

Instructions for Authors

(updated July 2019)

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Scope and general policy

The *New Zealand Veterinary Journal (NZVJ)* publishes original research findings, clinical communications, correspondence and review articles, originating from New Zealand and internationally. Topics should be relevant to New Zealand veterinary and animal science communities, and include the disciplines of infectious disease, medicine, surgery and the health, management and welfare of production and companion animals, horses and New Zealand wildlife.

The editorial policies of the *NZVJ* are in accordance with the *Uniform Requirements for Manuscripts Submitted to Biomedical Journals* published by the International Committee for Medical Journal Editors (ICMJE) at: www.icmje.org.

Peer review

All articles submitted for publication, that are considered within the scope of the *NZVJ*, will be independently refereed regardless of source. Referees are selected by the Editors. Referees will remain anonymous, unless both the referee and the Editor agree otherwise, and are obliged to keep all unpublished information confidential. Referees are asked to state explicitly whether or not any conflicts of interest that could bias their opinions of the manuscript exist, and to disqualify themselves from reviewing specific manuscripts if they believe it to be appropriate.

The final decision concerning acceptability of a manuscript is the responsibility of the Editors. Failure to comply with *Journal* policy at any stage is grounds for rejection.

Specific policies

Authorship

All authors should meet all the following criteria to qualify for authorship, as recommended by the ICMJE:

- Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; and
- Drafting the work or revising it critically for important intellectual content; and
- Final approval of the version to be published; and
- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

The names and contributions of those involved in the study who did not qualify for authorship may be included in the Acknowledgements section. Further guidance is provided by [ICMJE](http://www.icmje.org).

Animal welfare and medical ethics

All material published in the *NZVJ* must adhere to high ethical standards. In accordance with the Guidelines on Animal Ethics and Welfare for Veterinary Journals, developed by the International Association of Veterinary Editors, all experimental work involving live animals must comply with relevant international, national, and/or institutional guidelines and legal requirements. It must also conform with the ethical standards described in the [Good Practice Guide for the use of animals in research, testing and teaching](#). To be considered for publication, authors must include a statement in the Materials and Methods section that all procedures involving the experimental use of animals were approved by an animal ethics committee (AEC), or equivalent, where relevant. If there is any doubt about whether AEC approval is required, the local AEC should be consulted.

Studies using client-owned animals must be performed with informed client consent and demonstrate a high standard of veterinary care.

All research involving either the participation of humans, or where the research impacts on human individuals, groups or communities (e.g. questionnaires), must be approved by an accredited human ethics committee, unless such participation has been assessed as low risk. Participant confidentiality must be ensured.

The final decision concerning acceptability of a manuscript on ethical and welfare grounds rests with the Editor.

Reporting guidelines

The *NZVJ* strongly supports the transparent, complete and accurate reporting of research and the use of reporting guidelines. Authors should refer to the [MERIDIAN](#) website, which presents guidelines for reporting research studies that involve animals. These include [ARRIVE](#) (Animal Research: Reporting of *In Vivo* Experiments), [REFLECT](#) (Randomised control trials for livestock and food safety), [STARD](#) (Evaluation of diagnostic tests), [STROBE](#) (Standards for the reporting of observational studies in epidemiology), and [PRISMA](#) (systematic reviews and meta-analyses).

Notification of sources of funding and financial, conflicting or competing interests

Submissions must be accompanied by clear disclosures from all authors of their affiliations, funding and financial or competing interests that may have bearing on the submission.

- All authors must disclose all financial holdings, professional affiliations, advisory positions, board memberships, patent applications/holdings, or possible conflicts or competing interests that may bear relationship to the submitted work. The Editor will determine whether any of the material disclosed should be published as part of the article in a section preceding the Acknowledgements entitled, "Declaration of Interest".
- All sources of funding and financial support pertaining to the submitted research, including support in kind, must be stated explicitly in the Acknowledgements section of the manuscript.
- Organisational affiliations of all authors including academic, corporate and other commercial affiliations that have any bearing on the study must be listed in the Acknowledgements section, or included in affiliations listed for each author as footnotes on the title page.
- Where funding or support has been provided from a commercial source or a conflict or competing interest exists, the role of the named parties in the experimental design, implementation, analysis, interpretation of results, reporting and decision to publish must be declared.

