Д от яйценосно направление и линия М - бройлерно направление. Показателите за индекс на белтъка при двете линии плимутрок не отговарят на оптималните изисквания и затова е необходимо селекционната работа да се насочи към подобряване качествата на белтъка.

Keywords: кокошки, яйца, морфология на яйца, белтък, хаф единици, индекси

17. Христатијева П. 2010. Индекс на формата на пуйчи яйца и връзката му с оплодяемостта и люпимостта им. Научна конференция "Устойчиво и конкурентноспособно земеделие". 1 - 2 октомври 2009 г. – Стара Загора. Животновъдни науки, XLVII, N 6, с. 15-19.

ABSTRACT

The experiment was done at the local breeding farm of the Hybrid Center of Poultry Breeding - Stara Zagora. Turkey hens from the lines: Meat Heavy (MH) turkey, Layer Light (LL) turkey, North Caucasian Bronze (NCB) were used. From each line of turkeys was taken 10 percent of the daily output of the eggs in three consecutive days at the middle of the productive period (for month April). Measuring the length and the width, was done on the eggs with a gauge with a punctuality until 0.05 millimeters. The index was decided under the formula: $I(\text{percent}) = d / D \times 100$. Each egg was weighed and measured. It did not have dependence between the index of the form of their fertility. Most short fertility 78.26 percent had the eggs with the index of the form between 74.01 and 76.00 of the Layer Light (LL) turkey. The eggs from the NCB turkeys with the index of the form over 76 - 95.83 percent had highest percent of fertility. The highest percent of hatch of the three explored line-turkeys had the eggs with an index of the form between 74.01 in 76.00. The index of the form was in negative and low correlation with the weight eggs.

Key words: turkey, eggs, index of the form, hatch, fertility, correlation, egg shape

18. Лалев М., М. Облакова, Н. Минчева, П. Христатијева, И. Иванова. 2011. Възможности за използване на генофонда при създаване на нови изходни линии кокошки бройлерно и яйценосно направление. Аграрен университет – Пловдив. Аграрни науки, III, бр.6:119-129

ABSTRACT

Stock hybrids and breeding hens from world leading poultry companies are offered on the Bulgarian market. As a result of a greater concentration and more productive high performance we are facing the fact that very species are involved in the new hybrid scheme worldwide. Thus the loss of genetic resources carries a certain risks for future selection activities. The significant impact of this activity on the poultry industry in Bulgaria request the preservation and improvement of the productive quality of the lines in order to improve the genetic qualities of the breeding hens. Ten baselines of hens are bred in the breeding facilities of the Department of Poultry at the Agricultural Institute in Stara Zagora- SZ- 80B,

SZ- 80M, line B and D, line G, Ng, E, Ss, ChS and StR their productivity being controlled for the following traits: live weight on day 1, at 5 months and 10 months of age, reproductive performance, egg productivity, survival percentage for the period. A characterization of the hen base lines was made – part of the national gene pool- a result of many years of preservation and improvement. The creation of new lines in poultry farming is a process which aims at a maximum use of the genetic potential of laying and broiler breeds. The team aims to create, improve and maintain the three starting lines: line P, line T and line N of the laying stock by applying a particular breeding scheme. In the broiler direction three lines will be consolidated – line K, line L and line M, and will occupy the relevant part of the scheme for obtaining broiler chicken.

Key words: hens, eggs, way of breeding, productivity, parents

19. Лалев М., М. Облакова, Н. Минчева, П. Христкаева, И. Иванова. 2011. Създаване на изходни линии кокошки от бройлерно направление. 1. Основни продуктивни показатели на изходни линии кокошки – бройлерно направление. Аграрен университет – Пловдив Аграрни науки, III, бр.6:129-135

ABSTRACT

The study took place at the poultry Hybrid Center in the Agricultural Institute – Stara Zagora, during 2009-2010. The following lines were studied: Line K, Line L, Line G of the White Plymouth Rock breed. In each line 20 flocks were formed with 10 hens, one main and one reserve rooster. The present study was carried out to identify and compare the productivity of broiler chickens constituting a part of the poultry population at the Hybrid Center in Stara Zagora.

The live weight of young fowls from line K at 6 weeks of age was higher than that of the adolescent birds from the other two lines by 3% in females and 5.73% in males.

