

# Humane Slaughter Association

Improving the welfare of food animals around the world

Spring 2021



Credit: PhotoMIX Ltd./Pexels

## Our CEO Dr Huw Golledge highlights how we've adapted in a challenging year

Welcome to the HSA Spring Newsletter, in what has been an incredibly challenging year since our last Spring update. You can read about our participation in many events (sadly mostly online), the valuable and influential expert advice which we've provided to the Government and others as well as the ground-breaking scientific research which we fund. Below I've highlighted just a couple of the items in the newsletter which show how much impact our work has.

The HSA has taken a particular interest in the welfare concerns around the use of carbon dioxide (CO<sub>2</sub>) for stunning animals at slaughter. We've been especially keen to encourage the search for alternatives which may be more humane than CO<sub>2</sub>. In 2020 we co-organised an important meeting to discuss the welfare impacts of CO<sub>2</sub> and the viability of other methods, and also saw the outcome of a major study we co-funded with Defra to look for an alternative to CO<sub>2</sub> for stunning pigs. You can read about this work in more detail on pages 3 and 7. We are now actively considering what the next steps in identifying an alternative to CO<sub>2</sub> might be.

Plans are underway to resume our face-to-face activities as soon as conditions permit and we eagerly await the chance to return to attending agricultural shows, undertaking welfare assessments at slaughterhouses and markets and the various other activities which are difficult to perform online. We have especially exciting plans to take the HSA message further afield to countries in Africa where we can make a huge difference to welfare during transport and slaughter by sharing our expertise and also look forward to being able to conduct long-planned trips to China to share our expertise with colleagues there.

Our staff have done a marvellous job keeping our activities going under challenging circumstances, I'm really grateful for their tremendous efforts over the past year. I am also delighted to welcome a new member to the team – Dr Birte Nielsen who joins as Assistant Scientific Director for the HSA as well as for the Universities Federation for Animal Welfare (UFAW), our sister charity. Birte will be helping direct our scientific activities and has a wealth of expertise in animal behaviour and welfare. Despite joining us in September, she has yet to meet most of her colleagues in person so we have one more reason to look forward to the day when we can resume work at our office! She introduces herself on page 2.

All this activity cannot happen without your support, so thank you if you do support us through donations, memberships or a gift in your will, and please consider doing so if you don't already. We are incredibly grateful for all your support. ■



Credit: HSA



### CHAIRMAN'S COMMENT

Welcome to our Spring 2021 Newsletter and a round up of some of our activities during what has been a difficult period. However, despite the pandemic the HSA has continued with much of its work. I am proud of the way that the whole team has risen to the challenge and developed innovative ways to get round the impact of COVID-19.

Although our planned overseas visits have had to be deferred until circumstances allow, on a positive note, as you will be able to read on pages 2,3 and 4 we have been able to broaden our reach through more and more events moving online. One recent presentation given by our Technical Director was watched by some 31,000 people. This is outstanding, particularly as much of the new audience was from overseas. As we go to press, staff are investigating the possibility of running some early-evening, topical webinars to continue our audience engagement so do keep an eye on the website.

On page 7, you will be able to read about the results of our joint funding with Defra on whether Low Atmospheric Pressure Stunning (LAPS) is a more humane alternative to high concentrations of CO<sub>2</sub> for stunning pigs at slaughter. Whilst LAPS does not appear to be the humane alternative to CO<sub>2</sub> that many had hoped it would be, this was a crucial study that clearly demonstrates the problems with LAPS and now allows the focus of future research to shift to other potential improvements.

I would like to take this opportunity to thank you for your thoughts and support during what has, without doubt, also been a difficult time for you and your families. ■

Alick Simmons  
BVMS MSc MRCVS  
Chair

## Our new Assistant Scientific Director introduces herself

My name is Birte Nielsen and I have a background in applied animal behaviour science, with a PhD in applied ethology from the University of Edinburgh. In September I took up my new post as Assistant Scientific Director for UFAW and the HSA, and I am over the moon! Having spent most of my career as a research scientist, I am delighted to be involved in putting scientific evidence to good use in the improvement of animal welfare.