Failure to disclose all sources of funding and financial, conflicting or competing interests is grounds for immediate rejection or retraction of submitted or published manuscripts, or may result in publication of a notice of undisclosed competing conflict of interest, at the Editor's discretion. Conflict of interest may exist whether or not an individual believes it affects his or her scientific judgment, and is best managed by full disclosure.

Copyright and manuscript release

Submission of a manuscript is held to imply that it has not been and, if accepted, will not be published elsewhere in whole or in part without permission of the Editor, and that all parties to the ownership of the intellectual property contained in it agree to its publication. Publication elsewhere in the form of an abstract, extended summary or conference proceedings, or posting on a preprint server does not necessarily preclude publication in the *NZVJ*, but should be declared at the time of submission.

Authors who choose to post their work on a preprint server should choose one that clearly identifies preprints as not peer-reviewed work and includes statements of conflicts of interest. Upon acceptance, authors should acknowledge that the article has been accepted for publication in the *NZVJ* and update their preprint with the Digital Object Identifier (DOI) of the final, published article (the Version of Record).

Authors wishing to include extracts or illustrations from other published works must obtain permission from the copyright holder and, if they are not the authors of the reproduced material, it is recommended that permission of the authors also be sought.

All articles accepted for publication become the exclusive copyright of the New Zealand Veterinary Association Inc. (the Publisher), including the right to reproduce the article in all forms and media.

Misconduct

Research misconduct generally refers to mistreatment of research subjects, falsification and fabrication of data, piracy and plagiarism. It does not include honest error or differences of opinion. Authors may not use their own, previously published work without appropriate citation. Authors should refrain from excessive fragmentation of work resulting in multiple publications from one study.

Please note that the *NZVJ* uses [CrossCheck](#)TM software to screen papers for unoriginal material. By submitting your paper you are agreeing to any necessary originality checks your paper may have to undergo during the peer-review and production processes.

Authors suspected of misconduct of any form at any time during the publication process will be alerted and given the opportunity to provide a satisfactory answer. If an author is not able to provide a satisfactory answer their manuscript will be withdrawn and their institution may be notified. They may also be prohibited from publishing future work in the *NZVJ*.

Disclaimer

The *NZVJ* is published by the New Zealand Veterinary Association Incorporated (NZVA). Authors are advised that views expressed in the *NZVJ* do not necessarily represent those of the NZVA or the editors, and neither the NZVA nor the editors endorse any products or services advertised. The NZVA is not the source of the information reproduced in the *NZVJ* and does not independently verify the truth of the information. It does not accept any legal responsibility for the truth or accuracy of the information contained therein. Neither the NZVA nor the editors accept any liability whatsoever for the content of the *NZVJ* or for any consequences which may result from the use of any information contained therein or advice given therein. This provision is intended to exclude the NZVA, the editors, its staff and contractors from all liability whatsoever, including

liability for negligence in the publication or reproduction of the materials set out therein.

Publication options

The *NZVJ* is published by Taylor & Francis on behalf of the New Zealand Veterinary Association.

Accepted manuscripts are published online within three weeks of acceptance and subsequently allocated to issues published bimonthly in January, March, May, July, September and November each year.

Page charges and fast-track publication

There are no page charges for the routine publication of articles in the *NZVJ*.

Provision exists for authors to advance publication of articles that have been refereed and accepted in the usual way, ahead of their scheduled date, upon payment of a \$NZ450 base fee plus \$NZ225 per page.

Open access options

Articles can be made fully and permanently open access online, and for hosting in open access repositories and/or distribution without license, on payment of an Author Publishing Charge of \$US2950. This option is only made available after an article has been accepted. More information is provided [here](#).

Green open access

Authors can share their accepted articles after publication, as described [here](#). Each author can distribute free access to an electronic version of their article to 50 friends, colleagues, or contacts following publication.

Authors can post the Author Accepted Manuscript on their personal website at any point after publication of their article. The accepted manuscript can be posted on the author's institutional or subject repository, after an embargo period of 12 months following publication of the Version of Record.

Submission of manuscripts

Authors should submit their manuscripts online using [ScholarOne Manuscripts](#). All submissions must include an electronic version of the manuscript text, as a Word document. Please do not try to upload PDF files of your text. The system will automatically convert your files to a PDF proof.

Authors will be guided step-by-step through uploading files directly from their computer.

Preparation of manuscripts

Authors are urged to consult a recent issue of the *NZVJ* and follow the style therein as closely as possible. Manuscripts must be written in English of a high standard and are expected to have been peer-reviewed for scientific content and correctness of language and presentation prior to submission. Manuscripts that conform poorly with editorial requirements may be returned without review.

