

## VOLUME 56, CONTENTS

## ORIGINAL PAPERS

XU Q.L., TANG G.W., ZHANG Q.L., HUANG Y.K., LIU Y.X., QUAN K., ZHU K.Y., ZHANG C.X.: The <i>FABP4</i> gene polymorphism is associated with meat tenderness in three Chinese native sheep breeds .....	1
KOHRAM H., VAHEDI V., NASROLLAHI S., FARAHAVAR A.: Superovulation following follicular synchronization with GnRH at random stages of the oestrous cycle in heifers .....	7
STRACHECKA A.J., GRYZIŃSKA M.M., KRAUZE M., GRZYWNOWICZ K.: Profile of the body surface proteolytic system in <i>Apis mellifera</i> queens .....	15
CZAUDEKNA M., KOWALCZYK J., MAROUNEK M., MICHALSKI J.P., ROZBICKA-WIECZOREK A.J., KRAJEWSKA K.A.: A new internal standard for HPLC assay of conjugated linoleic acid in animal tissues and milk .....	23
WANG J.H., WU C.C., FENG J.: Effect of dietary antibacterial peptide and zinc-methionine on performance and serum biochemical parameters in piglets .....	30
KŘÍŽOVÁ L., RICHTER M., TRÍNÁCTÝ J., ŘÍHA J., KUMPRECHTOVÁ D.: The effect of feeding live yeast cultures on ruminal pH and redox potential in dry cows as continuously measured by a new wireless device .....	37
RYBARCZYK A., PIETRUSZKA A., JACYNO E., DVOŘÁK J.: Carcass and meat quality traits of pig reciprocal crosses with a share of Pietrain breed .....	47
KORELESKI J., ŚWIĄTKIEWICZ S., ARCZEWSKA-WŁOSEK A.: The effect of different dietary potassium and chloride levels on performance and excreta dry matter in broiler chickens .....	53
LI Z.-H., ZLABEK V., VELÍŠEK J., GRABIC R., MACHOVÁ J., KOLAŘOVÁ J., LI P., RANDÁK T.: Antioxidant responses and plasma biochemical characteristics in the freshwater rainbow trout, <i>Oncorhynchus mykiss</i> , after acute exposure to the fungicide propiconazole .....	61
KUPREN K., MAMCARZ A., KUCHARCZYK D.: Effect of variable and constant thermal conditions on embryonic and early larval development of fish from the genus <i>Leuciscus</i> (Cyprinidae, Teleostei) .....	70
CZAUDEKNA M., KOWALCZYK J., KRAJEWSKA K.A.: Influence of dietary selenium level on the concentration of conjugated linoleic acid isomers, other fatty acids and amino acids in the liver and femoral muscles of rats .....	81
STROJNÝ L., BOMBA A., HIJOVÁ E., CHMELÁROVÁ A., MOJŽIŠOVÁ G., BERTKOVÁ I., KOPROVIČOVÁ J., POMFY M., STROMPFOVÁ V., MOLOKÁČOVÁ M.: Effects of a probiotic in combination with prebiotics on intestinal lactobacilli and coliforms and activities of bacterial enzymes in 1,2-dimethylhydrazine exposed rats .....	99
ZABOLEWICZ T., CZARNIK U., STRYCHALSKI J., PAREEK C.S., PIERZCHAŁA M.: The association between microsatellite <i>BM6438</i> and milk performance traits in Polish Holstein-Friesian cattle .....	107
KOUBA A., HAMÁČKOVÁ J., BUŘIČ M., POLICAR T., KOZÁK P.: Use of three forms of decapsulated <i>Artemia</i> cysts as food for juvenile noble crayfish ( <i>Astacus astacus</i> ) .....	114
