

Czech Journal of Animal Science

INSTRUCTIONS FOR AUTHORS

GENERAL INFORMATION	2
Reporting guidelines	3
Conflict of interest	3
Licence terms.....	3
Charges.....	4
The article processing charge.....	4
MANUSCRIPT SUBMISSION	4
MANUSCRIPT FILE LAYOUT	4
Manuscript body	4
Tables	4
Figures	5
Equations.....	5
Nomenclature.	5
Abbreviations	5
Units	5
Currency	5
Numbers.....	6
Statistics	6
MANUSCRIPT PARTS	6
Title	6
Abstract	6
Keywords.....	6
Introduction	6
Material and Methods	6
Results and Discussion	7
Conclusion.....	7
References.....	7
Supplementary material	9
PROOF-SHEETS.....	9
OFFPRINT.....	9
ABBREVIATIONS, UNITS AND TERMS	10
TABLE AND FIGURE EXAMPLES	13
SELF ASSESSMENT.....	15

GENERAL INFORMATION

Czech Journal of Animal Science publishes original research articles and invited review articles related to the scientific sections of genetics and breeding, physiology, reproduction, nutrition and feeds, technology, ethology, and economics of cattle, pig, sheep, goat, poultry, fish and other farm animal management. Papers are published in English. The authors are fully responsible for originality of the paper, its subject and formal correctness.

Contact information

Publisher: Czech Academy of Agricultural Sciences, Slezská 7, 120 00 Prague 2, Czech Republic
Editor-in-Chief: Prof. Ing. Eva Tůmová, CSc., Czech University of Life Sciences Prague, Prague, Czech Republic, e-mail: tumova@af.czu.cz
Executive Editors: Ing. et Ing. Karolina Tučková, e-mail: cjas@cazv.cz, Mgr. Zuzana Karlíková (DTP)
Administration, subscription: Czech Academy of Agricultural Sciences, e-mail: billing@cazv.cz

JOURNAL POLICIES

Double-blind peer review process

The journal uses double-blind peer review, which means that both authors and reviewers are anonymous to each other throughout the review process.

Peer-review process steps

- 1. Manuscript submission** – the corresponding author submits the manuscript to the journal, via online editorial system.
- 2. Editorial office assessment** – the manuscript's composition and arrangement is checked against the Instructions to Authors. The manuscript is checked for plagiarism ([CrossRef Similarity Check](#)).
- 3. Evaluation by the Editor-in-Chief (EIC)** – EIC checks that the manuscript is appropriate for the journal and is sufficiently original and interesting. If not, the manuscript may be rejected without being reviewed.
- 4. EIC may assign an Associate Editor (AE)** who will handle the peer review.
- 5. Invitation to Reviewers** – at least two reviewers are assigned by the Editor in Chief or the AE to a manuscript. As responses are received, further invitations are issued, if necessary, until at least 2 acceptances are obtained.
- 6. Response to invitations** – potential reviewers consider the invitation against their own expertise, conflicts of interest and availability. They then accept or decline. If possible, when declining, they might also suggest alternative reviewers.
- 7. Review is conducted** – the reviewer sets time aside to read the manuscript several times. The first read is used to form an initial impression of the work. If major problems are found at this stage, the reviewer may feel comfortable rejecting the manuscript without further work. Otherwise, he will read the manuscript several more times, taking notes so as to build a detailed point-by-point review. The review is then submitted to the journal, with a recommendation to accept (without change, minor revisions, major revisions and second review) or reject the manuscript.
- 8. The EIC or assigned AE** considers the returned reviews before making an overall decision. If the reviews differ widely, an additional reviewer is invited so as to get an extra opinion before making a decision. The AIC decides on the publication of papers, taking into account peer reviews, scientific importance, and recommendations of the Editorial Board members.
- 9. The decision is communicated.** The Executive Editor sends a decision email to the corresponding author including any relevant comments.

10. Next steps. If accepted, the manuscript is sent to production. If the article is rejected or sent back for either major or minor revision, the handling editor should include constructive comments from the reviewers to help the author improve the paper. If the paper was sent back to authors for revision, the reviewers should expect to receive a new version, unless they have opted out of further participation. However, where only minor changes were requested, this follow-up review might be done by the handling editor.

Reporting guidelines

Czech Journal of Animal Science endorses the use of an appropriate reporting guideline when writing a research manuscript to improve the accuracy, clarity and completeness of reporting. Meeting basic reporting requirements will greatly improve the value of a manuscript, may enhance its chances for eventual publication, and will contribute to trials reproducibility. A collection of reporting guidelines for research with animals is available at [MERIDIAN](#). For controlled trials and experiments with animals, the [REFLECT](#) (Reporting Guidelines for Randomized Controlled Trials in Livestock and Food Safety) checklist or [ARRIVE](#) checklist are recommended.

Pre-submission language editing

The journal emphasises the importance of high-quality scientific writing and clarity in presentation. The manuscript must be grammatically and linguistically correct. British English spelling should be used in the manuscripts (e.g. aetiology, caecum, faecal, haematology, utilise). Non-native English speaking authors are strongly advised to get their manuscript translated by translators cognisant in the subject matter or assessed by an English Editing Service prior to the submission and can be asked for submitting an English Editing Certificate.