For authors requiring additional editorial input prior to submission, assistance can be obtained from [Taylor & Francis Editing Services](#).

Classes of articles

General Scientific Articles report new and substantial contributions to veterinary science based on original research. They have the format: Abstract, Introduction, Materials and methods, Statistical analyses, Results, Discussion, Acknowledgements and References.

Short Communications are vehicles for valuable but limited or preliminary observations. They generally have the same format as General Scientific Articles but are limited to 3,500 words and a maximum of 4 figures/tables.

Clinical Communications report novel observations from clinical practice, including investigations of disease outbreaks. Single case reports will not be considered for publication unless of substantial novelty or significance, e.g. a novel putative infectious disease. The format may include Abstract, Introduction, Case History, Clinical Findings, Pathological Findings and/or Laboratory Findings, Discussion, Acknowledgements and References. They are limited to 4,500 words and a maximum of 4 tables/figures, unless otherwise agreed at the time of submission.

Rapid Communications may be preliminary in nature, and report information of pressing importance. At the discretion of the Editors, these will be published as soon as possible following peer review and should follow the format of General Scientific Articles.

Review Articles can be submitted as either systematic or narrative reviews on topics within the scope of the *NZVJ*. They should have a clearly stated objective and scope. Narrative reviews should present a critical assessment of the published literature rather than just summarising it. Systematic reviews, in addition to following a clear protocol, should also include critical assessment. The format is flexible, but should include an abstract and key words, and be <10,000 words in length including references. Authors are encouraged to consult the Editors before embarking on a review.

Correspondence contains no headings, but may be followed by a short list of references. Correspondence of a scientific nature should follow the usual sequence for scientific articles, and normally contain no more than one table or illustration.

Journal layout

Manuscripts should be formatted double or 1.5 line spacing throughout, with 2-cm margins on all sides. Number all pages consecutively, and every fifth line in the left margin of each page, continuously.

A style sheet showing the correct formatting is provided on the *NZVJ* [website](#) as a Word document to assist authors in preparing their manuscripts.

Format

Titles should be short, specific and informative. Do not use trade names or abbreviations in the title.

Authors' names and addresses. Use initials (without stops) and surnames only, separated by commas. Superscript symbols (* † ‡ #) should be used after each author's name to identify their full postal address, and the author for correspondence (§), on the first page. The addresses for authors should be those at the time the work was undertaken. If since then any author has moved elsewhere, their current postal address should be given.

Abstracts should contain the following internal sub-headings for scientific articles and short communications: Aims, Methods, Results, Conclusions, Clinical Relevance, and Key Words. For clinical communications use: Case History, Clinical Findings, Diagnosis, Clinical Relevance, and Key Words. Keywords should reflect the important content of the manuscript that will be used by search engines to locate the article, and should also be included in the title and Abstract.

Abstracts should be ≤ 400 words in length, brief and informative when read in isolation from the article. All non-standard abbreviations should be listed after the Abstract.

Introduction. This should set the study in context by briefly reviewing relevant knowledge, providing the rationale for the study, and should end with a clear and concise statement of the study's aims.

Materials and Methods should contain sufficient detail to allow others to repeat the study. For studies that involve the experimental use of humans or animals, include a statement to the effect that all procedures involving the experimental use of animals were approved by the (registered name) Animal Ethics Committee (city, country).

The generic name, dose and route of administration should be given for drugs, and the manufacturer's name and location (city, state, and country) of drugs, reagents and specialised equipment used should be stated in parentheses on first reference. Thereafter, only generic names should be used. Details of all statistical methods used must be given at the end of this section under the sub-heading "Statistical analysis", and should include adequate detail to allow readers to determine precisely how data have been analysed and presented. See below for Statistical guidelines.

Results should be presented concisely and logically without discussion or reference to other work. Data presented in tables and figures should not be repeated in text. Actual probability values should be given, to 2 or 3 decimal places, wherever possible (e.g. "p=0.011" rather than "p<0.05") except where p<0.001.

Discussion should evaluate and interpret the results and relate these to other relevant studies. Do not repeat or present new results in this section. Care should be taken to develop the Discussion in a logical and concise manner, and it should end with a statement of conclusions and brief summary of the clinical relevance of your findings, wherever applicable.