The number of laid eggs with the hens from line K by the 44th week of age was the highest and exceeded that of line G and line L by 4.86% and 4.47% respectively.

The fertility of the eggs and hatchability of chickens was higher in line L – 89.55% and 94.04% respectively.

Key words: hens, parents, eggs, live weight, productivity, feed consumption.

20. Oblakova M., M. Lalev, T. Bakalivanova, P. Hristakieva, N. Mincheva, I. Ivanova. 2011. Effect of dietary probiotic supplementation of layer hens on morphological and functional traits of eggs, Съюз на учените Стара Загора, Международна научна конференция 2-3 юни, 21-27.

ABSTRACT

Two lines of stock layers were included: line K (layers with white feathers used for obtaining autosexing hybrids as maternal line) and line L (Plymouth hens, used as maternal form for broiler chickens production). Sixty hens were included in each of experimental (whose ration was supplemented with probiotic) and control groups (non-supplemented). They were reared in 5 boxes with 4 nests in each, at a ratio of 12 hens per rooster in a nest. Hens from line N received a standard compound feed according to their category. The diet of the experimental group was supplemented with 500 g probiotic/ton. The biologically active components of the bioproduct were: active microflora – *Lactobacillus delbrueckii* subsp. *bulgaricus* with total counts of 6.5×10^5 , *Streptococcus thermophilus* with total counts 3.4×10^8 . The addition of probiotic to the birds' feed led to a significant change of Live mass in hens of the meat-type L line at $p < 0.001$. The percentage of hatchability from the set and fertile eggs was higher in the birds that had consumed probiotic of the N line – 89.92% and 96.67% at $p < 0.01$ and $p < 0.05$. The same indices for the L line were also higher in the experimental group, yet they were not statistically significant ($p \geq 0.05$). From the results it could be concluded that the probiotic had no influence on the egg's size and morphological traits. The laying capacity in both groups of both lines did not differ significantly after the usage of probiotic. The addition of probiotic did not have a significant influence on the acidity of the egg content, as well as on the egg melange's ability to form emulsion, which is a very important functional trait.

Key words: probiotic, egg production, egg quality, layer, broiler breeder, productive trait.

21. Минчева Н., П. Христатијева, И. Иванова, М. Лалев, М. Облакова.
2011. Морфологични качества на яйцата при кокошки носачки от
генофонда, Съюз на учените Стара Загора, Международна научна
конференция 2-3 юни, 59-63.

ABSTRACT

The study was carried out in 2010 in the farm of Hybrid Poultry Center at the Agricultural Institute – Stara Zagora to identify genetic features of the hens from the national gene pool of the main morphological characteristics of eggs. Were examined eggs by line Ss, line NG, line E, line ChS, line StR, line G, line D, line D, line SZ80M, line SZ80B, line B at 34 week of age 30 eggs from each line. For each egg were determined: egg mass, shell weight, shape index, yolk index, albumen index, Haugh unit, yolk, albumen shell as a per cent of egg weight. The highest egg mass was found for the line G, SZ80M and SZ80B– 61.18 g, 60.27g, 59.03 g. Lines with - high ratio of egg mass to the mass of the egg yolk are the largest egg- mass- line ChS 34.47%, followed by the line is 32.70%, respectively. The index of protein in all lines is unreliable differences with the exception of line D-12.3%. Between line D and E-7.88% has been demonstrated difference at $p < 0.001$. Haugh units vary more borders in the lines between them. The high quality protein is distinguished line D with a value of 89.61 units Haugh, followed by line E with 79.31 Haugh units.

Key words: hens, eggs, eggs morphology, egg white, Haugh units, indices

22. Lalev M., M. Oblakova, P. Hristakieva, N. Mincheva, I. Ivanova. 2011
Investigation of dietary probiotic effects on productive traits in broiler breeders – Archiva Zootechnica 14:2, 57-65

ABSTRACT

The experiment was performed with breeder hens of line K – White Plymouth rock, from the gene pool of the Poultry Hybrid Centre, used as maternal form for broiler production. Control hens received a traditional compound feed, and the experimental group – compound feed supplemented with 500 g probiotic/tonne. The biologically active substances of the bioproduct were: active microflora – Lactobacillus delbrueckii subsp. bulgaricus with total counts of 6.5×10^5 , Streptococcus thermophilus with total counts 3.4×10^8 , vitamins and amino acids. The aim of the study was to investigate the effect of this probiotic on productive and morphological traits of produced eggs. The egg mass in experimental group was 2955.56 g, due to the higher egg laying intensity. The lower feed conversion per egg resulted in lower feed conversion per kg egg mass – by 0.515 g in experimental group. It could be concluded that the dietary supplementation with the probiotic increased the survival of experimental hens. By the end of the experimental period, egg mass increased statistically significantly in breeders that received the supplement ($p < 0.001$).