Ethics

Authors should observe high standards with respect to publication ethics as set out by the [CAAS Journals Ethical Standards](#) which are in accordance with the Committee on Publication Ethics (COPE) standards, particularly the Code of Conduct and Best Practice Guidelines for Journal Editors. Falsification or fabrication of data, plagiarism, including duplicate publication of the authors' own work without proper citation, and misappropriation of the work are all unacceptable practices. By submission of a manuscript, the authors guarantee to the journal that the work described has not been published before; that it is not under consideration for publication elsewhere; and that its publication has been approved by all co-authors, if any, as well as by the responsible authorities at the institute where the work has been carried out.

Care and use of animals

Czech Journal of Animal Science requires all research animal activity to be performed in compliance with national and local laws and regulations, following ethical rules. The authors should state explicitly that institutional animal care and use approval was obtained before the commencement of the study. Authors should make it clear that experiments were conducted in a manner that avoided unnecessary discomfort to the animals by the use of proper management and laboratory techniques. Methods of euthanasia must be described, types and dosage of the anaesthetic agents must be specified. Experiments should be conducted in accordance with the principles and specific guidelines presented for example at http://www.who.int/tdr/publications/laboratory_practice/en/).

Conflict of interest

Any conflict of interests must be declared.

Licence terms

All the content of the articles is made freely available for non-commercial purposes, users are allowed to copy and redistribute the material, transform and build upon the material as long as the source is properly cited.

Open access

The journal provides immediate open access to their content on the principle that making research freely available to the public supports a greater global exchange of knowledge.

Charges

The article processing charge is EUR 320 (CZK 8000) plus VAT (payable upon acceptance). When submitting an article, the authors agree to this payment if the article is accepted for publication. See details at <https://www.agriculturejournals.cz/web/cjas/fees/>.

MANUSCRIPT SUBMISSION

Submit the manuscript electronically to the editorial system from the web page:

<https://www.agriculturejournals.cz/web/cjas/>.

The manuscript should be submitted in the following separate files:

- **Title Page** including the type of document (original paper, review), manuscript title, names of all authors in the order they will be published in the article (first name, middle name, last name), authors' affiliations, corresponding author's e-mail address, number of characters, acknowledgement, funding acknowledgement statement, conflict of interest declaration) ([templates](#)).
- **Manuscript file** including title, abstract, keywords, content/text of the article, references, tables and figures (see Manuscript file layout), **blinded** (follow the instructions below) ([templates](#)).
- **Figures – graphs** preferably in MS Excel (editable .xls or .xlsx); and images (photographs, schemes, diagrams, maps).
- **Cover letter** – explaining the significance and novelty of the work, the problem that is being addressed, and why the manuscript belongs in this journal.
- **Supplementary material**, if needed (for online publication only).
- **Authors' Declaration** form (downloadable from <https://www.agriculturejournals.cz/web/cjas/>).

The manuscript files should be blinded – the authors are fully responsible for the manuscript (also its revised versions and accompanying letter to reviewers) anonymisation.

- Names of authors, e-mail addresses and affiliations must be removed.
- Do not mention any dedications or acknowledgements.
- Do not add any page headers or footers that would identify you.
- Avoid, or try to minimise, any self-citation. If you have cited your own work, make sure you've referred to your own references in the third person, e.g. write "Novak and White (2007) have demonstrated", not "We have previously demonstrated (Novak and White 2007)".
- Remove all personal identifiers from your files such as Microsoft™ Word® documents and other attachments (figures, tables). Instructions how to remove the file personal identifiers can be found for example on [TheWindowsClub](#) website. Please, use the [Document Metadata Cleaner](#) to remove the hidden personal information in the revised (corrected) documents.

MANUSCRIPT FILE LAYOUT

Manuscript body. *Original paper* should not exceed 36 000 characters with spaces – including tables, references, and figure captions. *Review articles* extent is not limited. MS Word editor should be used for creating the text (Times New Roman, 12, lines 1.5; 2.5 cm margins on each edge of the page. Write the text in non-formatted style. Pages and lines of the manuscript must be numbered in the left-hand margin.

Tables must be formatted in MS Word (will not be accepted as an image file). Each item must be placed into a separate cell. Tables are to be numbered with Arabic numerals in the order in which they are included in

the text, and have a brief, but a self-explanatory title. Explanatory footnotes to tables should be indicated by superscript letters (or asterisks for significance values). Abbreviations or symbols used in the tables must be explained either in the table title or as a footnote. For explaining abbreviations or symbols used in tables, it is not possible to refer to the main text.

Figures should be restricted to material essential for documentation and understanding of the text and accompanied by a concise, descriptive legend. *Graphs* should be provided in MS Excel and supplied with original data (.xls or .xlsx data files) in order to be editable. Centred captions, parallel to axes, are used to indicate the measured attributes and their dimensions (in brackets). All *illustrative material* must be of publication quality. High-contrast photographs and autotypes must be submitted in .jpg/.tiff format at high resolution (min. 300 dpi). All photos, graphs, illustrations and diagrams must be referred to as a figure and numbered (Figure 1) continually according to the order in which they are included in the text, using Arabic numerals. Abbreviations or symbols used in the figures must be explained either in the figure title or as a footnote.