For the last 25 plus years, I have worked both as a scientist and as a research leader on a variety of species and subjects. Few scientists have this opportunity, and my experience from animal welfare research on a variety of livestock species, including ruminants, pigs and poultry, has prepared me well to contribute to the work of both UFAW and HSA. Both charities are linking scientific knowledge with real-life animal welfare issues and, by providing evidence-based education and information, UFAW and the HSA are central for the application of science into practice in the service of animal welfare.

As a member of a French governmental working group on animal welfare, I have visited several pig abattoirs and contributed to the evaluation of the French guidelines for best practice for protection of cattle and pigs at slaughter. When I worked in Denmark, I was teaching veterinarians and abattoir staff how to assess footpad dermatitis in broilers and have therefore spent many hours (and nights!) in Danish poultry slaughter plants. The welfare of food animals on the way to and at slaughter is an area where great advances can be made. I hope to apply my experience in the processes involved at the end of life for farm animal species and the welfare concerns raised by these practices to further the aims of the HSA.



Credit: B.Nielsen/HSA

Although it is strange to start a new job from your spare bedroom, my new colleagues have made me feel very welcome and made it both easy and fun to get to grips with the daily workings of the two charities. I look forward to contributing to the continued strengthening and development of the HSA and UFAW and their future accomplishments.



You can learn more about the HSA's staff on our website [hsa.org.uk/about/hsa-staff](https://hsa.org.uk/about/hsa-staff) ■

## Challenges of Animal Protection and Welfare in the Context of COVID-19 Pandemic

Credit: HSA



On the 8<sup>th</sup> January 2020 the China Biodiversity Conservation and Green Development Foundation (CBCGDF) ran a virtual conference entitled *Challenges of Animal Protection and Welfare in the Context of COVID-19 Pandemic*. This conference was part-funded by the HSA's sister charity the Universities Federation for Animal Welfare (UFAW) and the HSA was invited to provide a speaker to cover the subject of on-farm slaughter or killing of livestock within the context of the pandemic; for example it may become necessary to kill animals on-farm when slaughterhouse capacity is reduced due to COVID-19 outbreaks amongst abattoir staff. The HSA's Technical Director, Charlie Mason, did the honours; presenting the subject from the UK perspective. He joined two other European speakers, Dr Rebeca Garcia Pinillos of One Welfare CIC and Professor Jeroen Dewulf from Ghent University, who spoke on the concept of One Welfare and biosecurity, respectively. A lengthy question and answer session followed the talks, which were attended by 31,700 people! ■

# Humanely Ending the Lives of Animals – FSVO/UFAW/HSA online symposium (3–4<sup>th</sup> November 2020)

The Swiss Federal Food Safety and Veterinary Office (FSVO) organised two meetings in Switzerland in 2018 and 2019 which looked at the animal welfare issues surrounding the use of CO<sub>2</sub> and alternative methods and subsequently focussed on developing a research strategy aimed at providing answers to the unsolved questions regarding the use of CO<sub>2</sub> and alternatives. The HSA, and our sister charity UFAW, participated in these meetings, as both organisations share concerns about the humaneness of the use of carbon dioxide to kill animals and would like to see the development of more humane and practical alternatives.

A third symposium was planned for summer 2020, with the aim of reviewing progress towards identifying alternatives to CO<sub>2</sub> and better characterising its effects on animal welfare. Unsurprisingly, the symposium was unable to go ahead in Switzerland as a result of the COVID-19 pandemic, but the HSA and UFAW stepped in to assist our Swiss colleagues in moving the event to an online symposium which was held in early November 2020. The meeting originally planned in Switzerland would likely have been attended by around 100 people, almost entirely from Europe. In contrast, the online symposium attracted registrations from almost 700 people from countries as far afield as New Zealand, Brazil, Peru, Thailand, the Philippines and Zimbabwe, to name but a few and it is gratifying to see such worldwide interest in difficult animal welfare issues.

The keynote lecture was given by Dr Mohan Raj, formerly of Bristol University, whose pioneering research in the 1990s showed that the inert gas argon appears to be much less aversive to pigs than CO<sub>2</sub>. Mohan presented video evidence of the stark difference in behaviour of pigs exposed to argon versus CO<sub>2</sub>, showing that whilst pigs will actively avoid a chamber filled with CO<sub>2</sub> given the choice, even if it contains a highly-desired food reward, they will tolerate exposure to argon right up to the point where they begin to lose consciousness. This strongly suggests that argon could be a more humane way of stunning pigs for slaughter.