Key words: probiotic, egg production, egg quality, broiler breeder hens, productive traits

23. Hristakieva, P., M. Lalev, M. Oblakova, N. Mincheva, I. Ivanova. 2011.
Effect of storage duration on the quality of hatching turkey eggs. Archiva Zootechnica 14:3, 57-65, 2011

ABSTRACT

The experiment was performed in 2011 in the breeder farm of the Hybrid Poultry Centre at the Institute of agriculture – Stara Zagora in order to determine the effect of the different preincubation storage periods on hatchability traits of turkey eggs and the changes in egg components. Eggs from light layer (LL) line of turkeys at the age of 38 weeks used as maternal side for turkey-broilers production were used. They were divided into the following groups: eggs stored for 14, 10, and 4 days as well as fresh eggs (without storage). The storage of eggs took place in an egg storehouse with constant air temperature and humidity (17°C and 72%). The loss of weight during the storage increased as the storage duration prolonged ($p < 0.001$). During incubation, the highest weight loss percentage was exhibited by eggs stored for 10 days (14.29%) that was statistically significantly ($p < 0.001$) different from weight loss of fresh eggs, which lost weight. The highest fertility (92.42%) was noted in fresh eggs. A very high early embryonic death rate was observed in eggs stored for 14 days (13.63%). The hatchability of fertile eggs was the highest in fresh eggs (90.77%) and the lowest in eggs stored for 14 days (71.45%) ($p < 0.001$). The albumen percentage of total egg weight was the highest in fresh eggs (59.09%). The albumen pH increased with the storage duration and was the highest in eggs stored for 14 days (9.25). Albumen's height decreased as storage duration became longer. For incubation to be used turkey eggs from LL line stored at least time at 72% humidity and 17°C, because hatchability decreases with increasing duration of storage.

Key words: turkey, egg quality, storage period, hatchability, embryonic mortality, pH

24. Lalev M., M. Oblakova, N. Mincheva, P. Hristakieva, I. Ivanova. 2012. Evaluation of productive traits of chicken lines from the national gene pool. *Trakia Journal of Science*, Vol.10, 1:38-42

ABSTRACT

The issue of avian gene pool preservation should be linked to the development of a new trend in selection allowing rational use of the diversity of breeds and lines. Ten original chickens lines are reared in the Poultry Breeding Unit at the Institute of Agriculture, Stara Zagora: CZ-80 B, CZ-80 M, Line B, Line D, Line G, Line NG, Line E, Line Ss, Line ChS, Line StR controlling their productivity through reproductive traits, live body weight at the age of 1 day, 5 months and 10 months, egg production and survival rate for the production period. The reproductive traits of chickens from the genepool are characterized with high egg fertility - from 96.56% for Line NG to 86.98% of Plymouth Rock Line G. Among the egg-type chicken lines, the highest hatchability rate from fertile eggs was observed in Line D - 89.05%. Chickens of all lines studied exhibited low death rates. The highest egg mass was that of chickens from Line G - 63.10 g and Line E - 61.73 g. The highest egg production over the 180-day period was that of the egg-type Line B - 146 eggs, and Line CZ-80 B - 145.67.