Duplicated documentation of data in both Tables and Figures is not acceptable.

Equations should be numbered using Arabic numerals (1). Each equation should be followed by a legend (where: y – refers to; x – indicates ...), explaining all variables and acronyms used, which were not explained previously. The equations should be further editable (use MathType, MS Word equations editor).

Nomenclature. Species names should be given in italics and in full (e.g. *Bos taurus*, *Sus scrofa*, *Equus caballus*, *Canis familiaris*) on their first appearance in the abstract, the main text, or in a table. The symbols used for genetic objects (e.g. gene, locus, allele, genotype, haplotype) should be italicised (e.g. *RYR1*, *ALB*, *SW1057*, *ETH5001*). The corresponding protein symbols should be in plain text (RYR1, ALB). Symbols used for human genes (in italics, capitals) and approved names (<https://www.genenames.org/>) should be used for genes in farm and domestic animals. Sequence variants in DNA and protein sequences (mutations, polymorphisms) should be described following the Recommendations for the description of sequence variants (<http://www.hgvs.org/mutnomen/recs.html>). The first three letters (only) in the symbol for a restriction endonuclease should be italicised (e.g. *EcoRI*, *BamHI*, *HindIII*, *Sau3AI*). Similarly, Taq as in *Taq* DNA polymerase should be italicised. All sequence data described in the paper should be submitted to the public sequence databases (GenBank/EMBL/DDBJ) and the appropriate accession numbers cited.

It may be worth checking the relevant genome databases (e.g. <http://varnomen.hgvs.org/>) for near-contemporary summaries of information on the species, chromosome(s) or gene(s) described in the manuscript.

Abbreviations should not be used in the title, key words, or to begin sentences, except when they are widely known throughout science (e.g., DNA, RNA) or are terms better known by their abbreviation (e.g., IgG). Abbreviations may be used in heads within the paper if they have been first defined within the text. This document [lists some abbreviations](#) with the definition that are recommended to be used in the journal. Generally, abbreviations are allowed when they help the flow of the manuscript. Spell out the term in full with the abbreviation following in parentheses the first time it is mentioned in the main text and use the abbreviation consistently thereafter. Plural forms of abbreviations do not require “s”. The abstract, text, each table, and each figure must be understood independently of each other. Therefore, abbreviations shall be defined within each of these parts of the manuscript.

Units. The SI International System of measurement units should only be used. The definitive SI website is that of the Bureau International des Poids et Mesures at <http://www.bipm.org/>. This document lists some most frequent units used in animal science studies. Use mg/l instead of mg·l⁻¹. Units must be indicated on each occurrence of numerical information and at the axes of all graphs. To express a unit of measurement, use a space between the number and the unit (5 g; 3 °C) except for percentages (37%). In a series of measurements, indicate the unit for each number (3 mm, 6 mm, and 8 mm). Abbreviate units only after a numeric value (24 h; several hours later).

Currency. Use euro or U.S. dollar as a currency in the computations and results. Currency codes based on the ISO 4217 Currency Code norm should be used (EUR, USD). When a monetary unit is referred to generally but

an amount is not included, it is spelt out in letters, except in tables (e.g. an amount in euros). In the text, use: EUR 30; EUR 30 per year per ha; EUR 10 million. In tables in case of the main unit for a column (table), use: (EUR), (million EUR).

Numbers. The decimal marker is a point (e.g., 0.1 m), while the thousand's separator is a space on either side of the decimal period (e.g., 25 562.987 05). The decimal point in all numbers between 1 and -1, except 0, must be preceded by 0 (e.g., 0.26). In general, use words for numbers one through nine, and use digits for 10 and over. For a series of numbers, any of which are over 10, use all digits. Do not use the MathType or MS Word Equations editor for symbols or variables written in the running article text (use the Symbol letters). Insert spaces around all signs (except slant lines) of operation (=, -, +, ×, >, or <) when these signs occur between two items.

Statistics. Describe statistical methods with enough detail to enable a knowledgeable reader to verify the reported results. Give details of randomisation and blocking, as well as the number of replications, blocks, or observations. Clearly distinguish between true replications and subsamples within a replication/treatment combination. Always specify the experimental design and indicate whether the design was balanced. When means (or medians) are followed by $\pm x$, indicate whether x refers to the standard deviation, standard error, or half the confidence interval; error bars should similarly be defined. Except for simple procedures (e.g., t -tests, one-way analysis of variance, simple linear regression), cite an appropriate and accessible statistical text and indicate the version of the SW used (Name, Version, Developer, Headquarters). In general, statistical techniques should be described in the Material and Methods section. The level of significance should be normally indicated by using the following conventional standard abbreviations for significance ($P < 0.05$, $P < 0.01$, and $P < 0.001$). In tables, levels of significance should be indicated by *, **, and ***, respectively. Statistical significance $P = 0.03$ can be also used in the text or tables. An indicator such as the pooled standard error, the residual standard deviation (RSD) or the root mean square error (RMSE) should be given for each variable in an additional column or line.

