



Letters & Notices

ENVIRONMENT

Strong 'on farm' focus needed on climate change

WE read, with considerable interest, the recent editorial on the climate emergency (*VR*, 11/18 September 2021, vol 189, p 171). In particular, the highlighting of a renewed sense of urgency in thinking on the climate change crisis and the accompanying 'call to action' struck a firm chord with us.

At VetSalus we have been working for a number of years since our launch in September 2018 to extend the influence and knowledge of the profession about this important matter, both internationally and within the UK. We are an international consultancy group with the aim to work broadly in the area of One Health, with a particular emphasis on food production from animals and related matters, including antimicrobial resistance and environmental issues, including sustainability.

Over the past three years, we have been working on a number of projects connected to climate change and sustainable farming. Some of these, including our recent webinar on sustainability for XLVets, have been joint ventures with our colleagues at Vet Sustain (www.vetsustain.org).

There can be little doubt that the entire profession has an important role to play in tackling the international climate crisis. We believe this role will be highly varied but it will begin with a strong focus 'on farm', in that nearly every piece of professional advice will have a direct or indirect impact on the carbon footprint of the farming business.

May we urge all members of the profession, particularly those working in food production from animals, who have an interest in climate change and sustainable farming, to visit our website (www.vetsalus.com).

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ENVIRONMENT

Imidacloprid contamination risk in marine environment

WE are concerned at the possibility that the neonicotinoid pesticide imidacloprid may be used on Scottish salmon farms (*VR*, 21 August–4 September 2021, vol 189, p 133).

Imidacloprid is a potent neurotoxin that can be fatal to a wide range of terrestrial and aquatic invertebrates following exposure to just a few nanograms.^{1,2} Its effects on bee populations resulted in the 2018 EU ban on its outdoor agricultural use on plant crops. Imidacloprid is used in flea-control products for pets, and has been shown to be contaminating UK rivers.³

The EU has adopted a maximum residue limit (MRL) for imidacloprid in fin fish, including salmon,^{4,5} paving the way for possible imidacloprid use in salmon farms; however, the European Parliament is arguing that imidacloprid should not have an MRL for use in marine environments.^{6,7}

As mentioned in *Vet Record's* news article, Ectosan Vet (Benchmark Animal Health) – a product containing imidacloprid – has received a Norwegian marketing authorisation for use against sea lice in Atlantic salmon and rainbow trout.⁸

“**There can be little doubt that the entire profession has an important role to play in tackling the international climate crisis**”

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There are over 200 salmon farms in Scottish waters – many with Norwegian interests – and the industry is growing rapidly.

Imidacloprid can persist for months or years in the absence of sunlight,^{1,2} allowing the possibility of accumulation in marine sediments and long-term environmental contamination impossible to clean up.

There is very little information about the effects of neonicotinoid contamination on marine ecosystems, and no monitoring and surveillance of pollution levels. When imidacloprid was used in rice paddies around Lake Shinji, Japan, from 1993 onwards, zooplankton populations, and the fish populations which depended on them, collapsed within a year due to drainage run-off.⁹

The Scottish Parliament Environment, Climate Change and Land Reform Committee¹⁰ reported on the environmental impacts of salmon farming, noting 'significant gaps in knowledge, data, monitoring and research around the adverse risk the sector poses to ecosystem functions, their resilience and the supply of ecosystem services. Further information is necessary in order to set realistic targets for the industry that fall within environmental limits.'

Our opinion is that the risk that imidacloprid presents to ecosystems when used in the marine environment is too great, and the precautionary principle must be applied.

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BOVINE DISEASE

Investigating bovine stillbirths

THE recent comprehensive *In Practice* article on investigating stillbirths on farm from Geraghty and colleagues¹ prompts me to reflect on experiences during my own career.

Fetal, maternal, infectious and non-infectious factors can be involved in the aetiology of abortions/stillbirths.² There may be no pathognomic lesions

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in the fetus/calf/placenta where maternal or non-infectious factors are the cause. It might be prudent to request a comprehensive set of dam blood samples and a completed questionnaire with any carcase and placenta submitted for diagnosis.

Hypoxia is the common factor in bovine stillbirth. The calf has a dramatically increased oxygen demand after it leaves the uterus and enters the vagina. Any factor lowering the oxygen tension in the blood of the dam and/or calf can cause stillbirth.

Torsion of the umbilical cord has been implicated. In posterior presentation, the cord could be constricted between the calf's thorax and the dam's pelvis. The cord can wrap around a calf's leg.

Nitrate/nitrite poisoning causes hypoxia in cattle with abortions, mummified fetuses and occasional stillbirths.^{3,4} I investigated cases of nitrate poisoning from hay, barley straw and kale between 1975 and 1985. ADAS nutrition chemists, agronomists and soil scientists provided new insights.

I also studied nitrate poisoning in the Netherlands, where it was a significant problem. Researchers had recorded dangerously lowered oxygen tension in umbilical vein blood in experimental nitrate/nitrite poisoning.⁵ A nitrate poisoning alert was routinely added to a silage analysis report recording a nitrate value of >1.5 per cent. The incidence of mummified fetuses was elevated following a summer of high incidence of nitrate poisoning.

I never confirmed nitrate poisoning as a cause of stillbirth. Nitrate/nitrite poisoning is not common in the UK, but incidence could increase with global warming.

A moderate number of necropsies were completed on stillborn calves while I was a veterinary investigation officer from 1972 to 1999. Most were of little value, except for 'exclusion diagnosis'. Goitre was occasionally detected, some from serious herd problems. Thyroid glands from all aborted and stillborn calves were routinely weighed and checked as a percentage of bodyweight.

Congenital/teratogenic abnormalities cannot always be

assumed to be the cause of a stillbirth; for example, cleft palate can be found in calves surviving birth. DNA analysis is occasionally indicated. It is important to recognise lesions caused by forced traction delivery and decomposition as results, not causes of, stillbirth.

If stillbirths appear to be associated with a particular sire, the artificial insemination supplier should be informed. Breed of sire may be significant, especially if the problem is in the heifers.

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DEATH NOTICES

Bartram On 27 September 2021, David James Bartram, BVetMed, DipECSRHM, FRCVS, of Fareham, Hampshire. Mr Bartram qualified from London in 1988.

Taylor On 16 December 2020, Michael Claude Taylor, BVMS, MRCVS, of Ryde, Isle of Wight. Mr Taylor qualified from Glasgow in 1958.

CORRECTION

Obituary: Professor Richard Henry Collins Penny (VR, 25 September/2 October 2021, vol 189, p 253). The dates for Richard Penny's birth and death were given incorrectly. They should have read 1923 and 27 July 2021. The error is regretted.

HOW TO SUBMIT A LETTER OR NOTICE

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