CHRENKOVÁ M., FORMELOVÁ Z., CHRÁSTINOVÁ L., FLAK P., ČEREŠŇÁKOVÁ Z., LAHUČKÝ R., POLÁČIKOVÁ M., BAHELKA I.: Influence of diets containing raw or extruded peas instead of soybean meal on meat quality characteristics in growing-finishing pigs .....	119
ZELENKA J., HEGER J., KRÁČMAR S., MRKVICOVÁ E.: Allometric growth of protein, amino acids, fat and minerals in slow- and fast-growing young chickens .....	127
KOWALSKA A., ZAKĘŚ Z., JANKOWSKA B., DEMSKA-ZAKĘŚ K.: Effect of different dietary lipid levels on growth performance, slaughter yield, chemical composition, and histology of liver and intestine of pikeperch, <i>Sander lucioperca</i> .....	136

STRYCHALSKI J., CZARNIK U., PIERZCHAŁA M., PAREEK C.S.: Relationship between the insertion/deletion polymorphism within the promoter and the intron 1 sequence of the <i>PRNP</i> gene and milk performance traits in cattle .....	151
NĚMCOVÁ E., ŠTÍPKOVÁ M., ZAVADILOVÁ L.: Genetic parameters for linear type traits in Czech Holstein cattle .....	157
VOSTRÝ L., KRACÍKOVÁ O., HOFMANOVÁ B., CZERNEKOVÁ V., KOTT T., PŘIBYL J.: Intra-line and inter-line genetic diversity in sire lines of the Old Kladruher horse based on microsatellite analysis of DNA .....	163
DVOŘÁKOVÁ V., STUPKA R., ŠPRYSL M., ČÍTEK J., OKROUHLÁ M., KLUZÁKOVÁ E., KRATOCHVÍLOVÁ H.: Effect of missense mutation Asp298Asn in <i>MC4R</i> on growth and fatness traits in commercial pig crosses in the Czech Republic .....	176
DAI X.J., WANG C., ZHU Q.: Milk performance of dairy cows supplemented with rape seed oil, peanut oil, and sunflower seed oil .....	181
LIU B.Y., WANG Z.Y., WANG H.R., HU P., XU D., WANG Q.: Molecular profiling of bacterial species in the geese cecum .....	192
PTAK E., JAGUSIAK W., ŻARNECKI A., OTWINOWSKA-MINDUR A.: Heritabilities and genetic correlations of lactational and daily somatic cell score with conformation traits in Polish Holstein cattle .....	205
NESVADBOVÁ M., KNOLL A.: Evaluation of reference genes for gene expression studies in pig muscle tissue by real-time PCR .....	213
VOSTRÝ L., ČAPKOVÁ Z., PŘIBYL J., MACH K.: Analysis of Czech cold-blooded horses: genetic parameters, breeding value and the influence of inbreeding depression on linear description of conformation and type characters .....	217
NIWIŃSKA B., ANDRZEJEWSKI M.: Effect of the type of non-fibre carbohydrates in grass silage-based diets on in sacco ruminal degradability and protein value of lupin ( <i>Lupinus angustifolius</i> L. cv. Sonet) seeds ground to different particle sizes .....	231
LEDVINKA Z., ZITA L., HUBENÝ M., TŮMOVÁ E., TYLLER M., DOBROVOLNÝ P., HRUŠKA M.: Effect of genotype, age of hens and <i>K/k</i> allele on eggshell quality .....	242
