

The Professional Animal Scientist Information for Contributors

The Purpose of ARPAS and the Journal

The purpose of the American Registry of Professional Animal Scientists (ARPAS) is to provide certification of professional status for qualified members of the society, to strengthen animal sciences among the professions, and to promote animal sciences and the profession of animal scientists. Continual education is required of all certified professionals to keep abreast of rapidly changing technology in their fields. The official publication of ARPAS, *The Professional Animal Scientist (PAS)*, serves as a vehicle for publishing manuscripts on applied technology, reviews on contemporary issues, case studies, and technical notes.

Who May Publish

At least one author of each manuscript must be a member of ARPAS, American Society of Animal Science, Equine Science Society, Poultry Science Association, American Dairy Science Association, or American Meat Science Association, or the paper must be sponsored by a member of the Registry and have the approval of the Governing Council.

What May Be Published

Manuscripts may be submitted as technical reviews, original research, case studies, commentaries, or procedures on important topics that are ready or nearly ready for application. The papers must be based on adequately replicated experiments that relate to applied problems in the animal sciences, including dairy, poultry, meat animals, horses, and other species. Data upon which papers are based may be from original unpublished research, case studies, field trials, scientific literature, or a combination thereof. Data gleaned from the literature are acceptable only if pooled for the purposes of analyzing, summarizing, and interpreting. The original author and publisher must approve any exceptions to this rule.

Reviews and General Policies

Manuscripts will be subject to critical review by the Editorial Board or others designated by the editor-in-chief. Manuscripts will be returned to the authors for needed revision. Papers not suitable for publication will be returned to the author with an explanation of reasons for unacceptability. Papers should be reviewed and approved internally prior to submission. Note: PAS papers are considered refereed publications.

Care and Use of Animals

Authors must make it clear that experiments were conducted in a manner that avoided unnecessary discomfort to the animals by use of proper management and laboratory techniques. Experiments shall be conducted in accordance with the principles and specific guidelines presented in *Guidelines for the Care and Use of Agricultural Animals in Agricultural Research and Teaching, First Revised Edition* (Federation of Animal Science Societies, 1111 North Dunlap Avenue, Savoy, IL 61874); and, if applicable, *Guide for the Care and Use of Laboratory Animals* (United States Department of Human Health and Services, National Institutes of Health, Publication Number 85-23, 1985). Methods of euthanizing experimental animals must be described in the text. In describing surgical procedures, the type and dosage of the anesthetic agent must be specified. The PAS Editor-in-Chief may refuse to publish manuscripts that are not compatible with these guides. If rejected solely on that basis, however, the manuscript may be resubmitted for reconsideration when accompanied by a written verification that a committee on animal care in research has approved the experimental design and procedures involved.

Page Charges

There will be a charge of US \$105 per journal page or fraction thereof for publication, payable when author proofs are returned to the Association Headquarters. Article offprints can be ordered when proofs are returned to Headquarters. The pricing schedule is on the page charge form. There are no gratis offprints. The Governing Council may waive the page charges on papers sponsored by the Council.

GENERAL STYLE AND FORM

The format of *The Professional Animal Scientist* will be 8.5- by 11-inch pages. Manuscripts must be typed, with lines and pages numbered consecutively, using Times New Roman font at 12 points. All special characters should be inserted using the symbol palette available in this font. Tables and figures should be placed in separate sections at the end of the manuscript (not placed in text). Tables should be kept to a minimum and should not include irrelevant or superfluous data. Tables must include sufficient information to allow the reader to understand the implications of the tabular data.

The use of first person should be minimized. The text and all supporting materials must use American spelling and usage as given in *The American Heritage Dictionary*, *Webster's Third International Dictionary*, or the *Oxford American English Dictionary*. Authors should follow the style and form recommended in *Scientific Style and Format*, *The CSE Manual for Authors, Editors, and Publishers*, Seventh Edition (Council of Science Editors, 12100 Sunset Hills Road, Suite 130, Reston, VA 20190).

Title Page

Each manuscript shall begin with a title page containing only the following information. Authors must provide a **running head** (short title) of not more than 55 letters. The running head is flush left, in italics, and shall appear on the top of the title page. No abbreviations are to be used. The **title** of the paper must be in boldface with the first letter of each important word capitalized. The title must contain no abbreviations, and numbers must be given in words rather than in numerals (e.g., One-Week-Old Calves). **Names of authors** shall be in mixed case with a space between initials. **Affiliations** shall provide the author's departments and institutions, state, and zip code. Do not give authors' titles, positions, or degrees. The title page shall include all **contact information** of the corresponding author: name, full address, telephone, fax number, and e-mail address. **Footnotes** may be used to provide supplementary information such as present addresses, acknowledgment of grants, and experiment station or journal series numbers.

