



**Zeszyty Naukowe  
Uniwersytetu Przyrodniczego we Wrocławiu  
BIOLOGIA I HODOWLA ZWIERZĄT – BIOLOGY  
AND ANIMALS BREEDING, 2008, LVII, 567**



ISSN 1897–208X  
ISSN 1897–8223

## ABSTRACTS

**TI:** INFLUENCE OF DIFFERENTIATED LEVELS OF ISOMERISED POPPY SEED OIL ADDITION ON CONTENT AND COMPOSITION OF FATTY ACIDS OF SHEEP MILK FAT

**AU:** Bodkowski R.<sup>1</sup>, Patkowska-Sokoła B.<sup>1</sup>, Walisiewicz-Niedbalska W.<sup>2</sup>

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**LA:** Polish

**AB:** In the research, poppy seed oil was subjected to an alkaline isomerisation process and as a result conjugated dienes of *trans-10*, *cis-12* and *cis-9*, *trans-11* configuration in amounts 32.5 and 31.2%, respectively, were synthesized from linoleic acid C18:2 *cis-9 trans-12* contained in the oil.

An application of isomerised poppy seed oil (IPSO) in feeding dose for milking sheep caused a decrease in fat content in their milk, that was from 17 to 29 percentage points depending on an amount of supplement used. An addition if isomerised poppy seed oil profitably modified also a composition of fatty acids of milk fat causing an increase in a content of biologically active compounds of properties beneficial for health, i.e. isomers of linoleic acid *c9*, *t11* and *t10*, *c12*, and vaccenic acid, and decrease in saturated fatty acids level.

**DE:** sheep milk, *t10*, *c12* and *c9*, *t11* isomers, fat content, fatty acids composition

**SO:** Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 7–17.

**TI:** WINTER DIET OF THE CO-OCCURRING BARN OWL *TYTO ALBA* (SCOPOLI, 1769), TAWNY OWL *STRIX ALUCO* LINNAEUS, 1758, AND LONG-EARED OWL *ASIO OTUS* (LINNAEUS, 1758) IN SILESIAN LOWLAND (SW POLAND)

**AU:** Cichocki J.<sup>1</sup>, Gabryś G.<sup>1,2</sup>, Ważna A.<sup>1</sup>

**AD:** <sup>1</sup> Department of Biology, University of Zielona Góra

<sup>2</sup> Department of Zoology and Ecology, Wrocław University of Environmental and Life Sciences

**LA:** Polish

**AB:** The aim of the present work was to compare the prey species spectrum of three species of owls that co-occur in the mosaic environment of Silesian Lowland (SW Poland). The material for the study – the pellets – was collected at three sites in winter 2000/2001. The localities were: Chomiąza (church), the wintering site of barn owl *Tyto alba*, Owieczki (unused barn) – tawny owl *Strix aluco*, and Środa Śląska (park) – long-eared owl *Asio otus*. The aerial distance between the localities is: Chomiąza – Środa Śląska – 4 km, Chomiąza – Owieczki – 10 km, Środa Śląska – Owieczki – 6 km.

The remains of 914 prey individuals were found in the pellets. Eighteen species of mammals of four orders were identified: Insectivora, Rodentia, Chiroptera, Carnivora and six species of passerine birds (Passeriformes).

The species spectra of prey of barn owl and the long-eared owl are similar. However, the long-eared owl specializes in small rodents and the barn owl includes also shrews Soricidae among its prey. The diet of the tawny owl is more diverse. It hunts for rodents and insectivorous mammals and birds. The feeding preferences are reflected not only in the species spectrum of prey but also in the biomass of the consumed food. According to the biomass analysis, the rodents make the basic food of the three species of owls.

The analysis of the ecological groups of owls' prey living in various biotopes showed that 50% of the tawny owl prey were caught in the forest. The percentage of forest rodent species in the diet of the barn owl and the long-eared owl are very low. The tawny owl hunts also in open, wet and boggy habitats. Such biotopes are sometimes searched by the long-eared owl and the barn owl rarely flies there. The rodent species associated with open fields make the main part of the barn owl diet.