Several other talks concerned more recent research on methods to slaughter pigs. Cecilia Lindahl from the Rise Institutes in Sweden presented preliminary results looking at the use of high expansion nitrogen-filled foam to stun pigs. This novel method immerses pigs in a foam filled with nitrogen, killing the animals by anoxia. Initial results showed little evidence of strong aversion to the foam and demonstrated that the foam could be used to effectively kill pigs. Further work is needed to test whether the method is effective for slaughter weight pigs and, importantly, to see if it could be used for group-stunning. Perhaps the most anticipated talk of the day came from Jessica Martin and her colleagues from the Edinburgh and Glasgow Universities and the Roslin Institute on Low Atmospheric Pressure Stunning (LAPS) for stunning pigs – see page 7 for the report.

Whilst we wait for new developments in pig slaughter, it is also crucial to optimise the current methods. Drs Karen Von Holleben and Martin Von Wenzlawowicz from bsi Schwarzenbek in Germany presented their important work looking at the behaviour of pigs undergoing CO<sub>2</sub> stunning in various commercial plants. They combined these observations with

accurate measurements of the CO<sub>2</sub> concentration throughout the process. Their data is valuable, both to allow refinement of existing CO<sub>2</sub> stunning and also for studies which compare CO<sub>2</sub> stunning to alternative methods.

Other talks concerned the slaughter of rabbits and chickens. Dr Sabine Gebhardt-Henrich from the University of Bern presented another study, part-funded by the HSA, which examined the responses of chickens to CO<sub>2</sub>, nitrogen or LAPS. To be certain that alternative methods such as LAPS or nitrogen are more humane than CO<sub>2</sub>, it is important to demonstrate that birds experience less aversion than they do when exposed to CO<sub>2</sub>. To test whether chickens experience aversion when undergoing the various stunning methods, Sabine and colleagues trained chickens to move away from a food source whenever they experienced a negative stimulus, such as water falling on them. Once the birds had learned the response, they tested for the same avoidance response when the birds were exposed to the stunning methods. Unfortunately, possibly because some of the methods induce ataxia, the results did not clearly demonstrate aversion, but the group has valuable data showing that chickens can learn to signal when they feel aversion and they believe that if the birds use a different mechanism, such as pecking a target to signal aversion, they may be able to use this technique to quantify aversion to stunning techniques.

Jessica Walsh and her colleagues from the University of Guelph in Canada examined the use of CO<sub>2</sub> for on-farm euthanasia of commercial meat rabbits; testing the response to different rates of filling and comparing these to physical methods (non-penetrating captive bolt, blunt-force trauma and a device which assisted with cervical dislocation). Both captive-bolt and cervical dislocation were found to be highly effective, whereas blunt-force trauma carried with it a risk of failure and consequently of significant compromise of welfare. On-farm euthanasia of rabbits in Canada is a substantial welfare issue - a survey carried out by Jessica and her colleagues showed significant numbers of farmers were choosing to let animals die, rather than utilising physical euthanasia methods which they find aesthetically unpleasant. Some farmers may prefer to use CO<sub>2</sub> to avoid the perceived unpleasantness of physical methods, and the researchers report that no “obvious” signs of distress were observed when rabbits were euthanised with a fill-rate of 58% CO<sub>2</sub> per minute, and thus CO<sub>2</sub> may be a viable alternative. However, more detailed examination of the welfare impacts of CO<sub>2</sub> on rabbits may be needed to confirm whether this method is genuinely as humane as captive bolt stunning.

It is clear there is still much to be done to identify and implement methods which can be demonstrated to be more humane than CO<sub>2</sub>, but encouraging to see the ongoing research effort and the large number of people showing interest in it. We are immensely grateful to all those who shared their work and to our colleagues at UFAW and the FSVO for helping to organise the meeting. You can view recordings of the talks from the meeting at - [tiny.cc/FSVO](https://tiny.cc/FSVO).