Acknowledgements should be brief, and only include people who have made a direct contribution or provided material or financial support. All sources of funding for the submitted research must be stated.

Journal style

Style and spelling follow the New Zealand *Style Book* (available from GP Publications, Wellington, NZ) and the *Concise Oxford Dictionary*, except that the verbal suffix "-ise" is used, not "-ize".

Numbers <10 are written as words, unless followed by an abbreviation or unit of measure. Numbers ≥ 10 are generally written as numerals unless at the beginning of a sentence. A decimal point must always be preceded by a numeral, e.g. "0.5", not ".5"; do not use a comma, i.e. not 0,5. Numbers $\geq 1,000$ should include a comma.

Quantities. All measurements should be reported in SI units or their decimal multiples, unless it is normal practice in a discipline to use derivatives, e.g. the international unit and the curie. The New Zealand Standard 6501 (available from Standards New Zealand at: www.standards.co.nz), contains the recommended units of measure.

Dates take the form "25 August 2000" in the text, but they may be abbreviated in tables and figures. Use the 24-hour clock for times of day. When used as units, spell in full hours, minutes and seconds.

Nomenclature. Manuscripts should conform to internationally recognised codes of nomenclature (e.g. the *International Code of Zoological Nomenclature*, *International Code of Nomenclature of Bacteria*, and the *International Code of Botanical Nomenclature*). All biotica should be identified by their scientific names when the English term is first used, with the exception of common domestic animals. Generic and specific names should be italicised. Names of organisms should be given in full when used in the Title and when first used in the Abstract or text; after first use, generic names should be abbreviated as far as possible without causing confusion.

Footnotes should only be used in the main text to indicate the address of people cited as personal communications.

Do not use underlining and do not number sub-headings or use itemised lists.

Abbreviations. The following abbreviations may be used without definition in the *NZVJ*. In addition, all chemical elements, common chemical formulae, SI and units of measure used with a value should be used without definition. Abbreviations are generally not permitted in the Title. Plural abbreviations do not require "s".

bp	Base pair
cfu	Colony forming units
DM	Dry matter
DNA	Deoxyribonucleic acid
EDTA	Ethylene diamino tetra-acetate
ELISA	Enzyme-linked immunosorbent assay
epg	Eggs per gram of faeces
H&E	Haematoxylin and eosin
HPLC	High performance liquid chromatography
Ig	Immunoglobulin
I/M	Intramuscular(ly)
I/V	Intravenous(ly)
mRNA	Messenger ribonucleic acid
PCR	Polymerase chain reaction
RIA	Radioimmunoassay
RNA	Ribonucleic acid
rpm	Revolutions per minute
rRNA	Ribosomal ribonucleic acid
S/C	Subcutaneous(ly)

Statistical terms

ANOVA	Analysis of variance
CI	Confidence intervals
CV	Coefficients of variation
df	Degrees of freedom
GLM	Generalised linear model
IQR	Inter-quartile range
LSD	Least significant difference
LSM	Least squares means
n	Number of samples
OR	Odds ratio
r	Correlation coefficient

R ²	Coefficient of determination
RR	Relative risk
SD	Standard deviation
SE	Standard error
SED	Standard error of the difference
SEM	Standard error of the mean
x ²	Chi-squared

The use of other abbreviations should be limited as much as possible. They should not be used if they are in any way ambiguous. Non-standard abbreviations should be listed after the Abstract, and their meaning must be defined in the text when first used. For international units, “IU” should be used; “U” should be used for enzyme activity. Units of length, weight and volume should be given in lower case (e.g. kg, mg/L). Abbreviations for chemical elements, SI units, contractions and suspensions in common use (but excluding “e.g.” and “i.e.”) are not followed by stops; other suspensions generally are (e.g. pers. comm.). The abbreviations “e.g.” and “i.e.” are not italicised but “*et al.*”, “*ad libitum*” “*in vivo*”, “*in vitro*” are.

References

The accuracy of references is the responsibility of authors, and references must be verified against the original article. Please ensure that all articles cited in the text are included in the References list and *vice versa*. In the text, citations should be listed in parentheses in chronological order, citing authors' names, and using “*et al.*” after the first author's name where there are more than two, e.g. (Jones 1994; Smith and Jones 1996; Smith *et al.* 2000). When listing more than one publication by the same author just list the years of publication e.g. (Tasker *et al.* 2003b, 2006a, 2009b). In general, no more than three citations should be included after a statement.