The species spectra of the owls' prey in the studied area show that the food niches of barn owl and the long-eared owl overlap. The tawny owl exploits a separate food niche from the niches of the other owl species.

The presence of weasel among the prey of the long-eared owl is reported here for the first time in Polish literature.

**DE:** food niche, pellets, Strigiformes, Micromammalia, Lower Silesia

**SO:** Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 19–30.

- TI: RELATIONSHIP AND INBRED IN HERDS OF SHEEP AND GOATS – COMPUTER PROGRAM FOR WINDOWS XP AND VISTA  
 AU: Chudoba K.  
 AD: Institute of Animal Breeding, Wrocław University of Environmental and Life Sciences  
 LA: Polish  
 AB: Presented a computer program designed for Windows XP and Vista, which measures the coefficient of relationship (kinship) and inbreed in herds of sheep and goats. The program is specifically dedicated to small and isolated herds, in which may occur danger of inbreeding depression. It may also be a useful tool to control intended inbreeding, in large breeding herds.  
 DE: relationship, inbred, computer program  
 SO: Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 31–38.
- TI: EFFECT OF DIETARY Zn, Fe, Mn AND Cu LEVEL AND SOURCE ON THE PRODUCTIVE, BIOCHEMICAL AND PHYSIOLOGICAL INDICES IN LACTATING SOWS AND THEIR OFFSPRING  
 AU: Fuchs B.<sup>1</sup>, Durosoy S.<sup>2</sup>, Guzek J.<sup>2</sup>  
 AD: <sup>1</sup>Department of Animal Nutrition and Feed Quality, Wrocław University of Environmental and Life Sciences  
<sup>2</sup>Pancosma SA, Le Grand–Sacconnex, Switzerland  
 LA: English  
 AB: The pregnant and lactating sows were fed diets supplemented with inorganic (control) or inorganic and organic compounds of, Zn, Fe, Mn and Cu. Organic forms of these metals comprised such compounds as amino acids or crystalline glycine chelates. Control animals were fed the same elements but in the inorganic form. Organic complexes were given in smaller quantities than mineral salts, based on assumption that they will be better utilized. During the experiment the productive, physiological and biochemical indices were analysed. Feeding both the pregnant and lactating sows with examined chelates increased the body weight of piglets at birth, improved feed intake during lactation what positively affected milking and in-turn improved the body weight of piglets at weaning as compared to the control group.  
 DE: trace minerals, glycinate, chelates, pregnant sows, lactating sows, piglets  
 SO: Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 39–56.
- TI: ARTHROPODS (*ACARI*, *ANOPLURA*, *COLEOPTERA*, *SIPHONAPTERA*) OF SMALL MAMMALS OF THE PODKARPACIE PROVINCE (SOUTH-EAST POLAND)  
 AU: Haitlinger R.  
 AD: Department of Zoology and Ecology, Wrocław University of Environmental and Life Sciences  
 LA: English  
 AB: 2870 arthropods belonging to 128 species were obtained from 1157 small mammals of 23 species of the Podkarpackie province. 62 species were found in Bieszczady Mts, 87 in Beskid Niski Mts, 49 Pogórze Przemysko-Dynowskie and 73 species in Nizina Sandomierska. Total, 2414 Acari of 100 species, 162 Anoplura of 7 species, 14 Coleoptera of 1 species and 280 Siphonaptera of 20 species were found in the Podkarpackie province. *Schizophthirius jaczewskii*, *S. pleurophaeus*, *Palaepsylla steini*, *Laelaps algericus*, *Haemogamasus hirsutosimilis*, *Lophioglysus liciosus*, *Gliricoptes muscardinus*, *Crocidurobia michaeli* and *Leptotrombidium silviticum* are very rare species in Poland. Most arthropod species were collected from *C. glareolus* (50), *S. araneus* (45), *A. agrarius* (43) and *M. arvalis* (40).  
 DE: *Acari*, *Anoplura*, *Coleoptera*, *Siphonaptera*, mammals, South-East Poland, faunistic  
 SO: Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 57–99.
- TI: ANALYSIS OF THE HAIR COAT OF DOGS OF COLLIE ROUGH BREED CONSIDERING ITS SPINNING PROPERTIES  
 AU: Jankowska D., Janczak M., Bodkowski R., Sadkowska E.  
 AD: Institute of Animal Breeding, Wrocław University of Environmental and Life Sciences  
 LA: Polish  
 AB: The hair of numerous mammals present a perfect material for textile production. Mainly natural hair coat of sheep, goats or lamas is used for that purpose. Nevertheless, also hair coming from other animal species, like dogs, may be used for yarn production.  
 Taking above into consideration we decided to conduct the research aiming at analysis of hair of collie dogs, paying attention to their physical properties, histological structure and warm-keeping properties of the yarn obtained from them.  
 Basing on conducted analysis it was determined that in hair coat of collie breed dogs fluff hair were predominant (about 75%) that influenced its high spinning properties. An average thickness of non-apart hair was 66 µm, while of fluff and involucure 49 and 90 µm, respectively. In turn, an endurance of non-apart fraction of hair was about 15 kg mm<sup>-2</sup>. Moreover, it was observed that a yarn from dogs' hair was characterized by better warm-