ZAVADILOVÁ L., WOLF J., ŠTÍPKOVÁ M., NĚMCOVÁ E., JAMROZIK J.: Genetic parameters for somatic cell score in the first three lactations of Czech Holstein and Fleckvieh breeds using a random regression model .....	251
KIŠÁČ P., BROUČEK J., UHRINČAŘ M., HANUS A.: Effect of weaning calves from mother at different ages on their growth and milk yield of mothers .....	261
KŘÍŽOVÁ L., WATZKOVÁ J., TRINÁCTÝ J., RICHTER M., BUCHTA M.: Rumen degradability and whole tract digestibility of flavonolignans from milk thistle ( <i>Silybum marianum</i> ) fruit expeller in dairy cows .....	269
GÜMEN A., KESKIN A., YILMAZBAS-MECITOGLU G., KARAKAYA E., CEVIK S., BALCI F.: Effects of GnRH, PGF <sub>2α</sub> and oxytocin treatments on conception rate at the time of artificial insemination in lactating dairy cows .....	279
HEIDARI AMALE M., ZARE SHAHNE A., ABAVISANI A., NASROLLAHI S.: Effects of inhibiting nitric oxide synthase on cumulus expansion and nuclear maturation of sheep oocytes .....	284
D'ALTERIO G., CASELLA S., GATTO M., GIANESSELLA M., PICCIONE G., MORGANTE M.: Circadian rhythm of foot temperature assessed using infrared thermography in sheep .....	293
ČÍTEK J., ŘEHOUT V., HANUSOVÁ L., MÍKOVÁ A., JAŠKOVÁ I.: Polymorphisms in <i>CGIL4</i> , breeding value for somatic cell count and resistance to mastitis .....	301
WANG Y.X., ZHAN X.A., YONG D., ZHANG X.W., WU R.J.: Effects of selenomethionine and sodium selenite supplementation on meat quality, selenium distribution and antioxidant status in broilers .....	305

EBEID T., FAYOUD A., ABOU EL-SOUD S., EID Y., EL-HABBAK M.: The effect of omega-3 enriched meat production on lipid peroxidation, antioxidative status, immune response and tibia bone characteristics in Japanese quail .....	314
LAHO T., VÁRADYOVÁ Z., MIHALIKOVÁ K., KIŠIDAYOVÁ S., ADAMECHOVÁ Z., ČERTÍK M., JALČ D.: Prefermented cereals containing fungal gamma-linolenic acid and their effect on rumen metabolism <i>in vitro</i> .....	325
WEISZ F., URBAN T., CHALUPOVÁ P., KNOLL A.: Association analysis of seven candidate genes with performance traits in Czech Large White pigs .....	337
EL-GAMAL M.M.: The effect of depuration on heavy metals, petroleum hydrocarbons, and microbial contamination levels in <i>Paphia undulata</i> (Bivalvia: Veneridae) .....	345
BOZKURT Y., ÖĞRETMEYEN F., KÖKÇÜ Ö., ERÇİN U.: Relationships between seminal plasma composition and sperm quality parameters of the <i>Salmo trutta macrostigma</i> (Dumeril, 1858) semen: with emphasis on sperm motility .....	355
NAGY I., FARKAS J., GYOVAI P., RADNAI I., SZENDRŐ Z.: Stability of estimated breeding values for average daily gain in Pannon White rabbits .....	365
ABDOLMOHAMMADI A., ATASHI H., ZAMANI P., BOTTEMA C.: High resolution melting as an alternative method to genotype diacylglycerol O-acyltransferase 1 ( <i>DGAT1</i> ) K232A polymorphism in cattle .....	370