In the References list, references must be in alphabetical order of the first author and include the names of all authors, except if there are more than 10 author names then put “*et al.*” after the 10th author and delete the remaining names. When no author is given, use the term “Anonymous” in both text and the References list. References with the same first author should be listed in the order: a) single author; b) two authors alphabetically according to the name of the second author; c) three or more authors, chronologically. The letters a, b, c, etc. should be appended to the year for papers published by the same authors in the same year.

Authors' names should be in bold, with no stops between initials. Journal titles and names of books should be in italics, in full (not abbreviated). Do not use stops after the year. An EndNote style file for formatting NZVJ references can be obtained by contacting the Editorial office at nzvj@vets.org.nz.

Use the following examples as a guide:

For journal articles:

Pomroy WE, Charleston WAG, West DM. Failure of young goats to acquire resistance to *Haemonchus contortus* in paddock grazing situations. *New Zealand Veterinary Journal* 37, 23–6, 1989

For preprint articles with a digital object identifier:

Kenyon PR, Morel PCH, Morris ST, West DM. A note on the effect of vasectomised rams and short-term exposures to entire rams prior to the breeding period on the reproductive performance of ewe lambs. *Applied Animal Behaviour Science* doi:10.1016/j.applanim.2007.04.006, 2007

For chapters in a book or an occasional proceedings:

***Weinstein L, Swartz MN.** Pathogenic properties of invading microorganisms. In: Sodeman WA Jr, Sodeman WA (eds). *Pathogenic Physiology: Mechanisms of Disease*. Pp 457–72. WB Saunders, Philadelphia, USA, 1974

For articles in proceedings published in a regular series:

***Hanlon DW.** Reproductive problems in the postpartum cow. *Proceedings of the 15th Annual Seminar of the Society of Dairy Cattle Veterinarians of the New Zealand Veterinary Association*. Pp 209–17, 1998

Xu ZZ, Burton LJ. Reproductive efficiency in lactating dairy cows. *Proceedings of the New Zealand Society of Animal Production* 56, 34–7, 1996

For theses:

***McDougall S.** Postpartum anoestrus in the New Zealand dairy cow. *PhD thesis*, Massey University, Palmerston North, NZ, 1994

For government acts:

***Anonymous.** *Animal Welfare Act 1999*. New Zealand Government Printer, Wellington, New Zealand, 1999

Citation of non-peer-reviewed references, e.g. Anonymous, conference proceedings, text books, theses, is discouraged but not precluded. Authors are specifically discouraged from citing their own publications in non-peer-reviewed sources; such data should be cited as “unpublished” or original data presented. Referees are specifically requested to scrutinise the use of non-peer-reviewed references and make recommendations regarding alternatives or omission.

If non-peer-reviewed references are cited, these should be less than two years old and clearly distinguished as such in the text by qualifying statements such as “preliminary data” or “non-peer-reviewed reports”. In the References list, non-peer-reviewed articles should be preceded by an asterisk before the first author's name, e.g.

***Loth L, Stone M.** Weaner pig mortality rates on New Zealand farms affected by PMWS. *Surveillance* 32 (1), 3–6, 2005

When referencing a website, the data provided must be substantiated, and you should be personally satisfied that the data are defensible. Please provide the full title of the work, its full URL so that the exact information being referred to can be accessed, last date of accession, and the name of the organisation publishing the website. The authors' names should be provided wherever possible, else listed as Anonymous, e.g.

***Anonymous.** *New Zealand Dairy Statistics 2008-09*. http://www.lic.co.nz/pdf/dairy_stats/DAIRY_STATISTICS_08-09.pdf (accessed 02 November 2010). LIC and DairyNZ, Hamilton, NZ, 2009

Avoid using abstracts as references, and do not use “unpublished data” or “personal communications” unless they exist in written form. If they do, they may be referred to in the text, but must not appear in the References list. A pers. comm. should be a numbered footnote including the author's initials and last name, followed by workplace name, city and country.

References to papers which have been accepted but not published should be cited as “in press”, whereas papers which have been submitted but not accepted should be referred to as “unpublished data”.

Tables

Tabular material should be included on separate pages after the References. Information in tables should not be

repeated in the text. Tables must be numbered consecutively (Arabic numbers) in the order they are referred to, and be understandable without reference to the text. The title should be a single sentence typed at the head of the table; additional explanatory information including non-standard abbreviations should appear as alphabetically ordered footnotes ^{a b} cross-referenced to the column entries. If using superscript letters to denote significant differences between means, use ^{x y z} and elaborate these in footnotes.