*A version of this summary originally appeared in The Meat Hygienist, published by the Association of Meat Inspectors ([www.meatinspectors.co.uk](http://www.meatinspectors.co.uk)) and this edited version is reproduced with their kind permission. ■*

### Scottish Smallholder Festival

The HSA was delighted to be one of 16 organisations giving talks at the virtual Scottish Smallholder Festival in October 2020. The festival, organised by Smallholding Scotland and supported by The Scottish Government, is Scotland's largest smallholder event and aims to inform, educate and inspire, and to give attendees the opportunity to access information and advice from experienced practitioners.

Prior to the pandemic the festival usually received an approximate 1,000-person footfall and its virtual seminar programme, 'designed to provide an experience as close to the real festival as possible' also attracted more than 1,000 viewers that weekend, and more on-demand viewers since, with the HSA talk the third most viewed at the time of writing.

HSA Technical Officer Jade Spence, who was asked to provide advice on small-scale, humane slaughter of poultry, said: "Hobbyists and small producers often ask the HSA how they can protect the welfare of their poultry at the time of killing, whether culling sick or injured individuals, or if choosing a method of on-farm slaughter for year-round or seasonal meat processing. To prevent suffering and achieve acceptable welfare, we must consider birds' anatomies and behaviour, with respect to the available techniques. In turn, describing to potential consumers why certain procedures are performed, encourages informed food choices and wider adoption of humane practices."

The festival talks are available to watch online, free-of-charge, at [2020.ssgf.uk/talks/](https://2020.ssgf.uk/talks/) Although Jade's talk was presented at this Scottish festival, the information within it is applicable throughout the UK. For smallholders who also keep a few pigs or sheep, the talk briefly features guidance for small-scale slaughter of mammalian livestock, including home slaughter for personal domestic consumption.



Further information for poultry producer-processors can be found at [hsa.org.uk/publications](https://hsa.org.uk/publications) – Practical Slaughter of Poultry (online guide) and Technical Note 27 (printed publication). ■

### 4<sup>th</sup> Africa Animal Welfare Conference

The HSA attended the four-day virtual 4<sup>th</sup> Africa Animal Welfare Conference in September 2020, co-hosted by Africa Network for Animal Welfare (ANAW) in collaboration with the United Nations Environment Programme (UNEP) and the African Union Inter-African Bureau for Animal Resources (AU-IBAR). The conference brings together 'professionals and practitioners ... to discuss issues that cut across animal welfare, wildlife and environmental conservation'. HSA materials were utilised by a presenter from the University of Ghana, and contacts described by another presenter from the USA may prove useful in a future HSA webinar on mobile slaughter facilities. ■

### HSA presents at international aquatic welfare conference

Technical Officer Jade Spence was invited to speak and be a panellist at The Humane League UK's week-long virtual Aquatic Animal Welfare Conference 2020 in November, which attracted over 450 viewers. Thirty speakers from around the world gave presentations on wild-caught and farmed fish, crustaceans and octopus, and considered these animals' sentience, welfare needs and how to minimise the potential for suffering, with respect to current industry practices and socio-economic barriers. Strategies for improving welfare and raising public awareness were deliberated. Jade was asked to discuss improving slaughter of finfish, decapod crustaceans and cephalopods in practice and described some of the many types of finfish farmed worldwide, potential stressors during killing procedures and common methods of inhumane killing, good practices during pre-slaughter handling, the principles of more-humane slaughter and available stunning techniques, and how they can offer benefits for product quality.

Jade also discussed concerns for cephalopod welfare and the lack of knowledge regarding their humane killing for consumption, and drew attention to new research projects recently awarded funds by the HSA to investigate and advance the world's understanding of how to improve aquatic animal welfare (see the HSA's Annual Report 2020 for more information). Jade said: "we must understand their physiological, behavioural and neurological idiosyncrasies, to tailor slaughtering systems to suit and be commercially viable. Similarly, legislative changes typically require extensive, robust scientific evidence. Informing consumers of assurance schemes for aquatic animals helps to promote more humane food choices." At the time of writing, the HSA presentation is the seventh most viewed of the conference, and we hope this will help to promote more humane treatment of aquatic animals globally. ■



Credit: Enjin\_Akyuro/Pexels

# EDUCATION AND TRAINING

The COVID-19 restrictions have severely curtailed the HSA's out-of-office activities, but our staff have continued to give lectures and talks predominantly online and, when possible within the COVID guidelines, have delivered socially-distanced training in person.