MANUSCRIPT PARTS

(Original paper)

Title should be short and informative; subtitles, commonly unknown abbreviations or acronyms, and numbering of serial articles (Part I, Part II, etc.) should be avoided.

Abstract is a short summary of the scientific paper including an outline of the objective, background, methods, results and conclusions of the paper (not exceeding 300 words). It should describe all the essential facts of the paper and basic numerical data including any statistical evaluation should be incorporated. Being published in world databases, the abstract is a significant part of the paper, and it is therefore recommended that it is precise. Abbreviations in the abstract can be used only when explained.

Keywords are words most aptly describing the studied problem. Five or six keywords not overlapping with those used in the manuscript title and abstract are recommended. Write them in singular, in lower case letters and separate them using semicolons.

Introduction should provide information on the present state of research in the field concerned, supported by selected references to literary sources. It briefly justifies the research, specifies the hypotheses to be tested, and gives the objective(s).

Material and Methods describe in detail all preliminary material, experiments conducted, their extent, conditions and course. In animal studies, the breed, age, sex, numbers of animals, health state and feeding regimen should be given along with the statement of the institutional Ethics Committee. Animals must be treated in consent with animal care and use regulations of the respective country and any unnecessary suffering and pain must be prevented. Methods of anaesthesia or euthanasia must be reported. All experimental animals should be used in compliance with the national laws and regulations of the research institutions of the authors. Good laboratory practice (see, for example, http://www.who.int/tdr/publications/laboratory_practice/en/) and ethical rules must be followed. Specify the mentioned products

used for the experiments by giving their exact name/type, name of the producer, and country of the producer's headquarters in parentheses. Trademarked or registered names should be capitalised. All original procedures that were used for the processing of experimental material and all analytical methods used for evaluation should also be detailed. The whole methodology is only to be described if it is an original one, in other cases, it is sufficient to cite the author of the method and to mention any particular differences. Data verifying the quality of acquired data should be indicated for the used methods. Methods of statistical processing including the software used should also be listed in this section. The methods and models of statistical analysis must be indicated, and sufficient statistical details given to allow replication of the experiment (see Statistics section).

Results and Discussion. Results obtained from the experiments, including their statistical evaluation and commentary, should be presented graphically or in table-form, and the author should comment on the results and confront them with data published elsewhere. The main findings should be emphasised at the end of Discussion.

Conclusion summarises the paper's main points and outlines its contribution to the present state of research in the field concerned.

References. The authors are responsible for the accuracy of their references. To be listed in the references section, the cited papers must be published or accepted for publication. Manuscripts submitted for publication but not yet accepted can be cited as "unpublished data" only in the text. Personal communications and unpublished data must not be included in the reference list. The authors are recommended to include references to papers from peer-reviewed periodicals only and avoid citations from non-available sources (reports, national journals, proceedings, theses, etc.). All references mentioned in the reference list have to be cited in the text, and vice versa. The list should not exceed 30 references (with the exception of Review articles). . If more than one paper by the same author(s) published in the same year is cited, the papers should be differentiated by YEARa, b, c both in the text and the reference list. The accuracy of spelling and completeness of cited names (e.g. Hackner SG, not Hackner S) should be checked in the Web of Science or PubMed databases. The Web of Science literature sources should only be referred to, the other sources just exceptionally.

In-text citations – the papers published by one or two authors are to be cited by their names, those published by three or more authors by the name of the first one et al. (but all authors' names should be listed in the reference list). The name(s) of the author(s) and year of publication are to be cited by including them in the text directly, e.g., ... as published by Roberts (2013); Roberts and Pickles (2014); Candida et al. (2016) or indirectly, citing name(s) and year of publication in parentheses (Berger et al. 2006; Coyot 2007; Ahlin and Lin 2009). Several papers cited together should be arranged according to the year of publication starting with the oldest one, divided by semicolons (Collins 1997; Chiodini 2000; Hermon-Taylor 2000a, b; Ayele et al. 2001; Grant et al. 2002a, b; Bull et al. 2003). Work that has not been accepted for publication should be listed in the text as follows: "Jones, Adam (Institution, City, State). Conversation with:/Letter to: Margaret Madison (Institution, City, State). Year Month Day." The author's own unpublished work should be listed in the text as "Smith, Adam (unpublished data; unreferenced; and if possible, add title, date, pagination and availability)". Personal communications and unpublished data must not be included in the Reference section.

All authors' names must be given in English transcription without national-specific letters, without diacritical signs of national Latin-based alphabets. Names in non-Latin alphabets should be transcribed according to international standards. The manuscript must be carefully checked to ensure that authors' names and publication years are exactly the same in the text as in the reference list. The citations should be limited to items really needed for placing the paper into a proper context.

Examples of references format

Guide providing assistance in formatting all kinds of references is available at:

<https://www.ncbi.nlm.nih.gov/books/NBK7256/>.