keeping properties comparing to sheep wool. Also differences between fluff and involucure hair in a range of histological structure of their epithelium-scale layer was determined.

DE: collie dog, hair coat, thickness, endurance, histological structure, warm-keeping

SO: Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 101–108.

TI: INVASIONS OF NEMATODES IN HORSES FROM DIFFERENT STUDS LUBUSKIE REGION AND LOWER SILESIA REGION

AU: Kamińska K.<sup>1</sup>, Geringer de Oedenberg H.<sup>1</sup>, Neuberger K.<sup>1</sup>, Pasicka E.<sup>1</sup>, Popiołek M.<sup>2</sup>, Płodzich J.<sup>1</sup>

AD: <sup>1</sup> Institute of Animal Breeding, Wrocław University of Environmental and Life Sciences

<sup>2</sup> Department of Zoology and Ecology, Wrocław University of Environmental and Life Sciences

LA: Polish

AB: The aim of study was evaluation of species horse's nematodes in three studs (different system of husbandry). It was analysed elementary parasites indices and checked efficacy of antyhelminthic treatments. Among 135 samples 41 % were infected by four species of nematodes: *Strongyloides westerii*, *Trichostrongylus axei*, *Parascaris equorum*, *Dictyocaulus arnfieldi*. Mean of faecal egg count was 160,5 EPG, range 100-900 EPG. The efficacy of Noromectin and Equest was very high – 100% whereas Abamitel Plus was 80%.

DE: horses, nematodes' infections, system of husbandry

SO: Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 109–118.

TI: SEXUAL AND MATERNAL BEHAVIOUR OF DAIRY GOATS BELONG TO DIFFERENT AGE GROUPS

AU: Kamińska K., Zatoń-Dobrowolska M.

AD: Department of Genetics and Animal Breeding, Wrocław University of Environmental and Life Science

LA: Polish

AB: Sexual and maternal behaviour is a very important factor, which influence on reproduction success of an individual and also whole population. In goats breeding many different factors determine a sexual behaviour, between other also animal age and its status in herd. The aim of this study was analyzed goats behaviour in relation to they age. Analysis included 70 females distributed to three age groups and 2 males. In results of the study was that most of the mounts made a dominant male, but most of them were without ejaculation. Buck, who has a lower hierarchy position get fewer mating, but they are much more efficient. Also the time of the mating was different between these two males – dominant had a shorter one. Behaviour of females differences between groups. Primiparas were more fearful, shy and slower establish relations with the male. Older goats were more experiences and faster became pregnant. The statistical important differences were affirmed between number of mounts and they length. The differences between groups were also in gestation length – in primiparas group it last 150 days, but in third group older goats it take only 141 days. Primiparas have only one kid in litter, in two other groups was mainly a twin births.

DE: goats, sexual behaviour, maternal behaviour

SO: Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 119–130.

TI: MARKETING ANALYSIS PROJECT OF AGROTURISTIC FARM

AU: Knecht D., Sitarz K.

AD: Institute of Animal Breeding, Wrocław University of Environmental and Life Sciences

LA: Polish

AB: Essential action while setting up enterprise is realisation of marketing analysis. It examines chosen market – its size, power of absorption, it also identifies competition and helps to define potential customer's profile. Conclusion of marketing analysis allows to establish if new business activity will create profit.