Credit: Pikel2013/Pexels



## Small Shepherds' Club

Early in 2020 the HSA was contacted by a representative of the Small Shepherds' Club. The club provides training and support for people who have, or would like to have, a small flock of sheep and want to learn how to care for them properly. It has nearly 300 members mainly in Surrey, Sussex and Hampshire with a few from Kent and even further afield. The sizes of the members' flocks are generally small: the smallest have two or three sheep but the average flock size is around sixteen and the biggest is over a thousand. The HSA was invited to give a talk on legal, humane methods of on-farm emergency killing of sheep using captive-bolt equipment and firearms. The presentation was given remotely by the Technical Director, Charlie Mason on the 18<sup>th</sup> November. Although a difficult subject, it is one with which all livestock keepers have the responsibility to familiarise themselves and the feedback from the attendees was very positive, including an invite to a face-to-face evening meeting as soon as COVID restrictions allow. The club has an excellent website, with a wealth of really useful information invaluable to all sheep farmers, which can be reached using the following link: [smallshepherdsclub.org.uk](http://smallshepherdsclub.org.uk). ■

## HSA virtual events

In the light of the current pandemic restrictions limiting the extent to which the HSA can reach out to stakeholders, staff are investigating the possibility of running some early-evening, topical webinars. It is hoped the first of these may have taken place by the time you read this newsletter. Possible topics include: animal welfare costs and benefits of local, mobile and/or pop-up abattoirs; minimising excessive lengths (distance and duration) of livestock transport; rolling out poultry slaughter training and assessment to smallholders and seasonal producers. Keep your eyes on the website for further details and dates. ■

## Poultry slaughter training and assessment

At the end of October 2020, the Technical Director, Charlie Mason and Technical Officer, Susan Richmond, delivered a training course on the practical slaughter of poultry for seasonal producers at a farm in the south of England. Due to restructuring and centralisation of the Animal and Plant Health Agency (APHA), coupled with COVID-19 restrictions, this course had taken 18 months to organise. Seven trainees attended the course and were assessed for competence using hand-held electrical stunning equipment and the CPK non-penetrating captive-bolt device. Following theory and practical training, two veterinary officers from the APHA assessed the trainees: this involved them observing each delegate stunning and bleeding a number of birds and correctly answering a selection of questions. All the trainees passed the assessment which entitles them to apply for a WATOK licence to slaughter domestic fowl on-farm. As well as contributing to the training, Susan was one of the successful assesseees. If possible, the HSA plans to run at least one similar course, at the same premises, in the summer – anyone interested in attending should keep an eye on the HSA website. ■

## New guidance underway

The HSA is developing new Technical Notes for minority farmed species including buffalo, donkeys, llamas and alpacas. The animals are kept and farmed in relatively small numbers in the UK, but are more popular in other countries. It is important that their specific behavioural and physiological needs are met in order to maintain high welfare at slaughter. ■



Credit: Magda Ehlers/Pexel

### Wales Government Veterinary Network online CPD conference

HSA Technical Officer Susan Richmond attended and spoke at the Wales Government Veterinary Network virtual CPD meeting held on the 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup> August 2020. The presentation focussed on the welfare of animals at livestock markets and included the findings of our 2019 survey report *Livestock Markets: 200 Years On*. ■



Credit: Art Tower/Photo

### Consultations

The HSA is one of the NGOs regularly asked by Government and other organisations, including industry, to scrutinize and comment on various subjects; the main ones being new legislation, proposed changes to existing legislation and welfare at slaughter standards. Responding to these consultations is some of the most important work undertaken by the HSA, albeit low-profile compared to other efforts. It gives the HSA opportunities to reach, inform and influence decision-makers which, in turn, may result in real improvements to animal welfare between the farm gate and slaughter. The HSA is currently compiling responses to three consultations:

- Defra consultation on improvements to animal welfare in transport
- Scottish Government's consultation on the Farm Animal Welfare Committee's *Opinion On The Welfare Of Animals During Transport*
- Red Tractor 2021 Standards Review

The deadlines for these consultations were 25<sup>th</sup> February, 26<sup>th</sup> February and 5<sup>th</sup> March, respectively. ■

