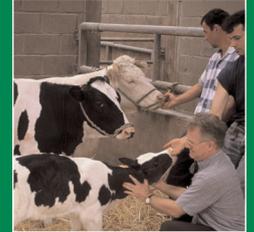
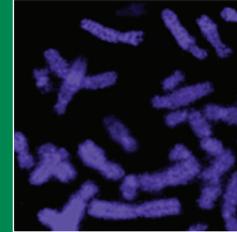


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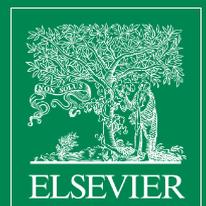
animal – science proceedings

The Challenge of Change
The New Normal?

Proceedings of the British Society of Animal Science
12th – 15th April 2021
On-line Virtual Conference



animal – science proceedings



animal - science proceedings

The Proceedings of the British Society of Animal Science constitutes summaries of papers to be presented at the Society's Annual Conference, BSAS 77th Annual Conference 2021 held virtually on 12th – 15th April 2021

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animal – science proceedings

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Subject areas can include aspects of Breeding and Genetics, Nutrition, Physiology and Functional Biology of Systems, Behaviour, Health and Welfare, Livestock Farming Systems and Product Quality. Due to the integrative nature of biological systems, animal science proceedings will welcome contributions on the translation of basic and strategic science into whole animal and whole system Productivity, on Product Quality and the relationship between products and human health, Food Security, the Environment including ecosystem services and agroecology, and Climate Change. Proceedings can involve research, extension studies, training and education as well as policy development. The conferences can be international or regional/ national.

Languages other than English are acceptable provided a means of wider dissemination is agreed.

animal – science proceedings is closely related to animal and animal – open space with the facility to publish main/ invited papers from the conferences in these journals.

Further information can be found here

Information for Conference Organisers

The animal family provides a package enabling conference organisers to publish main / invited papers in animal with abstracts in *animal – science proceedings*.

For further information and a guide for conference organisers please contact ansproceedings@bsas.org.uk

Welcome

The British Society of Animal Science (BSAS) aims to provide an opportunity for those with an interest in animals and animal science to exchange views, ideas and information. It is an energetic and active society with members from countries throughout the world. Today, as ever, the Society is the natural connecting point for all of those with an interest in animal science and related sectors. Its membership is drawn from research, education, advisory work, commerce and practical animal keeping.

At the conference the animal consortium of BSAS, EAAP and INRAE will launch the *animal* family of Gold Open Access journals, published by Elsevier.

- The well-established journal *animal* publishes the best, innovative and cutting-edge science that relates to animals (farmed or managed) used for animal production but now two other linked journals.
- *animal – science proceedings* (formerly Advances in Animal Biosciences) will publish high-quality conference, symposium and workshop proceedings on aspects of the life sciences. The BSAS conference is the first issue.
- *animal – open science* is a new publishing initiative of the consortium. The journal fully embraces Open Science. All relevant activities (research, extension, teaching) in the field of animal science that are well-carried out deserve to be published and contribute to enhanced knowledge. Scientific exchange and interactions with the authors on articles will be through a platform of post-prints commentaries rather than conventional peer review.

Further information can be found on www.animal-journal.eu

BSAS organises major scientific and specialist conferences on key issues facing the science related to animals.

If you would like to join or receive further information about the British Society of Animal Science please contact:

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Proceedings

of the British Society of Animal Science Annual conference 2021

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95. Evaluation of infrared thermography as a diagnostic tool for the detection of foot lesions in dairy sheep

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4789 **Application:** Early and accurate diagnosis of foot lesions in dairy sheep
4790 is important to tackle lameness and ensure welfare. Infrared thermogra-
4791 phy (IRT) is a non-invasive nature technology, currently utilized by prac-
4792 titioners for the diagnosis of systematic diseases.

4793 **Introduction:** Ovine interdigital dermatitis (OID), footrot and white line
4794 disease (WLD) are the most observed foot-related lameness causes in
4795 intensive dairy sheep systems. The associated lesions are revealed dur-
4796 ing routine and/or exploratory foot-trimming. Hence, considering the
4797 non-invasive of infrared thermography, our objective was to assess its
4798 diagnostic accuracy for the detection of foot lesions in dairy sheep.

4799 **Materials and methods:** One hundred multiparous randomly selected
4800 dairy ewes from each of 6 enrolled farms were used in the study (n =
4801 600 ewes). Data were recorded during routine foot-trimming and
4802 included lactation number, body condition score (BCS), OID, footrot
4803 and WLD lesions. Thermographic images were captured by an infrared
4804 thermographic camera (FLIR 8) and processed with Flir Tools software
4805 to estimate ambient (AT) and the maximum interdigital skin tempera-
4806 ture (MIST), at the foot level (n = 2400 feet). The difference between
4807 AT and the MIST (DAMT) for each foot was calculated. SPSS v23 was
4808 used for data analyses, that included i) descriptive statistics, ii) two sets

of binary regression analyses with lactation number, BCS (covariate) and
MIST (covariate) used as predictors of the outcome variables (occur-
rence of OID, footrot, and WLD); in the second set MIST was replaced
by DAMT, and iii) receiver operating characteristic (ROC) analyses to
compare the diagnostic performance of sound foot (0) and foot with
lesions (1) and to calculate the optimal efficiency threshold, sensitivity
(Se) and specificity (Sp) values when the predicted (by the models)
probabilities were considered.