Key words: hens, eggs, way of breeding, live weight, productivity, feed consumption, hatchability

25. Lalev M., M. Oblakova, P. Hristakieva, N. Mincheva, I. Ivanova. 2012. Development of new laying hen lines. I. Growth potential and egg production rate. *Trakia Journal of Science*, Vol.10, 1:43-47

ABSTRACT

The experiment was performed in the Poultry Breeding Unit at the Institute of Agriculture, Stara Zagora, in 2009-2010. Three different chicken genotypes obtained by a specific plan were used: line R and line T from the Rhode Island Red breed and line N from the Rhode Island White breed. For each line, 20 selection nests with 12 hens and 2 cockerels (one principal and one spare) were formed. On the basis of observed zootechnological parameters, the line T was found to be superior to the other two lines with the highest live body weight of hens and cockerels and the lowest feed consumption per egg. Line N exhibited the highest hen-housed egg production rate, the intensity of egg laying, the age of egg laying's start and hatchability. The fertility of eggs produced from this line was higher than that of Line N by 7.94%, whereas the hatchability of fertile eggs was by 2.19% higher than that of Line P. The egg mass for Line P and Line T with 60.90 g and 60.24 g ($p < 0.01$) was superior to Line N.

Key words: hens, eggs, breeding, live weight, productivity, feed consumption, hatchability

- 26.Mincheva N., M. Lalev, M. Oblakova, P. Hristakieva, I. Ivanova 2012.
Investigation on the frequency of alleles at the K locus and their effect on
the growth of two lines of Plymoutrock chickens. Archiva Zootechnica
15:1, 69-75

ABSTRACT

The research was performed with the goal of establishing the frequency of alleles for fast or slow feathering at the K locus in two lines of White Plymouth Rock hens (maternal forms) –lines L and K, as well as their influence on the birds' live weight during growth. The rate of feathering was determined at one day of age according to the length of the primary and secondary wing feathers. The birds' weight development was controlled through individual weighing at 2, 4, 6, 8, 10, and 12 weeks of age. In male chickens of the L and K lines, a higher frequency of the slow-feathering allele was found, respectively, 0.676 and 0.503 against 0.203 and 0.306 in females. Male and female chickens of the L line with a rapid-feathering genotype had higher live body weight than those with alternative genotype at ages of 2 to 12 weeks. There were no differences between the feathering genotypes for female chickens of the K line, whereas in males there was a tendency for higher live body weight with the rapid-feathering genotype. Slow-feathering chickens of both sexes of the same line were by 81.20 g (4.10%) lighter than rapid-feathering ones at the age of 12 weeks ($p < 0.05$). The effect of slow-or rapid -feathering alleles was not identical for both sexes and the studied lines.

Key words: slow-feathering alleles, rapid-feathering alleles, gene frequency, growth

- 27.Mincheva N., M. Lalev, M. Oblakova, P. Hristakieva, I. Ivanova.2012.
Effect of feathering alleles (K/K+) on laying performance, hatchability
parameters and some body measurements in two lines of white Plymouth
rock hens. Biotechnology in animal husbandry 28(3):405-414

ABSTRACT

The study aimed to investigate the effects of sex – linked feathering alleles on laying performance, hatchability parameters and body measurements in hens from two White Plymouth Rock lines (line L and line K) used as maternal lines in broiler production. Four groups of 18-week-old hens were formed, two of each line, with genotype K/W (slow feathering) and k+/W (rapid feathering) respectively. Groups of line L included 72 hens divided into 6 boxes with 1 rooster per 12 hens, whereas line K groups comprised 96 hens of each genotype, housed in 8 boxes with one rooster per 12 hens, totally 192 birds. The K locus alleles had no significant effect on egg production traits ($p > 0.05$). The presence of slow feathering allele resulted in lower fertility and hatchability of set eggs in both studied lines ($p < 0.05$). A substantial effect of feathering rate alleles was observed with respect to the egg shape index ($p < 0.05$), eggshell thickness ($p < 0.001$) and albumen index ($p < 0.05$). The presence of the slow feathering allele resulted in lower live body weight of birds from line K at the age of 36 weeks ($p < 0.05$), but in longer thighs ($p < 0.01$) and metatarsi ($p < 0.001$) in both lines. The selection for creation of slow feathering lines for feather sexing purposes should take into consideration the effect of the K gene on studied traits.