### Yorkshire Dairy Goats and BQP

In late August 2020 the HSA's Technical Director, Charlie Mason, delivered training to the staff of Yorkshire Dairy Goats at St Helen's Farm near Pocklington. This is the largest dairy goat enterprise in the UK with 4,000 plus milking nannies and, along with five other farms, supplies over 70% of the goats' milk consumed in the UK under the St Helen's Farm brand. Representatives from the five other farms were also on the course. Selected members of the farm staff were trained in the correct use and maintenance of captive-bolt equipment for the emergency killing of all classes of goats. The training comprised two hours of theory, followed by a practical session during which each trainee demonstrated competence using the appropriate equipment on the different classes of goats; this was followed up with training in the maintenance of the equipment. A similar course was given to veterinary and field staff of BQP, a large pig-production company based in Suffolk. The latter was a refresher course and another is planned as soon as COVID-19 restrictions allow it to go ahead. The courses for BQP are mainly theory, but include a practical session on maintenance. ■



Credit: Tim Scavener/AgriPhoto

## Alternatives to high concentration CO<sub>2</sub> for stunning pigs

In 2018, in collaboration with Defra (The UK Government agriculture department), the HSA awarded funding to Dr Dorothy McKeegan and her colleagues at Scotland's Rural College, Edinburgh and Glasgow Universities to examine whether Low Atmospheric Pressure Stunning (LAPS) is a more humane alternative to high concentrations of CO<sub>2</sub> for stunning pigs at slaughter. High concentrations of CO<sub>2</sub>, which are routinely used to stun pigs in commercial abattoirs, are thought to cause pain and distress to pigs and there have been calls to look for alternatives. As early as 2003 the Farm Animal Welfare Committee (FAWC) recommended that the use of high concentration CO<sub>2</sub> be phased out. One reason this has not occurred is that it is often argued there is a lack of a demonstrably humane alternative to CO<sub>2</sub> which is also practical and economical. In theory LAPS could be such an alternative.

LAPS is simple in principle; it stuns animals by gradually lowering the air pressure in a sealed chamber, depriving the animals of oxygen until they lose consciousness. In humans this process appears to induce unconsciousness without apparent unpleasant effects (it is often tested on pilots to train them to cope with depressurisation effects, where it causes cognitive impairment and euphoria). LAPS also appears to be humane in chickens, it has recently been approved in the EU as a slaughter method for broiler chickens up to 4kg, following the publication of several scientific studies by Dr McKeegan and colleagues showing little evidence of poor welfare in birds stunned using LAPS. Many (including the HSA and Defra) therefore wondered whether LAPS might also be a practical and humane alternative for stunning pigs at slaughter. However, until now there has been only very limited research into whether it might be humane when used to stun mammals.

After two years of intensive work to measure physiological and behavioural responses of pigs exposed to LAPS and to compare these to responses of pigs exposed to CO<sub>2</sub>, Dr McKeegan and her colleagues have reached the conclusion that LAPS is unlikely to be a humane alternative to CO<sub>2</sub>. Behavioural responses of pigs suggested they might be experiencing pain, which the team suggest may be due to damage to the eardrum. There were also signs of stress from a protracted period when pigs stunned with LAPS may have been immobile but remained conscious. As expected, the study also confirms there are serious welfare concerns about the use of CO<sub>2</sub>.

Whilst we are disappointed that LAPS does not appear to be the humane alternative to CO<sub>2</sub> that many had hoped for, this was a crucial study that clearly demonstrates the problems with LAPS and now allows the focus of future research to shift to other potential improvements to pig slaughter. A detailed report on the outcomes of the study has been prepared and will be followed by scientific publications which will detail the results of the study. ■

## 2019/20 HSA Student/Trainee Scholarships

Our Student/Trainee Scholarships offer students or industry trainees the chance to carry out a short project, giving them the chance to get their first experience of scientific research in animal welfare. See [hsa.org.uk/stss](https://hsa.org.uk/stss) for more details.

In 2020 we supported Samuel Pearce of Bristol University with a scholarship for his project *An Investigation into the Handling and Transportation of UK Farmed Deer*.