DE: agroturistic farm, marketing analysis

SO: Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 131–149.

TI: AN ASSESSMENT OF CONFORMATION OF COWS OF POLISH RED-WHITE BREED ON LOWER SILESIA

AU: Kuczaj M.<sup>1</sup>, Kupczyński R.<sup>2</sup>, Zygadlik K.<sup>1</sup>, Wieliczko A.<sup>1</sup>, Zielak-Steciwo A.<sup>1</sup>

AD: <sup>1</sup> Institute of Animal Breeding, Wrocław University of Environmental and Life Sciences

<sup>2</sup> Department of Animal Hygiene and Ichtiology, Wrocław University of Environmental and Life Sciences

LA: Polish

AB: The aim of the work was to confirm of reject a hypothesis that cows of Polish red-white breed of dual purpose performance with different contribution of hf cattle genes, reared in two poviats of Lower Silesia (Sudeten Submountain) in 2006–2007, differ in results of a type and conformation assessment. Cows were housed in region of Walbrzych (54 heads) and Jelenia Góra (92 heads). Three groups of cows with different contribution of hf cattle genes were distinguished. It appeared that the differentiation of those regions of Sudeten Submountain did not

influenced in a significant way the assessment of a type and body conformation of cows. However, significant relationships ( $p \leq 0.05$ ) were noted between genotype of cows and conformation features;  $\geq 50.1\%$  contribution of hf cattle genes improved height in a sacrum, capacity, legs and hooves built and a total score as well.

DE: dairy cows, conformation, management system, conservative husbandry

SO: Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 151–157.

TI: VALUE OF PRODUCTION PROGRESSION IN MILK YIELD OBTAIN THEREUPON IMPORT HF COWS

AU: Kuczaj M.<sup>1</sup>, Kupczyński R.<sup>2</sup>, Gałęcka M.<sup>1</sup>, Jawor P.<sup>3</sup>, Wieliczko A.<sup>1</sup>, Rząsa A.<sup>3</sup>

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LA: Polish

AB: The value of a production progress in milk yield of cows of hf breed as a result of cows' importing from France and Holland to Poland was assessed. Milk yield of imported mothers of cows was compared with the yield of their daughters and granddaughters born in Poland. Statistically significant differences were observed between mean values of milk features of the three generations of cows and within that generations. In the case of cows-grandmothers maintained in Dutch cowsheds, higher values of milk features in 1<sup>st</sup> 305-days lactation were noted, when compared with French cowsheds. Cows imported from France (mothers) were better than their age mates from Holland in a range of the yield of milk, protein and PFP and DFP indices. A generation of cows-daughters of French pedigree obtained higher values in a yield of milk, fat and protein and PFP and DFP indices comparing to their age mates of Dutch pedigree. It was observed that an import of dairy cows from EU was justified. Generally, cows imported from France were better as regards the value of milk performance, thus they should be preferred. Conditions of cows maintenance and feeding of an analysed herd assured and obtaining of fully satisfying production progress in milk features.

DE: cows, import, yield and chemical composition of milk, production progress

SO: Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 159–167.

TI: EVALUATION OF CONFORMATION TRAITS AND THEIR RELATIONSHIP WITH MILK PERFORMANCE OF POLISH HOLSTEIN-FRIESIAN BREED COWS OF BLACK-WHITE VARIETY

AU: Pawlina E.<sup>1</sup>, Pankowski M.<sup>2</sup>, Kruszyński W.<sup>1</sup>

AD: <sup>1</sup> Department of Genetics and Animal Breeding, Wrocław University of Environmental and Life Sciences

<sup>2</sup> TopAGROserwis Mostków

LA: Polish

AB: Research was conducted on 1943 promaparas cows of Polish Holstein-Friesian breed of black-white variety maintained in 25 herds in Greater Poland (Wielkopolska). An assessment of cows' conformation was done using a GLOBAL MAP mating programme. Assessed cows obtained mean notes close to biological optimum established for particular conformation traits. However, considerable differentiation of evaluations was observed within these traits. Calculated coefficients of phenotypic correlation point mostly positive and low relations between evaluations of particular conformation traits. Also indices of phenotypic correlation between evaluations of conformation traits and milk performance of cows low and positive were in most cases.