Journal article:

Elghandour MMY, Kholif AE, Hernandez J, Mariezcurrena MD, Lopez S, Camacho LM, Marquez O, Salem AZM. Influence of the addition of exogenous xylanase with or without pre-incubation on the in vitro ruminal fermentation of three fibrous feeds. *Czech J Anim Sci.* 2016 Jun 27;61(6):262-72.

Biegelmeyer P, Gulias-Gomes CC. Linkage disequilibrium, persistence of phase and effective population size estimates in Hereford and Braford cattle. *BMC Genet.* 2016 Feb;17(1):1-12.

Clark EL, Bush SJ, McCulloch MEB, Farquhar IL, Young R, Lefevre L, Pridans C, Tsang HG, Wu C, Afrasiabi C, Watson M, Whitelaw CB, Freeman TC, Summers KM, Archibald AL, Hume DA. A high resolution atlas of gene expression in the domestic sheep (*Ovis aries*). *PLoS Genet.* 2017 Sep 15;13(9): 38 p.

- [Journal article in a language other than English:](#)

Berrino F, Gatta G, Crosignani P. Valutazione casi-controlli dell'efficacia dello screening [Case-control evaluation of screening efficacy]. *Epidemiol Prev.* 2004 Nov;28(6):354-9. Italian.

- [In press article:](#)

Bhutta ZA, Darmstadt GL, Hasan BS, Haws RA. Community-based interventions for improving perinatal and neonatal health outcomes in developing countries: A review of the evidence. *Pediatrics.* Forthcoming 2022.

- [Electronic journal article:](#)

Happell B. The influence of education on the career preferences of undergraduate nursing students. *Aust Electron J Nurs Educ* [Internet]. 2002 Apr [cited 2007 Jan 8];8(1): [about 12 p.]. Available from: http://www.scu.edu.au/schools/nhcp/aejne/vol8-1/refereed/happell_max.html.

- [Article published electronically before print:](#)

Walsh B, Steiner A, Pickering RM, Ward-Basu J. Economic evaluation of nurse led intermediate care versus standard care for post-acute medical patients: Cost minimisation analysis of data from a randomised controlled trial. *BMJ.* 2005 Mar;330(7493):1-5. Epub 2005 Mar 9.

Book:

Porter V. *Goats of the world.* Ipswich, UK: Farming Press; 1996. 174 p.

NRC – National Research Council. *Nutrient requirements of dairy cattle.* 7th ed. Washington, DC, USA: National Academies Press; 2001. 408 p.

AOAC – Association of Official Analytic Chemists. *Official methods of analysis.* 15th ed. Washington, DC, USA: Association of Official Analytical Chemists; 1990. 1298 p.

- [Book chapter:](#)

Poppe C. Salmonella infections in the domestic fowl. In: Wray C, Wray A, editors. *Salmonella in domestic animals.* Wallingford, UK: CAB International; 2000. p. 107-32.

Sharma BS, Mount J, Karrow NA. Functional characterization of a single nucleotide polymorphism in the 5'-UTR region of the bovine toll-like receptor 4 gene. In: Pinard MH, Gay C, Pastoret PP, Dodet B, editors. *Animal genomics for animal health, Book series: Developments in biologicals, 132.* Basel, Switzerland: Karger Publishers; 2008. p. 331-6.

Other:

Treacher RJ, Hunt CW. Recent developments in feed enzymes for ruminant rations. *Proceedings of the Pacific Northwest Animal Nutrition Conference; 1996 Aug 37-54; Seattle, USA.* Seattle: ISP Press; 1996. 99 p.

Burnett EA. The influence of farmer stress and hardiness on adoption of best management practices in the Maumee watershed [dissertation]. [Columbus (OH)]: Ohio State University; 2014. 271 p.

Orchard JW, Alcott E, James T, Farhart P, Portus M, Waugh SR. Exact moment of a gastrocnemius muscle

strain captured on video. Br J Sports Med. 2002 Jun;36(3):222-3. Accompanied by: Video available at <http://www.bjsportmed.com>.

Supplementary material. Authors can include original, so far unpublished supplementary material (SM) which may comprise additional tables, data sets, figures, and other non-essential files. SM will appear only in the electronic version. SM will be published as submitted and will not be corrected or checked for scientific content, typographical errors or functionality. SM must be relevant to the parent manuscript, but the manuscript must stand alone without SM for those readers who will be reading the hard copy only. It should be submitted along with the main manuscript in a separate file and identified as “Supplementary file – for online publication only”. SM should be identified and mentioned in the main text as Supplementary Table S1, Supplementary Table S2, etc. for tables or Supplementary Figure S1, Supplementary Figure S2, etc. for figures or Supplementary Material S1, Supplementary Material S2, etc. for other material. SM should be submitted with the captions and source. Individual file sizes should be restricted to 10 Mb maximum (zipped or unzipped).