Deer farming is a growing sector of the UK livestock industry as the demand for venison increases. This is resulting in growing numbers of red deer being transported around the UK to slaughter. There are few dedicated deer abattoirs in the UK, with only one supplying a major UK supermarket, leading to deer travelling considerable distances before reaching the lairage, where they are often kept overnight. There are multiple factors that can cause welfare issues during the transport of deer including overcrowding, mixing of unfamiliar or different sized animals, high speed cornering or braking, unsuitable vehicles or excessive journey length. Samuel's study aimed to investigate the nature of the journeys deer undergo.

Samuel's project, which was due for competition in October last year, has been delayed as a result of COVID-19 but is now on course to be finalised within the next few weeks. Samuel said: "So much of the work on deer welfare took place over 15 years ago and during this period much about the industry has changed dramatically. It is therefore imperative that we find out more about the current situation with respect to the pre-transport procedures deer undergo, lengths of journeys, transportation used and lairage times of deer in order to direct future research to improve welfare standards. This project aims to gather this information in order to understand how transport of farmed deer in the UK may affect deer welfare and inform future research." ■



Credit: J Spence/HSA

## Why your support is vital to the HSA's work

Every penny the HSA receives makes a difference – now more than ever. The coming year will also be one of challenges but, with your help, our work to benefit food animal welfare will continue.

As you will have read on page 1, the impact of COVID-19 has meant that some of the HSA's work, such as visits to markets and slaughterhouses, has been unable to take place. Our ambitious plans to travel overseas and expand our work to countries which farm a large number of animals and where there are opportunities to improve standards of animal welfare research, education and legislation, have also had to be deferred. However, despite these challenges, we have been working to make more of our guidance available online and to hold, and present at, virtual meetings and seminars. This has enabled us to reach a much wider audience from further afield, thereby increasing our impact and bringing the charity and its work to whole new audiences. For example, in January this year, a presentation we gave to the China Biodiversity Conservation and Green Development Foundation enabled us to reach over 31,000 people (see page 2).

We understand these are difficult times for us all but, if you haven't already done so, please would you consider making a donation? Your gift could help towards maximising the impact of our expertise through outreach, education and training via:

- Providing translated guidance and materials
- Supporting our activities in countries where we can have the greatest impact in improving welfare standards at slaughter and/or during marketing and transport
- Enabling the organisation of open-access online webinars/symposia
- Delivering advice and training which has real-world animal welfare impact

Your kindness does make a difference and your support has never been so important in ensuring that the work goes on. Thank you. ■

## You can help the HSA by:

**Becoming a member** – membership is just £15 per year for individuals and £5 per year for students. See [hsa.org.uk/join](https://hsa.org.uk/join).

**Making a donation** – large or small, your donation means a great deal to the lives of many animals, and is vital in helping us continue the HSA's work. You can pledge a monthly amount of your choice, or make a one-off donation.

### Monthly

£3 will help us to deliver virtual online training and guidance

£10 enables us to provide up-to-date technical information and advice on all aspects of animal handling, transport and slaughter

### Just Once

£20 will assist in the cost of translating information and advice into various languages

£50 will help us to fund essential research aimed at improving animal welfare beyond the farm gate

**Leaving a gift in your will** – a gift in your will, regardless of size, will ensure that we can continue to make a lasting difference to the welfare of food animals during marketing, transport and slaughter. Gifts left in wills make up over 50% of our income, so every gift is extremely valuable to us – [hsa.org.uk/legacy](https://hsa.org.uk/legacy).

**Purchasing gifts from our gift selection** – every purchase helps support and promote the work of the HSA.

If you'd like to become a member, renew your membership or make a donation now you can do so securely online - [hsa.org.uk/support](https://hsa.org.uk/support).

### Other ways you can help

**Recruit a member** – if you are already a member you could recruit a friend or colleague.

**Follow us on social media and share our content** - Twitter - @HSAofficial, LinkedIn [linkedin.com/company/humane-slaughter-association](https://www.linkedin.com/company/humane-slaughter-association). ■

## Appeal update

Thank you to everyone who supported our Spring Appeal last year to assist with the cost of translating our online guide *On-Farm Killing for Disease Control Purposes* into Chinese. This translation should help both decision makers and staff carrying out various roles during an outbreak of contagious disease. The guide covers the methods which are appropriate for the humane killing of poultry and mammals on-farm and will be available on our website for download upon completion. ■



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