LOTFI A., AGHDAM-SHAHRYAR H., GHIASI-GHALEHKANDI J., KAIYA H., MAHERI-SIS N.: Effect of <i>in ovo</i> ghrelin administration on subsequent serum insulin and glucose levels in newly-hatched chicks .....	377
RZEWUSKA K., JAMROZIK J., ŻARNECKI A., STRABEL T.: Genetic parameters of test-day somatic cell scores for the first three lactations of Polish Holstein-Friesian cattle .....	381
KRÓL J., KOWALSKI R., DEMSKA-ZAKĘS K., HLIWA P., GLOGOWSKI J.: Proteolytic and anti-proteolytic activity in the seminal plasma of Eurasian perch ( <i>Perca fluviatilis</i> L.) during the spawning period .....	390
SKŘIVAN M., ENGLMAIEROVÁ M., DLOUHÁ G., BUBANCOVÁ I., SKŘIVANOVÁ V.: High dietary concentrations of methionine reduce the selenium content, glutathione peroxidase activity and oxidative stability of chicken meat .....	398
ŻYLA K., MIKA M., ŚWIĄTKIEWICZ S., KORELESKI J., PIIRONEN J.: Effects of phytase B on laying performance, eggshell quality and on phosphorus and calcium balance in laying hens fed phosphorus-deficient maize-soybean meal diets .....	406
VESELÁ Z., VOSTRÝ L., ŠAFUS P.: Linear and linear-threshold model for genetic parameters for SEUROP carcass traits in Czech beef cattle .....	414
TYROLOVÁ Y., VÝBORNÁ A.: The effects of wilting and biological and chemical additives on the fermentation process in field pea silage .....	427
POLICAR T., PODHOREC P., STEJSKAL V., KOZÁK P., ŠVINGER V., HADI ALAVI S.M.: Growth and survival rates, puberty and fecundity in captive common barbel ( <i>Barbus barbus</i> L.) under controlled conditions .....	433
GRELA E.R., MATRAS J., CZECH A.: Effects of supplemental phytase on nutrient digestibility and performance of sows fed diets with high or low native phytase activity .....	443
STEINER T., BORNHOLDT U., SAUER W.C., AHRENS F., JØRGENSEN H., MOSENTHIN R.: Use of the mobile nylon bag technique for determination of apparent ileal digestibilities of crude protein and amino acids in feedstuffs for pigs .....	451
MACHADO-NETO R., GRIGOLO I.H., MORETTI D.B., KINDLEIN L., PAULETTI P.: Intestinal histology of Santa Ines lambs fed bovine or ovine colostrum .....	465
BAO W.B., YE L., PAN Z.Y., ZHU J., ZHU G.Q., HUANG X.G., WU S.L.: Analysis of polymorphism in the porcine <i>TLR4</i> gene and its expression related to <i>Escherichia coli</i> F18 infection .....	475

SZCZEPKOWSKI M., ZAKĘŚ Z., SZCZEPKOWSKA B., PIOTROWSKA I.: Effect of size sorting on the survival, growth and cannibalism in pikeperch ( <i>Sander lucioperca</i> L.) larvae during intensive culture in RAS .....	483
TŮMOVÁ E., ENGLMAIEROVÁ M., LEDVINKA Z., CHARVÁTOVÁ V.: Interaction between housing system and genotype in relation to internal and external egg quality parameters .....	490