PROOF-SHEETS

Author proofs (PDF) will be sent by e-mail to the corresponding author. Author proofs should be read carefully and checked against the typed manuscript because of responsibility for proof-reading lies with the authors. Only errors originating during the printing phase can be corrected; factual changes in the manuscript after its acceptance for publication are not allowed. The comments feature in Adobe Acrobat may be used to indicate changes and insert comments within the proof PDF. Do not attempt to edit the content of the PDF. Proof-sheets with corrections should be sent back within 48 hours. In case the corrected proof-sheet is not delivered by the corresponding author within three days, the Publisher is justified to release the article without change.

OFFPRINT

All co-authors of the article registered in the journal editorial system will receive a free “electronic reprint” of the published paper in .pdf format. Free reprints are also available at <https://www.agriculturejournals.cz/web/cjas/>.

Compliance with these instructions is obligatory for all authors. If a manuscript does not comply with the above requirements, the editorial office will not accept it for consideration and will return it to the authors without reviewing.

Revised: December 14, 2021

ABBREVIATIONS, UNITS AND TERMS

The following abbreviations should be explained when used for the first time, units and terms may be used without definition in the Czech Journal of Animal Science:

List of recommended abbreviations

AA = amino acid	FCR = feed conversion ratio
ACTH = adrenocorticotropin	FSH = follicle-stimulating hormone
ADF = acid detergent fibre	GAPDH = glyceraldehyde 3-phosphate dehydrogenase
ADFI = average daily feed intake	GC = gas chromatography
ADG = average daily gain	GE = gross energy
ADL = acid detergent lignin	GH = growth hormone
AI = artificial insemination	GHRH = growth hormone-releasing hormone
AME = apparent metabolisable energy	G : F = gain-to-feed ratio
AMEn = nitrogen-corrected apparent metabolisable energy	GLC = gas-liquid chromatography
AMP, ADP, ATP = adenosine mono-, di-, or triphosphate	GLM = general linear model
ANOVA = analysis of variance	GnRH = gonadotropin-releasing hormone
ATPase = adenosine triphosphatase	h ² = heritability
BCS = body condition score	HEPES = N-2-hydroxyethyl piperazine-N'-ethanesulfonic acid
BLUP = best linear unbiased predictor	HPLC = high-performance (pressure) liquid chromatography
BSA = bovine serum albumin	IFN = interferon
BTA = <i>Bos taurus</i> autosome	Ig = immunoglobulin
BUN = blood urea nitrogen	IGF = insulin-like growth factor
BW = body weight	IL = interleukin
cDNA = complementary deoxyribonucleic acid	L : D = hours light : hours darkness in a photoperiod
CF = crude fibre	L*a*b* = lightness, redness, yellowness
CI = confidence interval	LH = luteinizing hormone
CLA = conjugated linoleic acid	LPS = lipopolysaccharide
CoA = coenzyme A	LSD = least significant difference
CP = crude protein	LSM = least squares means
CV = coefficient of variation	MALDI-TOF = matrix-assisted laser desorption/ionization time-of-flight
DE = digestible energy	MAS = marker-assisted selection
df = degrees of freedom	ME = metabolisable energy
DIM = days in milk	MIC = minimum inhibitory concentration
DM = dry matter	MP = metabolisable protein
DMI = dry matter intake	mRNA = messenger ribonucleic acid
DNA = deoxyribonucleic acid	MS = mass spectrometry
DNase = deoxyribonuclease	MUFA = monounsaturated fatty acids
dNTP = deoxynucleotide triphosphates	MUN = milk urea nitrogen
DP = digestible protein	n = number of samples
EAA = essential amino acid	ND = below detection limit, not detected
EBV = estimated breeding value	NDF = neutral detergent fibre
EDTA = ethylenediaminetetraacetate	NE = net energy
EE = ether extract	NEAA = nonessential amino acid
ELISA = enzyme-linked immunosorbent assay	
FA = fatty acid	
FAME = fatty acid methyl esters	

NEFA = nonesterified fatty acid
 NEG = net energy for gain
 NEL = net energy for lactation
 NEM = net energy for maintenance
 NFC = nonfibre carbohydrates
 NPN = nonprotein nitrogen
 NRC = National Research Council
 NS = nonsignificant
 NSC = nonstructural carbohydrates
 NSP = nonstarch polysaccharide
 OM = organic matter
 PAGE = polyacrylamide gel electrophoresis
 PBS = phosphate-buffered saline
 PCR = polymerase chain reaction
 PTA = predicted transmitting ability
 PUFA = polyunsaturated fatty acids
 QTL = quantitative trait loci
r = correlation coefficient
 R^2 = coefficient of determination
 RDP = rumen-degradable protein
 REML = restricted maximum likelihood
 RFLP = restriction fragment length
 polymorphism
 RIA = radioimmunoassay
 RNA = ribonucleic acid

Amino acids

Ala = alanine
 Arg = arginine
 Asn = asparagine
 Asp = aspartic acid
 Cit = citrulline
 Cys = cysteine
 Glu = glutamic acid
 Gln = glutamine
 Gly = glycine
 His = histidine
 Ile = isoleucine