Results: Overall, prevalence of OID, footrot, and WLD at the foot level
was 8.1% (195/2400), 2.2% (52/2400), and 13.6% (326/2400), respec-
tively. Mean MIST and DAMT were 33.8 ± 0.08 and 14.5 ± 0.08 °C,
respectively. Both MIST and DAMT were significant predictors of the
occurrence of OID, footrot, and WLD lesions ($P < 0.001$). In the case
of MIST, one-degree Celsius increase of IST was associated with 1.39,
1.21, and 1.05 times increased probability of OID, footrot, and WLD
lesions occurrence, respectively. The respective values for DAMT were
1.25, 1.16, and 1.08. The most effective models for setting threshold val-
ues for diagnosis of foot lesions were the ones that included MIST as
covariate. The area under the ROC curve was 0.754, 0.698, and 0.567
for OID, footrot, and WLD lesions, respectively ($P < 0.001$). Optimal
efficiency threshold values for the prediction of OID, footrot, and WLD
based on the first set prediction equation estimates were 0.0926 (Se:
71.3% and Sp: 68.9%), 0.0237 (Se: 71.2% and Sp: 61.8%), and
0.1318 (Se: 68.4% and Sp: 41.4%), respectively.

Conclusion: IRT is a promising method for the early detection of OID
and footrot in dairy sheep. However, assessing additional sites on the
foot may further improve diagnostic performance and value.

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European Union (European Social Fund- ESF) through the Operational
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100. Influence of malted millet (*Pennisetum glaucum*) on the growth performance, carcass characteristics and economy of feed conversion of broiler chickens

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5033 **Application:** Malting can be used to improve the nutritional properties
5034 of millet; and the weight gain, feed conversion ratio and sensory proper-
5035 ties of broiler meat.

5036 **Introduction:** Maize, which forms the bulk of energy source in poultry
5037 feeds, is in short supply as a result of industrial and human needs, lead-
5038 ing to high cost of animal products [1]. This can be replaced by millet,
5039 which cheaper production cost. Processing of cereal grains through malt-
5040 ing has been found to improve its nutritional value for livestock [2]. The
5041 aim of this present study was to evaluate the effect of feeding varying
5042 levels of malted and unmalted millet on the growth performance, carcass
5043 characteristics, sensory properties and the economy of feed conversion
5044 of broiler chickens.

5045 **Materials and Methods:** The malted millet was prepared by washing
5046 cleaned millet grains with water, and allowing it to sprout after 36
5047 hours. Six isoproteinous and isocaloric diets were formulated: Diet 1
5048 consisted of a maize based diet and served as the control; Diets 2, 3,
5049 4, 5 and 6 consisted of malted and unmalted millet incorporated into
5050 the diets at 0:100 %, 25:75 %, 50:50 %, 75:25 % and 100:0 % respec-
5051 tively. A total of 216 day old CHI strain of broiler chicken were ran-
5052 domly allotted to the six diets, with each diet consisting of three
5053 replicates of 12 birds per replicate. The diets were fed to the birds *ad li-*
5054 *bitum* for eight weeks and data collected on growth performance. After
5055 the feeding trial, one bird per replicate was randomly selected, slaugh-
5056 tered through cervical dislocation and analyzed for their carcass

5057 characteristics. The meat from each treatment was then evaluated for
5058 its sensory properties such as appearance, flavour, tenderness and juici-
5059 ness using a nine-point Hedonic scale. Data collected were analyzed
5060 using a one way analysis of variance, based on a completely randomized
5061 design model.

5062 **Results:** Malting improved the protein content of the millet grains from
5063 10.42 to 11.90 %; reduced the crude fibre content from 2.40 to 1.30 %;
5064 and reduced the nitrogen-free extracts from 82.39 to 78.00 %. Birds fed
5065 diet containing 50 % malted and 50 % unmalted millet recorded signif-
5066 icantly ($P < 0.05$) higher values in body weight gain (1647.22 g), with
5067 better feed conversion ratio (1.46) than the control diet (2.28). Dressed
5068 weight, weight of kidney, proventriculus, gizzard and heart were signif-
5069 icantly ($P < 0.05$) affected by the dietary treatments; and the meat of
5070 birds fed the 50 % malted millet diet was significantly ($P < 0.05$) more
5071 acceptable than those of the other diets. The feed cost per kg weight gain
5072 were significantly ($P < 0.05$) lower for the malted millet diets than for
5073 the control diet.

5074 **Conclusion:** Birds fed 50 % malted and 50 % unmalted millet diet had
5075 optimal weight gain, better feed conversion ratio and improved sensory
5076 properties; due to the improved nutritional quality of the grains.

5077 **Acknowledgments:** The authors acknowledge the Federal University of
5078 Technology Minna for using their Research Farm.

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