TRUJILLO-ORTEGA M.E., MOTA-ROJAS D., JUÁREZ O., VILLANUEVA-GARCÍA D., ROLDAN-SANTIAGO P., BECERRIL-HERRERA M., HERNÁNDEZ-GONZÁLEZ R., MORA-MEDINA P., ALONSO-SPILSBURY M., ROSALES A.M., MARTÍNEZ-RODRÍGUEZ R., RAMÍREZ-NECOECHEA R.: Porcine neonates failing vitality score: physio-metabolic profile and latency to the first teat contact .....	499
DUCHÁČEK J., PŘIBYL J., STÁDNÍK L., VOSTRÝ L., BERAN J., ŠTOLC L.: Stability of Aberdeen Angus breeding values in the Czech Republic from 1997 to 2007 .....	509
SATO S., OHNISHI C., UEMOTO Y., KOBAYASHI E.: Haplotype analysis within quantitative trait locus affecting intramuscular fat content on porcine chromosome 7 .....	521
AN X.P., WANG J.G., HOU J.X., ZHAO H.B., BAI L., LI G., WANG L.X., LIU X.Q., XIAO W.P., SONG Y.X., CAO B.Y.: Polymorphism identification in the goat <i>MSTN</i> gene and association analysis with growth traits .....	531
ENGLMAIEROVÁ M., BUBANCOVÁ I., SKŘIVAN M.: The effect of lycopene and vitamin E on the growth performance, quality and oxidative stability of chicken leg meat .....	538
ZHENG Y.C., LIN Y.Q., YUE Y., XU Y.O., JIN S.Y.: Expression profiles of myostatin and calpastatin genes and analysis of shear force and intramuscular fat content of yak <i>longissimus</i> muscle .....	545

## AUTHOR INDEX 2011

ABAVISANI A.	284	EBEID T.	314
ABDOLMOHAMMADI A.	370	EID Y.	314
ABOU EL-SOUD S.	314	EL-GAMAL M.M.	345
ADAMECHOVÁ Z.	325	EL-HABBAK M.	314
AGHDAM-SHAHRYAR H.	377	ENGLMAIEROVÁ M.	398, 490, 536
AHRENS F.	451	ERÇIN U.	355
ALONSO-SPILSBURY M.	499		
AN X. P.	529	FARAHAVAR A.	7
ANDRZEJEWSKI M.	231	FARKAS J.	365
ARCZEWSKA-WŁOSEK A.	53	FAYOUD A.	314
ATASHI H.	370	FENG J.	30
		FLAK P.	119
BAHELKA I.	119	FORMELOVÁ Z.	119
BAI L.	529		
BALCI F.	279	GATTO M.	293
BAO W.B.	475	GHIASI-GHALEHKANDI J.	377
BECERRIL-HERRERA M.	499	GIANESELLA M.	293
BERAN J.	509	GLOGOWSKI J.	390
BERTKOVÁ I.	99	GRABIC R.	61
BOMBA A.	99	GRELA E.R.	443
BORNHOLDT U.	451	GRIGOLO I.H.	465
BOTTEMA C.	370	GRYZIŃSKA M.M.	15
BOZKURT Y.	355	GRZYWNOWICZ K.	15
BROUČEK J.	261	GÜMEN A.	279
BUBANCOVÁ I.	398, 536	GYOVAI P.	365
BUCHTA M.	269		
BUŘIČ M.	114	HADI ALAVI S.M.	433
		HAMÁČKOVÁ J.	114
CAO B.Y.	529	HANUS A.	261
CASELLA S.	293	HANUSOVÁ L.	301
CEVIK S.	279	HEGER J.	127
CZARNIK U.	107, 151	HEIDARI AMALE M.	284
CZAUDERNA M.	23, 81	HERNÁNDEZ-GONZÁLEZ R.	499
CZECH A.	443	HIJOVÁ E.	99
CZERNEKOVÁ V.	163	HLIWA P.	390
		HOFMANOVÁ B.	163
ČAPKOVÁ Z.	217	HOU J.X.	529
ČEREŠŇÁKOVÁ Z.	119	HRUŠKA M.	242
ČERTÍK M.	325	HU P.	192
ČÍTEK J.	176, 301	HUANG X.G.	475
		HUANG Y.K.	1
D'ALTERIO G.	293	HUBENÝ M.	242
DAI X.J.	181		
DEMSKA-ZAKĘŚ K.	136, 390	CHALUPOVÁ P.	337
DLOUHÁ G.	398	CHARVÁTOVÁ V.	490
DOBROVOLNÝ P.	242	CHMELÁROVÁ A.	99
DUCHÁČEK J.	509	CHRASTINOVÁ Ľ.	119
DVOŘÁK J.	47	CHRENKOVÁ M.	119
DVOŘÁKOVÁ V.	176		

JACYNO E.	47	MAHERI-SIS N.	377
JAGUSIAK W.	205	MACH K.	217
JALČ D.	325	MACHADO-NETO R.	465
JAMROZIK J.	251, 381	MACHOVÁ J.	61
JANKOWSKA B.	136	MAMCARZ A.	70