Abstract and Key Words

The abstract should not exceed 250 words and should include explicit conclusions. Do not use footnotes. The abstract shall be followed by up to 5 key words or phrases. These should include important words from the title and the running head.

Introduction

The introduction (approximately 250 to 350 words) should inform the reader of the background necessary for understanding the significance of the information presented in the paper. Previous work on the topic should be summarized, and the objective of the current research must be clearly stated.

Materials and Methods

All sources of products, equipment, and chemicals used in the experiments must be specified in parentheses. Trade names are to include trademark symbols, models, and names and addresses of the manufacturers. Animal care guidelines should be referenced if appropriate. A discussion of the statistical analysis methods with sufficient detail must be included so that others could repeat the analysis. Specify the factors tested in the analysis or the statistical model employed. In model statements, upper case letters should be used for fixed effects and lower case letters for random effects. Nonsignificant differences ($P > 0.05$ and < 0.10) may be discussed using such terms as "numerical differences," "trends," etc. Nonsignificant probability levels can be presented and

discussed if properly qualified so that the reader is not misled; it is desirable to give the probability level if not $P < 0.05$ or $P < 0.01$. The authors must provide the appropriate citation in the text for all statistical methods used.

Results and Discussion

The paper should contain a combined Results and Discussion section (not separate Results and Discussion sections), which presents the results in brief and points out the significant conclusions to be drawn from the data and particularly the application to the industry.

Implications

This section is required and should summarize the additional information in one paragraph (maximum of 150 words). The purpose of this section is to enhance application of results; highlight variables that may interact; add emphasis to biological, economic, or societal values of the researched or reviewed alternatives; and possibly suggest additional research.

Acknowledgments

An Acknowledgments section, if included, follows the Implications section. Acknowledgments of individuals must include affiliations but not titles, such as Dr., Mr., or Ms.

Literature Cited

Citations must refer to authors of the references by last names and year published. Literature cited shall not be numbered either in the Literature Cited section or in the body of the manuscript. When 2 or more citations are included in a grouping within a sentence, the citations within the grouping are arranged in chronological order. Multiple citations for a given year are further arranged alphabetically. When a citation has more than 2 authors, cite the reference throughout the text with "et al." following the last name of the first author. When the same authors have 2 references with different dates, cite them together in the text (e.g., Brown et al., 1998, 2002). If 2 papers abbreviate identically in the text, place a letter after the date in the text and in the citation in Literature Cited. Letters should not be included unless the text citations are identical. Lettered references should be listed in strict alphabetical order based on authors' last names; if all names are identical, the titles of the articles dictate alphabetical order. Work that has not been published shall be listed in the text as "J. E. Jones (1981, Institution, address, city, state, personal communication)." The author's own unpublished work should be listed in the text as "(J. E. Jones, unpublished data)." Personal communications and unpublished data are not included in the Literature Cited section. In the Literature Cited section, list the references by authors in alphabetical order. Journals shall be abbreviated according to the conventional abbreviations given in *Serial Sources for the BIOSIS Data Base* (BioSciences Information Service, 2100 Arch St., Philadelphia, PA). Examples follow:

- Chester-Jones, H., D. Ziegler, R. Larson, B. Ziegler, and J. Linn. 2006. Performance of Holstein dairy heifers full vs. limit fed whole-shelled corn and protein pellet diets differing in fiber levels. *J. Dairy Sci.* 89(Suppl. 1):366. (Abstr.)
- Cranston, J. J., J. D. Rivera, M. L. Galyean, M. M. Brashears, J. C. Brooks, C. E. Markham, L. J. McBeth, and C. R. Krehbiel. 2006. Effects of feeding whole cottonseed and cottonseed products on performance and carcass characteristics of finishing beef cattle. *J. Anim. Sci.* 84:2186.
- Lawrence, J. D. 2004. ISU Economics Dept. Chartbook, Hog prices monthly average and seasonality index. <http://www.econ.iastate.edu/outreach/agriculture/periodicals/chartbook/chartbook2/Hogs.html> Accessed June 13, 2005.
- NRC. 2001. Nutrient Requirements of Dairy Cattle. 7th rev. ed. Natl. Acad. Press, Washington, DC.
- Saylor, W. W., J. T. Sims, G. W. Malone, and M. F. Lavahun. 2001. Use of phytase and high-available phosphorus corn in broiler diets: Impact on litter phosphorus levels and solubility. p. 43 in Proc. 2001 Maryland Nutr. Conf., Univ. Maryland, College Park.
- Van Soest, P. J. 1994. Nutritional Ecology of the Ruminant. 2nd ed. Comstock Publ., Ithaca, NY.

