

## **Special Issue of *Process Safety and Environmental Protection***

### **1. Special Issue Title**

Environmental Management of Mass Carcasses, *Process Safety and Environmental Protection* (<https://www.journals.elsevier.com/process-safety-and-environmental-protection>)

### **2. Scope of the Special Issue**

Outbreaks of foot-and-mouth-disease have severe implications for animal farming. Taiwan, the UK, China and Korea have all suffered significant economic losses from this highly infectious virus. The Korean outbreak of foot-and-mouth disease in the winter of 2010 resulted in the burial of over three million pigs and cows to prevent an epidemic. At present, concerns over the possible leakage of leachate discharged from the decomposing carcasses of infected animals, as well as the contamination of soil and groundwater resources, are mounting.

Livestock culling is a primary protocol used in many countries to mitigate the spread of the virus during animal disease outbreaks. Korea is unique in limiting the deployment of this protocol mainly due to conflicts between stakeholders. Government agencies, livestock breeding farmers, and non-government organizations all influence every step of the decision-making process and even technology development. Avoiding widespread livestock culling is of interest to many countries, however ensuring an assemblage of technologies to cope with a national disaster can hamper this challenge. There is worldwide interest in disaster prevention, and the goal of carcass management is to achieve biosecurity and promote better public health.

Various types of hazards and risks are associated with carcass management during an animal disease outbreak. Maximizing biosecurity during an outbreak is one of the primary reasons for mass carcass disposal. Burial is a common disposal practice and used in the UK and Korea during disease outbreaks due to simplicity and implementation, particularly where livestock farms are densely populated. However, the biosecurity of carcass disposal is often overlooked, again mainly due to stakeholders' critical demands. This challenge often leads to other risks to public health and the environment. Understanding the use of antibiotic agents, which are typical hazards, should not be overlooked when assessing the potential threats of mass carcasses to public health. Medicines injected to livestock to prevent early mortality may remain in the environment because of the mass depopulation of livestock. This practice represents a critical environmental and health issue to consider when strategies are developed to secure public safety. Some burial sites in Korea are being used for crops without compliance to guidelines and thus, they a potential threat to public health. Furthermore, Korea is the only country that allows the relocation of depopulated carcasses shortly after burial when the groundwater quality maybe vulnerable or has yet to be assessed in terms of its effect on public health.

This journal issue studies state-of-the-art technologies and strategies developed to minimize the adverse impacts of burial sites. The topics included are ecosystem evaluation including; ecotoxicological risk assessments, energy conversion of carcasses, advanced technological application in the construction of carcass burial sites, including new types of membranes, and policy issues related to securing and monitoring carcass burial sites.

The papers selected for this special issue will be subject to review procedure with the aim of rapidly disseminating the research results on developments, and applications widely to the research and practitioner community.

*Key Words:* Biosecurity enhancement of burial managements, Environmental risk management of burial sites, Enhancement of carcasses decomposition, Assessment of soil and groundwater quality in the vicinity of burial sites, Remediation of leachate-contaminated groundwater and soil, and policy issues relating to securing and monitoring the burial sites.

### **3. Submission Deadline**

August 31<sup>th</sup>, 2018

### **4. Guest Editors:**

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## **CALL FOR PAPERSs**

*Special Issue* – Environmental Management of Mass Carcasses

Manuscript submission deadline: August 31<sup>th</sup>, 2018

This special issue of *Process Safety and Environmental Protection*, with a theme of ‘Environmental Management of Mass Carcasses’, aims to report the latest research developments related to mass carcasses management. This issue will fulfil the knowledge gaps in the current lack of updated and comprehensive information about (1) the technologies, policies and regulations concerning the mass carcasses due to disease outbreaks and natural disasters; and (2) environmental management of hazardous wastes and emerging toxic substances using various forms of technologies.