Tables should be constructed using the Table function of a word processor or spreadsheet (Word or Excel preferred), with each entry in a separate cell; do not use tabs or line breaks within cells. Do not use vertical lines. Use horizontal lines to separate the table from the title and footnotes, and column headings from data. Only the first letter of column or row headings should be capitalised. Unit descriptors should be placed under each column heading in parentheses and chosen to minimise the number of digits in each column. Report zero values as “0”, and any values not tested as “NT”, and identify the statistical measure of variation used in either the title or footnotes.

Figures

Figures for publication should be submitted in the highest quality format possible. Failure to comply with the following instructions will result in figures being returned to authors and publication being delayed.

No specific feature within an image may be enhanced, obscured, moved, removed, or introduced. Adjustments of brightness, contrast, or colour balance are acceptable if they are applied to the whole image and as long as they do not obscure, eliminate, or misrepresent any information present in the original. Any digital manipulation must be mentioned in the figure legend.

Figures should be placed at the end of the manuscript on separate pages and numbered consecutively using Arabic numerals in the order they are described in the text (e.g. “Figure 1”). Figure captions should contain an explanation of all markers, lines and symbols used (i.e. the key), as well as all abbreviations. Each caption should contain sufficient information that it stands alone from the text. Authors should consult a recent issue of the *NZVJ* for examples of the presentation of Figures.

Figure size. Figures should be constructed exactly as the authors want them reproduced, at the final size for publication, e.g. single column width (88 mm) or double column width (185 mm).

Font size and line thickness as described below apply to the Figure at final publication size. Do not include a box around, or gridlines within the Figure.

Font size. The font for all text within the figure and axis labels should be sans-serif type (e.g. Arial) 7 point (equivalent to 2 mm height when printed).

Line thickness. The thickness of all lines including axes, tick marks, whiskers, and connecting lines between datapoints should be 0.2 mm (0.57 point)

Axis labels. Tick marks should face outwards, and titles for axes should run parallel to their axes, left to right and bottom to top, using capital letters for the first word only. State the value being measured, followed by its appropriate SI unit in parentheses, e.g. “Liveweight (kg)”

Symbols and shading. For line graphs the preferred

symbols are ○ ● □ ■ △ ▲. If more symbols are required, ensure their shape is different enough that they are still distinct enough when overlapping occurs. Lines should not be visible within symbols or bars. For bar graphs use white, then black, then grey shading as either 10%, 30% or 50%. Do not use three-dimensional bar charts.

Photomicrographs, X-rays, photographs. Bar scales should be used on photographs and diagrams; magnifications should only be stated for electron photomicrographs. The thickness of lines for bars (depicting scale) or for arrows should be 0.53 mm (1.5 point) at the final size the figure will be reproduced (e.g. single column width, as above). Any lettering or numbers within a photomicrograph, X-ray or photograph should be lower case sans-serif type (e.g. Arial) 10 point. If figures require cropping or reorienting, this must be done prior to submission.

File formats. Figures for publication should be supplied as separate high-resolution files, either EPS or TIFF, with a minimum resolution of 300–600 dpi. PDF files are acceptable, but only if generated from a digital source, i.e. graphic software, NOT an image or scanned image. MS Excel files are permitted, provided that figures have been originally created in these formats and that all embedded images are at a suitable resolution.

Each figure, including each part of a figure, e.g. Figure 1a, Figure 1b, should be saved as a separate file, but do not add the labels (a, b, etc.) to the figure. Each figure should preferably not exceed 10 MB per individual file.

Authors are required to pay the cost of printing colour drawings and photographs at a cost of \$NZ540 per page. Please indicate on submission if you require colour printing.

Supplementary Information

Supplementary information (SI) is material directly relevant to the conclusion of a paper that cannot be included in the printed version for reasons of space, e.g. survey questionnaires. SI is posted online with the article at the time of publication, generally as a single PDF. It must be related to and add to the content of the article. Categories of SI may include: supplementary figures; supplementary methods; supplementary tables; supplementary equations; supplementary data, supplementary videos or audio.

Supplementary information should be submitted at the same time as the manuscript and will be subject to peer-review and editorial scrutiny. SI is not copy-edited so authors should ensure that it is clearly and succinctly presented, and that the style conforms with the rest of the paper. Authors are responsible for the accuracy and content of all SI. Inclusion of SI is at the discretion of the Editor.

