Icelandic Agricultural Sciences (Icel. Agric. Sci.) is published annually, or more frequently. The journal is in English and is refereed and distributed internationally. It publishes original articles and reviews written by researchers throughout the world on any aspect of applied life sciences that are relevant under boreal, alpine, arctic or subarctic conditions. Relevant subjects include e.g. any kind of environmental research, farming, breeding and diseases of plants and animals, hunting and fisheries, forestry, soil conservation, ecology of managed and natural ecosystems, geothermal ecology, etc. Authors submitting a paper do so on the understanding that the work has not been published before, is not considered for publication elsewhere and has been read and approved by all authors.

Original research articles must cover new and original research that has not been published before in a medium with peer reviewing and should generally not exceed 12 printed pages, or ca. 5,000 words + tables and figures. Short communications focus on studies with more limited coverage than original articles. The maximum length is 4 printed pages, or ca. 2000 words. Short communications do not need an abstract. Review articles should generally not exceed 15 printed pages or ca. 7,000 words + tables and figures. Letters to the Editor are reserved for comments on articles published in IAS. They should not exceed one printed page or ca. 450 words.

Publication charges. Original articles or review articles not exceeding 12 or 15 printed pages, respectively, are free of charge. For additional pages the authors will be charged 100 € per each additional page. Supplements that may be provided with an article shall be made available on our homepage and will be charged 50€ per page. Manuscripts should be in correct English; typed, with 1.5 line spacing on A4 paper and consisting of:

Title which should be concise and informative but as short as possible. Include also a short running title at the top of the first page. Authors’ names and name(s) and addresses of department(s)/institution(s) to which the work is attributed. Include the e-mail addresses of all authors.

Abstract, English and Icelandic “Yfirlit”, should not exceed 150 words each. Non-Icelandic speaking authors will get help from the editor with translation to “Yfirlit”.

Keywords in alphabetical order, up to 6 words, preferably not used in the title.

Text should normally be divided into: Introduction, Materials and methods, Results, Discussion, Acknowledgements, and References. Use capitals in first headings, use italic in second headings (and title of Icelandic “Yfirlit”) and use bold and italic in third headings, if needed.

Introduction should provide a general orientation of the subject and present reasons for and aims of the study. Concisely written. Text references should be written: Smith & Jones (1988) or Hansson et al. (1990). If more than two publications are used references should be cited chronologically (Smith & Jones 1988, Hansson et al. 1990). Do not italicizes et al.

Materials and methods must provide sufficient information to permit exact replication of experimental work or statistical analysis. Results should be clear, concise, and as objective as possible. No discussion of the results is permitted in this section.

Discussion should not repeat results, but in a logical way interpret the main results with reference to relevant figures, tables and references. The Discussion should be concise written and as brief as possible. A separate chapter of Conclusions may be used.

Abbreviations, numerical symbols and style.
1. Use only international standard abbreviations, according to the guidelines from Caltech Library Service (http://library.caltech.edu/reference/abbreviations/).
2. In decimals, use the decimal point, not the comma (use comma in Icelandic “Yfirlit”).
3. When presenting units, do not use slash (t/ha year), use negative exponents (t DM ha⁻¹ year⁻¹). DM = dry mass.
4. When presenting concentrations, quantitative units (e.g. mg N g⁻¹ DM) are preferred to relative units (e.g. % N).
5. Use no Roman numerals.
6. Foreign words, Latin names of genera, species, mathematical symbols, etc. should be italicized. Personal names after Latin names should not be italicized.
7. Indicate the Latin binomial and authority names of species when they are first mentioned in the text, but not in the title or the abstract.

References should be kept to a pertinent minimum. Primary publications in English are recommended. In the text, references are identified by the name(s) of the author(s) with the year of publication in parenthesis. If both are in parenthesis, no punctuation separates the name(s) of the author(s) and the year of publication. Consecutive citations in the text are placed in chronological order and separated by commas. If there are two authors the names are separated with the symbol &. If there are more than two authors, only the first author’s name is given, and this is followed by the phrase et al., which should not be in italic (e.g. Kramer 1986, Day et al. 2002). In the reference list names of journals should be written out fully. The reference list should be arranged in alphabetical order according to the name of the first author, see examples below. Titles of articles in other languages than English, French or German should be translated to English, in brackets, and the language of the original source should be indicated in brackets at the end of the reference. Names of authors and publication year should be in bold, separating authors with commas but apart from that without commas or dots. Name of journal or books should be italicized.