DE: dairy cattle, conformation, milk performance, correlations

SO: Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVI, 567, 169–176.

TI: THE EFFECT OF THE HUMINS CHALK ON THE QUALITY PARAMETERS OF EGGS AND CONCENTRATION OF CALCIUM AND PHOSPHORUS IN THE BLOOD SERUM OF LAYING HENS

AU: Tronina P.<sup>1</sup>, Korczyński M.<sup>2</sup>, Opaliński S.<sup>2</sup>, Dobrzański Z.<sup>2</sup>, Kaźmierska M.<sup>3</sup>

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<sup>2</sup> Chair of Animal Hygiene and Environment, Wrocław University of Environmental and Life Sciences

<sup>3</sup> Department of Animal Products Technology and Quality Management, Wrocław University of Environmental and Life Sciences

LA: Polish

AB: The aim of the investigation was to assess the influence of humins chalk, as a source of calcium in the feed, on the performance parameters, the quality parameters of eggs and the concentration of calcium and phosphorus in the blood serum of laying hens. The examination was made in the experimental room (precisely controlled conditions) where 36 laying hens (Lohmann Brown) were kept during 8 weeks in the battery system. During the experiment, the standard lighting program was applied; feed and water were available ad libitum. The birds were divided into 3 groups (12 hens in each of group) – control group (C) and two experimental groups (D-1 and D-2). Birds were feeding with the all-mash feed type J-297 prepared according to standard recipe, the content of calcium was 3,0%. The feed for the experimental groups contained the same amount of calcium as the feed for

the control group but 0,25% (D-1) and 0,5% (D-2) of Ca was supplemented by addition of humins chalk. The performance parameters (laying rate, weight of laid eggs, the feed intake) as well as the quality parameters of eggs were controlled and analyzed. Eggs for examinations were collected in 4 series, i.e. on 14<sup>th</sup> (I series), 28<sup>th</sup> (II), 42<sup>nd</sup> (III) and 56<sup>th</sup> (IV) day of the experiment. The concentrations of total calcium and inorganic phosphorous in the blood serum collected after 2<sup>nd</sup>, 6<sup>th</sup> and 8<sup>th</sup> week of experiment were analyzed.

The eggshells from both experimental groups were more resistant (breaking strength) than eggshells from group C, especially the samples collected during 2<sup>nd</sup> and 4<sup>th</sup> series of experiment ( $p \leq 0.05$ ). The eggs from groups D-1 and D-2 had higher weight but that fact was not statistically confirmed. The average concentrations of total calcium and inorganic phosphorus in the blood serum of hens from groups D-1 and D-2 were higher than in the blood serum of hens from control group, however, none of the obtained values exceed the physiological values.

DE: humine chalk, laying hens, performance, eggshell, blood serum  
SO: Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 177–187.

TI: THE PROSPECT OF PROFITABILITY OF FARMS KEEPING HORSES IN GÓRY SOWIE REGION

AU: Walkowicz E., Jodkowska E., Rajca M.

AD: Institute of Animal Breeding, Wrocław University of Environmental and Life Sciences

LA: Polish

AB: The aim of this research was to characterize agricultural farms in mountainous regions, taking into account their potential of increasing profitability by recreational usage of kept horses. The research was carried out on 23 farms, located in the mountains in the area of boroughs of Walim, Jedlina Zdrój, Głuszyca and Nowa Ruda. Enquiries were carried out, containing data about the farms and horses kept there. Total surface of agricultural grounds was 435 ha. In all farms the total of 126 horses were kept, mainly of no breed, representing both warm blood and cold blood breeds. The horses were only partly the source of income of the farms. It was shown that developing agrotourism and recreational horse riding, including guest accommodation and catering, seems to be the best solution to increase the profitability of the investigated farms.

DE: horses, agrotourism, mountainous farms, profitability  
SO: Zesz. Nauk. UP Wroc., Biol. Hod. Zwierz., LVII, 567, 189–196.