Key words: feathering genes, egg production, body measurements, hatchability

28. Hristakieva P., N. Mincheva, M. Oblakova, M. Lalev, I. Ivanova. 2014. Effect of genotype on production traits in broiler chickens. Slovak Journal of Animal Science, 47, (1):19-24

ABSTRACT

The study was carried out on two broiler chicken genotypes Ross 308 and Cobb 500 in the nucleus poultry farm of the Institute of Agriculture – Stara Zagora between April and June 2012. For this purpose, 300 eggs of each genotype were set for incubation to compare the meat traits of two of the most popular broiler chicken hybrids: Cobb 500 and Ross 308 reared at the nucleus poultry farm of the Institute of Agriculture – Stara Zagora. The fertility rate, embryonic death rate, weight loss between incubation days 0 and 18, and the hatchability of set and fertilized eggs were determined. The number of chickens included in the study was 100 from each genotype (50 male and 50 female). Experimental birds were reared on wooden shavings bedded floor, with constant access to compound feed according to the age until 49 days of age. The live body weight was determined individually by weighing birds at 1, 14, 28, 42 and 49 days of age. By the end of the experiment, a slaughter analysis of three female and three male broilers with a live weight close to the group average was performed. For integral assessment of broiler combinations, the European Poultry efficiency factor (EPEF) was calculated. The results of the present experiments showed a number of differences in meat and slaughter traits between studied broiler chicken hybrids. The weight of hatchlings differed significantly according to the genotype ($p < 0.05$). One-day-old Cobb 500 broilers were heavier than Ross 308 broilers. At the end of the experiment, Cobb 500 broilers attained a higher live weight, and were heavier than Ross 308 birds by 6.29 %. The feed intake per kg weight gain over the entire experimental period was 2.178 kg and 2.181 kg for Ross 308 and Cobb 500, respectively. Higher values of the European Poultry Efficiency Factor (EPEF) were established in Cobb 500 broilers, which were more economically efficient than Ross 308 by 14.87 points (6.18 %). The performed slaughter analysis showed higher values of slaughter traits in Cobb 500, which had higher growth potential: roasting weight 1810.67 g and grilling weight 1710.50 g; whereas the respective values in Ross 308 chickens were 1547.67 g for grilling and 1645 g for roasting. In male Cobb 500 broiler chickens, the roasting percentage was 74.02 %, which was 1.41 % more than that of Ross 308 males.

Key words: broiler; European Poultry Efficiency Factor (EPEF); body weight; Cobb 500; Ross 308; slaughter analysis

29. Lalev M., N. Mincheva, P. Hristakieva, M. Oblakova, I. Ivanova 2014. Estimation of heterosis, direct and maternal additive effects from crossbreeding experiment involving two White Plymouth rock lines of chickens. Biotechnology in Animal Husbandry 30(1):103-114

ABSTRACT

Eight hundred one-day-old female chickens from two White Plymouth Rock lines (line L and line K) and their reciprocal crosses obtained from 40 male and 480 females were used to form four genetic groups (LxL, KxK, LxK and KxL). Differences among genotypes, the direct and maternal additive effects, and the heterosis were investigated with regard to the following traits: body weight from 2 to 10 weeks of age and at 18, 26 and 30 weeks of age, age at sexual maturity, egg production per hen-day until 46 weeks of age, average egg weight (between 32 and 46 weeks of age), liveability during the production period, egg fertility, hatchability of set and fertile eggs. The results demonstrated a statistically significant effect of the genotype on body weight during the different age periods ($p < 0.001$), age at sexual maturity ($p < 0.001$), egg production ($p < 0.01$) and livability ($p < 0.05$). On the basis of analysis of direct additive effects, it could be concluded that line L was superior for obtaining combinations with more intensive growth rate. Although the lack of direct additive effect with respect to the other traits studied, there was a positive tendency favouring line K. Maternal additive effects had a substantial effect on body weight in most studied periods and livability, favouring line L. The heterosis was important for body weights at different periods of life (3.76-22.33 %), age at sexual maturity (-8.32 %) and egg production (8.25 %) with positive effects on these traits. The results pointed at a mutual complementary effect between both lines as a result of crossbreeding.