Headings

Major headings are centered, boldface, all uppercase, and consist of ABSTRACT, INTRODUCTION, MATERIALS AND METHODS, RESULTS AND DISCUSSION, IMPLICATIONS, ACKNOWLEDGMENTS (optional), and LITERATURE CITED.

Subheadings

First subheadings are placed on a separate line, begin at the left margin, the first letter of each important word is capitalized, and the headings are boldface and italic. Second subheadings begin the first line of a paragraph. They are indented, boldface, italic, and followed by a period.

Tables

Tables must be created using the **MS Word table feature** and inserted in the manuscript after the Literature Cited section. Each table must be presented on a separate page. The table title shall begin with "**Table 1.**" followed by the title of the table. Only the first letter of the first word in the table title shall be capitalized. The title shall be in boldface font and not followed by a period. Units of measure for each variable measured must be indicated. Horizontal and vertical lines to separate sections within the body of the table are not permitted. A horizontal line is used to separate the column titles from the body of the table or to include several columns under a single heading.

Each table must stand alone. Therefore, abbreviations not found in the ***Information for Contributors*** must be defined in each table. Abbreviations must match those used in text. **Footnotes to tables shall be superscript numbers**; superscript letters shall be used to indicate means separations. Consult a recent issue of *The Professional Animal Scientist* for examples of tables.

All tables must present original material. If an author wishes to present data already published in tabular form, the author must obtain copyright permission to reproduce the table, even when the format of the table submitted with the manuscript is different than the table already published.

Figures

Refer to <http://www.fass.org/authinst.htm> for suggestions on preparing figures. All illustrations must be cited in the text in numerical order.

Figure captions must include the figure title and legend and be placed on a page separate from the figure. The format is "**Figure 1.**" followed by the title and text of the caption. Abbreviations must be identical to those used in the text and be defined in each caption. Generally, material already included in tables should not be repeated in the figure. Each figure should be independently comprehensible without reference to text.

Computer-generated figures are acceptable if they meet journal specifications for line width, symbols, and layout. See the above Web site for further instruction. Figures must be uniform in scale and in line density. On line graphs, symbols must not contain other symbols within them (e.g., a circle within a triangle) to indicate data points, because those symbols will fill in after reduction. Symbols should be defined in the caption; when the symbol designation is a part of the figure, it shall appear within the axes but outside the data field. Small dot or line patterns or gray shading will not reproduce evenly and must not be used. The numeral 0 must precede decimals.

If an author desires to reprint a figure already published elsewhere, he must first obtain copyright permission to use the figure and is responsible for forwarding the permissions letter to the editorial office.

MISCELLANEOUS USAGE NOTES

Abbreviations

Abbreviations shall not be used in the title, section headings, key words, or at the beginning of sentences. The suitability of abbreviations is evaluated by the reviewers, editor-in-chief, and technical editor. When standard abbreviations or conventions for abbreviations exist in the discipline, these should be followed. Terms used only twice must not be abbreviated. All author-coined abbreviations are to be defined the first time they are mentioned with the abbreviation following in capital letters, boldface, and in parentheses. Such abbreviations shall be used consistently thereafter. The units of the manuscript—abstract, text, each table, and each figure—read independently of each other; therefore, abbreviations shall be defined within each unit of the manuscript.

The abbreviations in Table 1 may be used without definition in *The Professional Animal Scientist*. Plural abbreviations do not require an ending "s." Chemical symbols and 3-letter abbreviations for amino acids do not need definition. Units of measure should be abbreviated as listed in the *CRC Handbook for Chemistry and Physics* (CRC Press, 2000 Corporate Blvd., Boca Raton, FL 33431) and do not need to be defined.