Units and terms

base pair ... bp
 calorie (gram) ... cal
 celsius (with number) ... °C
 centimetre ... cm
 centimetre, square ... cm²
 centimorgan ... cM
 colony-forming unit ... cfu
 counts per minute ... cpm

RNase = ribonuclease
 rRNA = ribosomal ribonucleic acid
 RSD = residual standard deviation
 RUP = rumen-undegradable protein
 SCC = somatic cell count
 SCFA = short-chain fatty acid
 SCS = somatic cell score
 SD = standard deviation
 SDS = sodium dodecyl sulfate
 SE = standard error
 SEM = standard error of the mean
 SFA = saturated fatty acids
 SNF = solids-not-fat
 SNP = single nucleotide polymorphism
 SPC = standard plate count
 TBA = thiobarbituric acid
 TDN = total digestible nutrients
 TMR = total mixed ration
 Tris = tris(hydroxymethyl)aminomethane
 TS = total solids
 UFA = unsaturated fatty acids
 UHT = ultra-high temperature
 UV = ultraviolet
 VFA = volatile fatty acids

Leu = leucine
 Lys = lysine
 Met = methionine
 Orn = ornithine
 Phe = phenylalanine
 Pro = proline
 Ser = serine
 Thr = threonine
 Trp = tryptophan
 Tyr = tyrosine
 Val = valine

counts per second ... cps
 cubic centimetre ... cm³
 cubic millimetre ... mm³
 deci ... d (prefix)
 decilitre ... dl
 lux ... lx
 gram ... g
 gravity ... *g*

hectare ...ha
hour ... h
inside diameter ... i.d.
international unit ... IU
intramuscularly ... i.m.
intraperitoneally ... i.p.
intravenously ... i.v.
joule ... J
kilo ... k (prefix)
kilobase ... kb
kilobyte ... KB
kilocalorie ... kcal
kilo Dalton ... kDa
kilogram ... kg
litre ... l
logarithm (natural) ... ln
logarithm (base 10) ... log₁₀
lux ... lx
mega ... M (prefix)
metre ... m
metric tonne ... t
micro ... μ (prefix)
microgram ... μg
microlitre ... μl
milli ... m (prefix)
millilitre ... ml
millimolar (concentration) ... mM (= mmol/l)
millimole (mass) ... mmol
minute(s) ... min
molar (concentration) ... M
molar (mass) ... mol
mole (number, mass) ... mol
nano ... n (prefix)
nanogram ... ng
probability ... *P*
revolutions per minute ... rpm
second ... s
species ... sp.
subcutaneous ... s.c.
subspecies ... ssp.
volume ... vol
volume/volume ... vol/vol (use parenthetically)
weight/volume ... wt/vol (use parenthetically)

TABLE AND FIGURE EXAMPLES

 Table 1. Ingredients and chemical composition of the diets¹

Ingredient (g/kg)	Diet without alfalfa	Diet with alfalfa
Wheat	310	300
Maize	251.2	253.5
Soybean meal	265	250
Dried alfalfa	0	40
Rapeseed oil	40	40
Monocalcium phosphate	10.3	10
Sodium chloride	3	3
L-Lysine hydrochloride	2	2
DL-Methionine	1.5	1.5
Vitamin-mineral premix ²	5	5
Analysed nutrient content (g/kg)		
Dry matter	888.5	892.6
AME _N by calculation (MJ/kg)	10.97	10.46
Crude protein	162.5	164.1
Calcium	35.6	35.9
Available phosphorus	3.6	3.4

¹Other experimental diets were supplemented with 100 mg/kg or 200 mg/kg ascorbic acid

²Vitamin-mineral premix provided per kg diet: retinylacetate 3.0 mg, vitamin D3 3 000 IU, vitamin E 30 mg, niacin 25 mg, Ca pantothenate 8 mg, thiamine 2.0 mg, riboflavin 5 mg, pyridoxine 4 mg, folic acid 0.5 mg, biotin 0.075 mg, cobalamin 0.01 mg, choline Cl 250 mg, menadione 2.0 mg, betain 100 mg, butylated hydroxytoluene 7.5 mg, ethoxyquin 5.6 mg, butylhydroxyanisole 1 mg, DL-methionine 0.7 g, Mn 70 mg, Zn 50 mg, Fe 40 mg, Cu 6 mg, I 1 mg, Co 0.3 mg, Se 0.2 mg

Table 2. Pearson's correlation coefficients between selected laying performance, external and internal egg quality measurements

	Hen-day egg production	Feed intake	Egg weight	Eggshell weight	Shell strength	Shell thickness	Albumen weight
Feed intake	-0.06						
Egg weight	0.02	-0.08					
Eggshell weight	-0.09	-0.06	0.63***				
Shell strength	-0.07	0.09	-0.05*	0.37***			
Shell thickness	-0.05	-0.04	0.03	0.14***	0.10***		
Albumen weight	0.05	-0.02	0.92***	0.52***	-0.05*	0.02	
Yolk weight	-0.02	-0.16	0.73***	0.41***	-0.015***	0.01	0.43***

Significant at *($P < 0.05$), ***($P < 0.001$)