Key words: crossbreeding, direct additive effect, maternal additive effect, heterosis

30. **Hristakieva P., M. Oblakova, M. Lalev, N. Mincheva. 2014.** Heterosis effect in hybrid laying hens. *Biotechnology in animal husbandry* 30 (2):303-311

ABSTRACT

The new original egg laying lines T, P and N selected at the Institute of Agriculture – Stara Zagora were used. Hybrid $T\sigma \times P\phi$, $P\sigma \times T\phi$ crosses were obtained and used for paternal line. Thereafter, the following breeding schedule of paternal and maternal lines was applied: Group I – $(P\sigma \times T\phi)\sigma \times N\phi$; group II – $T\sigma \times (P\phi \times N\phi)$; group III – $T\sigma \times N\phi$; and group IV – $P\sigma \times N\phi$. The production traits of original and hybrid birds were recorded: live weight at the age of 8 and 18 weeks, age of sexual maturity in days, 150 days egg production, average egg weight – at 2-week intervals until end of lay; livability, heterosis effect. The live weights of hybrids at 8 and 18 weeks of age were statistically significantly lower compared to original lines. The values of heterosis for this parameter were negative for all four hybrid combinations. The earliest beginning of egg lay occurred in $(T\sigma \times P\phi)\sigma \times N\phi$ (162.08 days of age) and $P\sigma \times N\phi$ (163.11 days of age). The relative (%) heterosis for age of sexual maturity of studied hybrid combinations had moderate to low negative values. Average egg weights of hybrids were higher and the values of heterosis – positive for all four groups varying from 0.97% to 1.63%. The average 150 days egg production was lower in purebred lines compared to hybrids. The highest average 150 days egg production was determined in $P\sigma \times N\phi$ hybrids – 142 eggs. The heterosis effect for egg production in hybrids was significant.

Key words: crossbreeding, laying hens, heterosis, egg production

- 31.Иванова, И., М. Лалев, В. Георгиева, Н. Минчева, М. Облакова, П. Христатијева. 2014. Ефект от участието на три нива сух зърнен спиртоварен остатък от царевица като компонент на комбинираните фуражи за пилета бройлери върху продуктивните показатели. International scientific on-line journal "Union of scientists- Stara Zagora", vol. IV, n.5, 2014, Animal studies & Veterinary medicine

ABSTRACT

The aim of the present study was to investigate the effect of three dietary levels of corn dried distillers grains with solubles (DDGS) on production traits in broiler chickens. The experiment was conducted with 200 male one-day-old Ross 308 broiler chickens, divided into 4 groups with 50 birds each. The experimental birds were reared on wooden shavings flooring up to 49 days of age, with constant /ad libitum/ access to compound feed according to the age periods. The live body weight was determined at 10, 28 and 49 days of age, and feed utilisation –per each period on the basis of feed intake and resulting weight gain.

The chickens from group I (control) were fed balanced compound feed as per the requirements of the hybrid, without corn DDGS. Chickens from experimental groups II, III and IV received compound feed with 10%, 15% and 20% DDGS, respectively. By the end of the trial, slaughter analysis was performed on four birds from each group with body weight equal to the group average after 12-hour fasting. The inclusion of 10% DDGS to the compound feed of broiler chickens, fattened until 49 days of age, did not exert a negative effect on growth performance of birds. The dietary corn DDGS levels of 15% and 20% resulted in statistically significant reduction of body weight by 7.21% and 7.95% vs non-supplemented controls, respectively. Over the entire fattening period, there was not a considerable difference in feed utilisation between control chickens and chickens fed 10% DDGS. The feed supplementation with 15% and 20% DDGS increased feed expenditure by 4.0-4.8% vs controls. Feeding compound feed with 15% and 20% DDGS to broiler chickens resulted in statistically significantly lower breast weight and thigh weights. In all supplemented groups, breast weight was substantially reduced, while the thigh weight was unchanged. The results allowed recommending the inclusion of up to 10% corn dried distillers grains with solubles in the compound feed of broiler chickens throughout the 49-day fattening period.

Key words: broiler chickens, Dried distillers grains with solubles (DDGS), body weight, feed utilization, slaughtered carcass parameters

32. Mincheva N., M. Oblakova, M. Lalev , P. Hristakieva, I. Ivanova. Investigation on production traits of broiler chicken hybrid combinations. Bulgarian Journal of Agricultural Science, vol. 21, 1: 184-188