Table 1. Abbreviations to be used without prior definition in *The Professional Animal Scientist*

ACTH	adrenocorticotrophic hormone	FCM	fat-corrected milk	PAGE	polyacrylamide gel electrophoresis
ADF	acid detergent fiber	FFA	free fatty acid	PBS	phosphate-buffered saline
ADFI	average daily feed intake	FSH	follicle-stimulating hormone	PCR	polymerase chain reaction
ADG	average daily gain	g	gram	pfu	plaque-forming units
ADIN	acid detergent insoluble nitrogen	g	gravity	ppm	parts per million
ADL	acid detergent lignin	GE	gross energy	Publ.	Publication
ADP	adenosine diphosphate	G:F	gain-to-feed ratio	PUFA	polyunsaturated fatty acid
AI	artificial insemination	GLC	gas-liquid chromatography	QG	quality grade
AIA	acid insoluble ash	GLM	general linear model	Q	correlations coefficient
ANOVA	analysis of variance	h	hour	R ²	coefficient of multiple determination
AOAC	Association of Official Analytical Chemists	HEPES	N-(2 hydroxyethyl)piperazine-N'-2-ethanesulfonic acid	RDP	rumen-degradable protein
ARS	Agricultural Research Service	HPLC	high-performance (high pressure) liquid chromatography	Rep.	Report
Assoc.	Association	i.d.	inside diameter	RIA	radioimmunoassay
ATP	adenosine triphosphate	Ig	immunoglobulin	RNA	ribonucleic acid
avg	average (use only in tables, not in the text)	IGF	insulin-like growth hormone	rpm	revolutions per minute
B cell	bursal-derived, bursal-equivalent derived cell	i.m.	intramuscular	RUP	rumen-undegradable protein
BCS	body condition score	Inst.	institute	s	second
BHBA	β -hydroxybutyrate	i.p.	intraperitoneal	s.c.	subcutaneous
BLUP	best linear unbiased prediction	IU	international unit	SCC	somatic cell count
bp	base pair	IVDM	in vitro dry matter disappearance	SD	standard deviation
BSA	bovine serum albumin	kb	kilobase pair(s)	SDS	sodium dodecyl sulfate
Bull.	Bulletin	kDa	kilodalton	SE	standard error
BUN	blood urea nitrogen	KPH	kidney, pelvic, heart fat	SEM	standard error of the mean
BW	body weight	L	liter	SRBC	sheep red blood cells
C	cytosine	LD ₅₀	50% lethal dose	St.	Station
cal	calorie	LM	longissimus muscle	Suppl.	supplement
cDNA	complementary DNA	m	meter	Symp.	symposium
cfu	colony-forming units	μ	micro	TBA	thiobarbituric acid
Circ.	Circular	M	molar	T cell	thymic-derived cell
CoA	coenzyme A	ME	metabolizable energy	TDF	total dietary fiber
Coll.	College	MHC	major histocompatibility complex	TDN	total digestible nutrients
Conf.	conference	Misc.	miscellaneous	Tech.	technical
Congr.	Congress	Mongr.	Monograph	TLC	thin layer chromatography
CP	crude protein	mRNA	messenger ribonucleic acid	TME	true metabolizable energy
cpm	counts per minute	min	minute	TME _n	nitrogen-corrected true metabolizable energy
CV	coefficient of variation	mo	month	TMR	total mixed ration
DCAD	dietary cation-anion difference	MS	mean square	Tris	tris(hydroxymethyl)aminomethane
DE	digestible energy	N	normal	TSAA	total sulfur amino acids
DEAE	(dimethylamino)ethyl	Natl.	national	U	uridine
df	degree(s) of freedom	NDF	neutral detergent fiber	Univ.	University
DHI	Dairy Herd Improvement	NE	net energy	USDA	United States Department of Agriculture
DIM	days in milk	NE _g	net energy for gain	UV	ultraviolet
DM	dry matter	NE _l	net energy for lactation	VFA	volatile fatty acid
DMI	dry matter intake	NE _m	net energy for maintenance	vol	volume
DNA	deoxyribonucleic acid	No.	number (use only in tables, not in the text)	vol/vol	volume to volume
DP	dressing percentage	NPN	nonprotein nitrogen	wk	week
Ed.	Edition, Editor(s)	NRC	National Research Council	wt	weight (use only in tables)
EDTA	ethylenediaminetetraacetate	NS	not significant	wt/vol	weight to volume
EFA	essential fatty acid	o.d.	outside diameter	wt/wt	weight to weight
ELISA	enzyme-linked immunosorbent antibody assay	OM	organic matter	\bar{X}	mean
EPD	expected progeny difference			YG	yield grade
Exp.	experiment			yr	year
Ext.	Extension				