DOI numbers should always be provided if they exist using the prefix https://doi.org/.

Illustrations/Figures. All illustrative material must be of publication quality. All graphs, drawings and photographs are considered figures and should be kept to a minimum, numbered consecutively with Arabic numerals. Use only solid or open symbols, and avoid the use of light lines or fine screen shading. Distinguish areas within a diagram with solid white or black fill, hatching, or cross-hatching. Figures should be designed to fit one (6.6 cm), one and a half (10.3 cm), or two (13.8 cm) column widths, with a maximum height of 19.6 cm. Figures should be submitted at the size they are to appear in the journal. When reproduced at final size, lettering on figures (capitals and numerals) must be of Arial font and 11 point size. Excel format of graphs are preferred. If figures are made in other programs care must be taken to follow the above instructions in every detail. Figures should be delivered in black and white and will be printed in black and white, but colour printing is possible at the cost of author.

Tables. If results are already given in graphs or diagrams, tables should not be used. Double documentation is not acceptable. Table text should be in ordinary letter size and column headings in bold. Location of figures and tables might be indicated as a comment. Columns or rows within the tables should not be separated with lines. Lining should only be at top and bottom of a table, separating the heading from table content.

Submit your manuscript electronically to the editor at: editor@ias.is

Editor-in-Chief
Thorsteinn Gudmundsson
Agricultural University of Iceland
Hvanneyri, 311 Borgarnes, Iceland

Instructions to authors
(See a complete version on the website www.ias.is)
## ICHELANDIC AGRICULTURAL SCIENCES 30 / 2017

### CONTENTS

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Editorial</td>
<td>JÓN H. EIRIKSSON AND ÁGÚST SIGURDSSON</td>
</tr>
<tr>
<td>3</td>
<td>Sources of bias, genetic trend and changes in genetic correlation in carcass and ultrasound traits in the icelandic sheep population</td>
<td>HRANNAR SMÁRI HILMARSSON, MAGNUS GÖRANSSON, MORTEN LILLEMO, PÓRDÍS ANNA KRISTJÁNSDÓTTIR, JÓNATAN HERMANNSSON AND JÓN HALLSTEINN HALLSSON</td>
</tr>
<tr>
<td>13</td>
<td>An overview of barley breeding and variety trials in Iceland in 1987-2014</td>
<td>TEREZIE MANDÁKOVÁ, HJÖRTUR THORBJÖRNSSON, RAHUL PISUPATI, ILKA REICHARDT, MARTIN A. LYSAK, KESARA ANAMTHAWAT-JÓNSSON</td>
</tr>
<tr>
<td>29</td>
<td>Icelandic accession of Arabidopsis thaliana confirmed with cytogenetic markers and its origin inferred from whole-genome sequencing</td>
<td>JONATHAN WILLOW</td>
</tr>
<tr>
<td>39</td>
<td>Case study on forage plants of the heath bumblebee (Bombus jonellus) in southwest Iceland</td>
<td>GINTARAS ŠIAUDINIS, INGA LIAUDANSKIENĖ, ALVYRA ŠLEPETIENĖ</td>
</tr>
<tr>
<td>43</td>
<td>Changes in soil carbon, nitrogen and sulphur content as influenced by liming and nitrogen fertilization of three energy crops</td>
<td>JONATHAN WILLOW, MARIANA TAMAYO AND MAGNÚS H. JÓHANSSON</td>
</tr>
<tr>
<td>51</td>
<td>Potential impact of Nootka lupine (Lupinus nootkatensis) invasion on pollinator communities in Iceland</td>
<td>BRYNDÍS MARTEINSDÓTTIR, ISABEL C. BARRIO AND INGIBJÖRG SVALA JÓNSDÓTTIR</td>
</tr>
<tr>
<td>55</td>
<td>Assessing the ecological impacts of extensive sheep grazing in Iceland</td>
<td>HRANNAR SMÁRI HILMARSSON, MAGNUS GÖRANSSON, JÓN HALLSTEINN HALLSSON, PÓRDÍS ANNA KRISTJÁNSDÓTTIR AND JÓNATAN HERMANNSSON</td>
</tr>
</tbody>
</table>

Short communication