ABSTRACT

The experiment was carried out in the selection base of the Poultry farm, Institute of Agriculture – Stara Zagora between April and June 2012. Two broiler chicken genotype combinations were used: the first was the offspring of line M roosters with line K hens (M x K), and the second – of line M roosters with line L hens (M x L). For this purpose, 300 eggs of each combination were set for incubation. The fertility rate, embryonic death rate, weight loss between incubation days 0 and 18, and the hatchability of set and fertile eggs were determined. The number of chickens included in the study was 100 from each genotype (50 males and 50 females). All chicks were sexed, wing-banded and placed in 4 floor pens with wood shavings as litter material until 49 days of age. The body weight was determined individually by weighing chickens at 1, 14, 28, 42 and 49 days of age. Feed conversion was calculated based on data on feed intake and weight gain of chickens. By the end of the experiment, a slaughter analysis was performed of three female and three male broilers with a live weight close to the group average. The results on fertility rate and hatchability from eggs set and fertile eggs in studied broiler combinations showed a tendency towards higher values for the M x L combination - 94.45%, 87.50% and 92.57%, respectively. The body weight of the two different studied broiler genotypes was almost the same by the end of the experiment in both male and female birds. Proportions of bratfertig and grill (as percentage of live weight at slaughter) were better in male M x L hybrids compared to male M x K birds. In females, higher relative values of boneless breast were established in M x K compared to M x L broilers. Therefore, both combinations carrying the traits of meat type chicken lines from the Institute of Agriculture – Stara Zagora, are appropriate for efficient production of commercial broiler chickens.

Key words: broilers, hybrid combinations, body weight, hatchability, slaughter analysis

33. Teneva, A., V. Gerzilov, M. Lalev, H. Lukanov, M. Mincheva, M. Oblakova, P. Petrov, P. Hristakieva, I. Dimitrova, K. Periasamy. 2015. Current status and phenotypic characteristics of Bulgarian poultry genetic resources. *Animal Genetic Resources*. 1-9 под печат

ABSTRACT

Poultry biodiversity conservation is a great challenge for many countries. Within the last several years, the number of endangered local breeds has increased, leading to a considerable loss of genetic resources. A similar trend was observed among the poultry breeds, including chicken, local turkey and goose breeds/lines established in Bulgaria, part of which is definitely lost. Currently these breeds/lines are at risk and/or threatened with extinction. The information obtained by phenotypic characterization of these breeds is the first step for planning the management of poultry genetic resources through setting up improved selection schemes and conservation strategies. In this paper, we reviewed the current state of knowledge regarding the morphological and phenotypic diversity of local poultry breeds and some old productive poultry lines in Bulgaria.

Keywords: Bulgarian poultry breeds, conservation, phenotypic characterization, production performance

34. Mincheva N., M. Oblakova, P. Hristakieva, M. Lalev, I. Ivanova. Effect of sex-linked dwarf gene (dw) on exterior appearance, productive performance and egg characteristics in a colored broiler dam line. Biotechnology in animal husbandry, 31(2):163-175

ABSTRACT

The effect of sex-linked dwarf gene was investigated through comparison of dwarf hens with their full-sib normal sisters obtained by mating heterozygous males (DW/dw) to normal females (DW/_) from line F (used as maternal form for production of slow-growing colored chickens) with respect to the following traits: body weight, shank and keel length at 40 weeks of age, age of sexual maturity (at 50 % production), egg production, egg weight, feed intake, feed utilization, livability, fertility, hatchability and egg quality characteristics.

The results demonstrated that the dw gene caused statistically significant reduction of body weight by 29.15 %, shank length by 20.17 %, keel length by 7 % and egg weight by 5.72 % ($p < 0.001$). The hens with normal genotype attained sexual maturity 7 days earlier ($p < 0.001$), but nevertheless, rate of lay was similar to that of mini forms. There were no considerable differences between both genetic groups with respect to livability percentage over the production cycle. Dwarf hens consumed by 23.38 % less feed ($p < 0.01$) than normal sized hens and converted nutrients more efficiently by 12.69 % ($p < 0.05$). The presence of dw gene in hen genotype increased the eggshell percentage, reduced egg yolk and albumen weights and had no effect on their quality. The positive effect of the sex-linked dwarf gene on economically important traits – feed intake and feed conversion, hatchability of eggs set, is a prerequisite for the development of more efficient broiler breeder hens for production of slow-growing chickens.

Key words: Sex-linked dwarf gene, broiler breeder hens, production traits

ИЗГОТВИЛ:.....

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