Supplementary tables and figures must have a separate numbering system from that used for tables and figures in the print version e.g. “Supplementary Figure 1”. Each piece of SI should be referred to in the print version of the paper at an appropriate point in the text.

Statistical guidelines

Aims

Clearly state the aims, objectives or hypotheses tested in the Abstract and at the end of the Introduction.

Materials and methods

Refer also to the relevant reporting guidelines e.g. [REFLECT](#). The following must be clearly described:

Selection of subjects. For experiments or field trials, the source and number of subjects (animals, groups, farms) in the study, the process for their selection and specific criteria for inclusion/exclusion must be stated. Indicate procedures used to determine sample size, preferably considering both the power of the study and level of statistical significance in relation to anticipated biological outcomes.

Surveys. Indicate design (retrospective, cross-sectional, etc.), definition of target and sample populations, sampling methods used, and evidence that the sample population is representative of the target population. Where the target population is unknown conclusions cannot be extrapolated beyond the sample population. Where relevant, describe measures taken to maximise the rate of participation, and validation procedures. A copy of the questionnaire should be provided as Supplementary Information (see above).

Allocation to treatments. Describe the method of randomisation used to allocate subjects to treatment groups. If stratification, blocking, or matching are involved, these should be clearly described and considered in the analysis and results.

Statistical analysis

Describe statistical methods used in a sub-section of Materials and Methods headed 'Statistical analysis'.

Analytical methods should be appropriate for the design of the study, and the unit of analysis (e.g. individual animal, group, farm, etc.) and outcome variables stated unambiguously. When several analytical methods are used, clearly state where each method was applied. Two-sided tests are to be used unless a strong argument is presented to justify a one-sided test. Complex procedures should be explained in detail or referenced.

Details of software packages used should be identified by name, version and supplier, e.g. R v2.9.1 (R Development Core Team, 2009; R Foundation for Statistical Computing, Vienna, Austria), SAS v9.1 (SAS Institute Inc., Cary NC, USA 2003).

Assumptions. Many statistical methods have implicit assumptions (distribution of data, independence of observations, etc.). Data should be tested to ensure these assumptions are met. If transformation of data is used to meet the assumptions of a statistical method it should be verified that the required effect has been achieved.

Lack of independence. If measurements are not independent (e.g. repeated measures, animals clustered in pens or flocks), appropriate measures should be taken to account for clustering. Possible correlation between outcome measurements, and co-linearity between explanatory variables in observational studies should be evaluated.

Extreme data points. Observations that are inconsistent with the overall data ('outliers') should not be excluded without clear justification, and any omissions should be documented.

Presentation

All items referred to in Materials and Methods should be presented in Results and *vice versa*.

Descriptive statistics. Measures of central tendency (e.g. mean, median) must be accompanied by measures of

variation among individuals (e.g. SD, IQR) or precision for population estimates (e.g. SEM). For ordered qualitative data that do not approximate to a continuous linear measure, the use of means and SE or SD is invalid, and proportions should be stated. CI must be presented for population parameters, and estimates of effect such as OR and RR. For comparative studies, CI for observed differences should be reported rather than separate CI for each comparison group.

Format. Use the following format: e.g. mean 14.2 (SD 7.4) or mean 14.2 (SEM 1.9) rather than 14.2 ± 7.4 . For CI use e.g. mean 14.2 (95% CI=10.2–18.3), OR=0.74 (95% CI= 0.57–0.96), and for range use e.g. median 6 (min 1, max 15).

Probability values are given in the form "p=0.003" (lower case, no spaces, to 2 or 3 decimal places only).

Numerical precision. Numerical results should be presented with appropriate precision. Means should not be presented to more than one decimal place more than the raw data. Percentages should not be presented with decimal places unless $n > 100$, and should always indicate the numerator and denominator.

Hypothesis tests. Do not use p-values (e.g. $p < 0.05$) to dichotomise significant and non-significant results. Exact p-values should be reported to two or three decimal places when between 0.01 and 0.05, and to three decimal places when between 0.010 and 0.001. P-values < 0.001 should be reported as such. Measures of effect with 95% CI should be presented where relevant. Interpretation of hypothesis tests should consider study power, type-1 error rate (e.g. 0.05), sample size, the size of the effect with CI and biological significance. Multiple comparisons require the use of an appropriate adjustment to control type-1 error.

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