Table 3. Physical characteristics of breast meat

Characteristic	I	FRI	FRII	SEM	P
pH ₄₅	6.6	6.4	6.6	0.06	NS
pH ₂₄	5.6 ^b	5.9 ^a	5.7 ^{ab}	0.04	0.043
Colour of raw meat					
Lightness	55.6	56.0	53.6	0.71	NS
Redness	-2.0	-2.7	-2.8	0.16	NS
Yellowness	4.0	4.2	3.6	0.46	NS
Shear force of boiled meat (N)	34.2 ^a	29.2 ^b	27.1 ^b	0.82	0.003

FRI = free-range 8.30 chickens per m²; FRII = free-range 4.15 chickens per m²; I = indoor housing; pH₄₅ = pH 45 min after slaughter; pH₂₄ = pH 24 h after slaughter

^{a,b}Means with different superscripts differ significantly

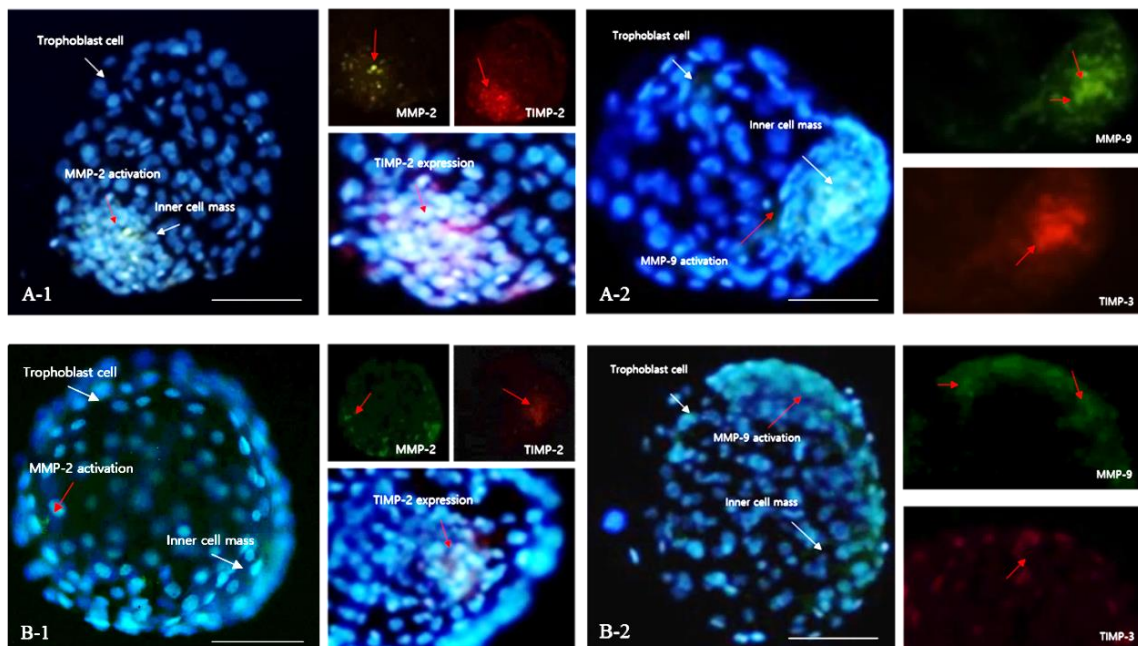


Figure 3. Expression site and surface analysis of matrix metalloproteinases (MMPs) and tissue inhibitors of metalloproteinases (TIMPs) in blastocysts produced using serum-free and serum-containing media (A, B) immunofluorescence analysis of: (A-1) expression patterns of MMP-2 and TIMP-2 in *in vitro* fertilised embryo; (A-2) expression patterns of MMP-9 and TIMP-3 in *in vitro* fertilised embryos; (B-1) expression patterns of MMP-2 and TIMP-2 in embryos obtained using serum-free medium; (B-2) expression patterns of MMP-9 and TIMP-3 in serum-free and serum-containing culture media. The surrounding cells of the blastocyst are trophoblasts, and the aggregated cells constitute the inner cell mass. Green fluorescence shows the expression of MMPs, and red fluorescence shows the expression of TIMPs. The nuclei of embryos were stained using Hoechst 33258. Red arrows indicate the protein distribution in cells

SELF ASSESSMENT

Self-assessment questions to be answered by the authors before submission of the manuscript:

1. Is the information to be published new, and thus worthy of publication?
2. Is novelty expressed in the title and discussed properly in the discussion?
3. Is the hypothesis sound and original?
4. Were the experiments well-designed and appropriate methods used?
5. Is the paper written with essential clarity?
6. Has the English been validated by a native speaker knowledgeable about the field?
7. Is the list of references comprehensive, and are all the references relevant?
8. Where appropriate, are the results statistically significant?
9. Are the titles and legends for tables and figures complete and self-explanatory?
10. Were the Instructions for Authors thoroughly followed?

Please do not submit the manuscript if any of the above questions have been answered in the negative. While something can be learned from most review processes, the reviewers cannot be expected to provide extensive help with corrections, or to educate the authors.