Measures and Mathematics

Numbers less than zero shall be written with a preceding zero (e.g., 0.75). All cardinal numbers are written as numerals except when they begin a sentence or appear in a title; when 2 numerals are adjacent in a sentence (spell out the number most easily expressed in words; e.g., two 10-kg samples); or when a number is used as a figure of speech. Measures must be in the metric system; however, US equivalents may be given in parentheses. Units of measure not preceded by numbers must be written out rather than abbreviated (e.g., lysine content was measured in milligrams per kilogram of diet). Abbreviations of measures of variation presented must be spelled out in the abstract and body of the paper at first use. Units of measure for feed conversion or feed efficiency shall be provided. Use the slash only when it means “per” with numbered units of measure or “divided by” in equations. Use only one slant line in a given expression (e.g., g/d per chick). The slant line may not be used to indicate ratios, mixtures, or substitute for the words “and” or “or.” Insert spaces around all signs (except slant lines) of operation (equal, minus, plus, times, greater than, or less than) when these signs occur between 2 items, including statements of probability ($P < 0.05$). The exception to this is in statements of probability ($P < 0.05$). Use “to” instead of a hyphen to indicate range. Items in a series should be separated by commas (e.g., a, b, or c).

Miscellaneous

Footnote superscripts (numbers or letters) should follow end punctuation (e.g., Jones,¹ or end of sentence.²).

Restrict the use of “while” and “since” to meanings related to time. Appropriate substitutes include “and,” “but,” or “whereas” for “while,” and “because” or “although” for “since.”

ELECTRONIC MANUSCRIPTS

The journal has moved to an electronic submission and peer-review system (Manuscript Central) to facilitate author and journal processes. Please submit online (<http://mc.manuscriptcentral.com/pas>).

Author Proofs

Author proofs of all manuscripts will be sent to the corresponding author indicated on the title page of the manuscript. Corrections to the proof should be made neatly and clearly in the margins of the proof. If extensive editing is required, it should be provided on a separate sheet of paper with a symbol indicating its location on the proof. The revised manuscript and figures must be returned with the corrected author proofs within 48 hours. The use of priority mail is encouraged. Failure to return proofs within 48 hours may delay publication.

Copyright Agreement

All authors must complete the Copyright Release Form before publication can proceed. Persons unable to sign copyright agreements, such as federal employees, must indicate the reason for exemption on the form. The ARPAS grants to the author the right of republication in any book of which he or she is the author or editor, subject to giving proper credit to the original journal publication of the article by ARPAS.

Technical Reviews

Review manuscripts are intended to integrate information and provide final recommendations on the use and (or) application of research-based information on animal agriculture subjects. As such, ARPAS members are encouraged to submit articles that, through review of research, provide technical application to those involved in animal agriculture. Technical reviews must follow the General Style and Form guidelines and include the following sections. **Title Page**-Follow the same rules as general manuscripts. **Abstract**-Follow the same rules as general manuscripts. **Introduction**-Emphasis should be placed on the reason(s) a review on this subject is needed and to whom it would be beneficial. **Review and Discussion**-The body should apply the results from various refereed research to the purpose of the review. This section should include a discussion, evaluation, and integration of the available information. **Implications**-Emphasis should include recommendations on practices and (or) applications based on evidence from research-based information directed at the review's intended audience, e.g., producers, technical service professionals, research directions, etc. Manuscripts must

also provide details on any methods (e.g., statistics) that were used to compare data from different sources, etc. Properly cite all previously published material. These manuscripts will be subject to the same review process as other manuscripts. Articles should follow *The Professional Animal Scientist* format. Members of ARPAS who have interest in submitting Technical Reviews should contact the Editor-in-Chief.

Case Studies and Technical Notes

These types of article will consist of unique applications in any area of animal agriculture or a related discipline. These manuscripts should have literature citations, although they are usually more limited and generally more recent than technical reviews or original research manuscripts. The topic of the case study can be biological or economic, or it may deal with public or producer attitudes and perceptions. These manuscripts will be subject to the same review process as other types of manuscripts. Follow the General Style and Form guidelines and include all standard sections (Abstract, Introduction, Materials and Methods, Results and Discussion, and Implications). The Implications section should emphasize additional application of principles to solve the given problem and suggest further research that should alleviate this or similar problems. The case study manuscript should be submitted to the Editor-in-Chief.

Other Publishable Items

Letters to the Editor, policy, statements, or book reviews from ARPAS members or PAS subscribers will be published in a special section. Letters may offer comments or questions about articles previously published in PAS, technical questions requesting a scientist's response, or educational notes about new or innovative approaches in teaching, extension, or industry programs.

Manuscript Submission

Manuscripts should be submitted to our online submission and peer-review site (<http://mc.manuscriptcentral.com/pas>). Assistance for using that system can be obtained by contacting Jeremy Holzner (jeremyh@assochq.org). Other questions concerning manuscripts can be directed to the editorial office (journals@assochq.org).

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