JAŠKOVÁ I.	301	MAROUNEK M.	23
JIN S.Y.	544	MARTÍNEZ-RODRÍGUEZ R.	499
JØRGENSEN H.	451	MATRAS J.	443
JUÁREZ O.	499	MIHALIKOVÁ K.	325
		MICHALSKI J.P.	23
KAIYA H.	377	MIKA M.	406
KARAKAYA E.	279	MÍKOVÁ A.	301
KESKIN A.	279	MOJŽISOVÁ G.	99
KINDLEIN L.	465	MOLOKÁČOVÁ M.	99
KIŠAC P.	261	MORA-MEDINA P.	499
KIŠIDAYOVÁ S.	325	MORETTI D.B.	465
KLUZÁKOVÁ E.	176	MORGANTE M.	293
KNOLL A.	213, 337	MOSENTHIN R.	451
KOBAYASHI E.	521	MOTA-ROJAS D.	499
KOHRAM H.	7	MRKVICOVÁ E.	127
KÖKÇÜ Ö.	355		
KOLAŘOVÁ J.	61	NAGY I.	365
KOPROVIČOVÁ J.	99	NASROLLAHI S.	7, 284
KORELESKI J.	53, 406	NĚMCOVÁ E.	157, 251
KOTT T.	163	NESVADBOVÁ M.	213
KOUBA A.	114	NIWIŃSKA B.	231
KOWALCZYK J.	23, 81		
KOWALSKA A.	136	Öğretmen F.	355
KOWALSKI R.	390	OHNISHI C.	521
KOZÁK P.	114, 433	OKROUHLÁ M.	176
KRACÍKOVÁ O.	163	OTWINOWSKA-MINDUR A.	205
KRÁČMAR S.	127		
KRAJEWSKA K.A.	23, 81	PAN Z.Y.	475
KRATOCHVÍLOVÁ H.	176	PAREEK C.S.	107, 151
KRAUZE M.	15	PAULETTI P.	465
KRÓL J.	390	PICCIONE G.	293
KŘÍŽOVÁ L.	37, 269	PIERZCHAŁA M.	107, 151
KUCHARCZYK D.	70	PIETRUSZKA A.	47
KUMPRECHTOVÁ D.	37	PIIRONEN J.	406
KUPREN K.	70	PIOTROWSKA I.	483
		PODHOREC P.	433
LAHO T.	325	POLÁČIKOVÁ M.	119
LAHUČKÝ R.	119	POLICAR T.	114, 433
LEDVINKA Z.	242, 490	POMFY M.	99
LI G.	529	PŘIBYL J.	163, 217, 509
LI P.	61	PTAK E.	205
LI Z.-H.	61		
LIN Y.Q.	544	QUAN K.	1
LIU B.Y.	192		
LIU X.Q.	529	RADNAI I.	365
LIU Y.X.	1	RAMÍREZ-NECOECHEA R.	499
LOTFI A.	377	RANDÁK T.	61



RICHTER M.	37, 269	VILLANUEVA-GARCÍA D.	499
ROLDAN-SANTIAGO P.	499	VOSTRÝ L.	163, 217, 414, 509
ROSALES A.M.	499	VÝBORNÁ A.	427
ROZBICKA-WIECZOREK A.J.	23		
RYBARCZYK A.	47	WANG C.	181
RZEWUSKA K.	381	WANG H.R.	192
		WANG J.G.	529
ŘEHOUT V.	301	WANG J.H.	30
ŘÍHA J.	37	WANG L.X.	529
		WANG Q.	192
SATO S.	521	WANG Y.X.	305
SAUER W.C.	451	WANG Z.Y.	192
SKŘIVAN M.	398, 536	WATZKOVÁ J.	269
SKŘIVANOVÁ V.	398	WEISZ F.	337
SONG Y.X.	529	WOLF J.	251
STÁDNÍK L.	509	WU C.C.	30
STEINER T.	451	WU R.J.	305
STEJSKAL V.	433	WU S.L.	475
STRABEL T.	381		
STRACHECKA A.J.	15	XIAO W.P.	529
STROJNÝ L.	99	XU D.	192
STROMPFOVÁ V.	99	XU Q.L.	1
STRYCHALSKI J.	107, 151	XU Y.O.	544
STUPKA R.	176		
ŚWIĄTKIEWICZ S.	53, 406	YE L.	475
SZCZEPKOWSKA B.	483	YILMAZBAS-MECITOGLU G.	279
SZCZEPKOWSKI M.	483	YONG D.	305
SZENDRŐ Z.	365	YUE Y.	544
ŠAFUS P.	414	ZABOLEWICZ T.	107
ŠPRYSL M.	176	ZAKĘŚ Z.	136, 483
ŠTÍPKOVÁ M.	157, 251	ZAMANI P.	370
ŠTOLC L.	509	ZARE SHAHNE A.	284
ŠVINGER V.	433	ZAVADILOVÁ L.	157, 251
		ZELENKA J.	127
TANG G.W.	1	ZHAN X.A.	305
TRUJILLO-ORTEGA M.E.	499	ZHANG C.X.	1
TŘINÁCTÝ J.	37, 269	ZHANG Q.L.	1
TŮMOVÁ E.	242, 490	ZHANG X.W.	305
TYLLER M.	242	ZHAO H.B.	529
TYROLOVÁ Y.	427	ZHENG Y.C.	544
		ZHU G.Q.	475
UEMOTO Y.	521	ZHU J.	475
UHRINČAĚ M.	261	ZHU K.Y.	1
URBAN T.	337	ZHU Q.	181
		ZITA L.	242
VAHEDI V.	7	ZLABEK V.	61
VÁRADYOVÁ Z.	325		
VELÍŠEK J.	61	ŻARNECKI A.	205, 381
VESELÁ Z.	414	ŻYŁA K.	406