

Alternatives to animal disposal, including the use of foresight technology and agri-intelligence – introduction

The control of major animal diseases has been tremendously successful in enhancing animal production and the globalisation of trade in animals and animal products. The higher health status of animals achieved today, particularly in developed countries, has substantially contributed to the economic productivity and prosperity of such countries. It has also resulted in a readily available and reasonably priced supply of high quality animal protein for human populations.

However, the enhanced standard of animal health has been accompanied by a commensurate and ever increasing level of vulnerability to the introduction or re-introduction of serious animal or zoonotic diseases. Moreover, in modern animal husbandry practices, very large numbers of animals are raised in close proximity. These factors further amplify the vulnerability to disease introduction and transmission, and have led to a global, almost paranoiac, fear of disease introduction because of the repressive trade bans which continue to be imposed at the mere suggestion of such an event. Such bans, whether justified or not, result in profound economic consequences for affected trading countries. This has made it almost impossible for decision-makers to select any course of action other than a 'stamping-out' approach.

Decades of experience have shown that the stamping-out approach has been relatively effective and successful for disease control and eradication from defined geographical areas. It has, however, resulted in major hardships, economic losses, environmental damage, negative societal reaction, producer distress, concerns for animal welfare, the destruction of massive numbers of animals and the loss of valuable animal protein.

In a parallel development, the World Organisation for Animal Health (OIE: Office International des Epizooties) has established guidelines for safe trade in animals and animal products, which essentially are science-based procedures to identify and mitigate disease risks. These guidelines are continually being developed and updated by world experts using the latest scientific information under the OIE process. When approved by the 169 member countries of the OIE, these guidelines are published annually as the *Terrestrial animal health code*. Nevertheless, despite efforts to maintain the relevance of the *Code*, the resulting standards have not always been uniformly adopted and implemented by the principal trading nations. This too has resulted in significant hardships and increased pressure to apply stamping out.

Under certain circumstances, as is the case with specific zoonotic diseases, stamping out may be the only legitimate and effective approach that can be applied. However, in many circumstances, stamping out is increasingly becoming less well accepted, less appropriate, and may even become prohibitive and unacceptable.

Therefore, it has become imperative to search for alternative approaches to mass animal destruction and disposal for the control of animal diseases and to develop approaches that effectively control animal diseases yet minimise the multiple detrimental aspects of the mass animal destruction approach of stamping out.

The papers of this monograph display a variety of alternative approaches and the rationale that led to them. Together, they underscore the reasoning that justifies this search.

Such alternatives will only have a significant impact if they provide legitimate approaches to decision-makers. These approaches must guide the anticipation, prevention or mitigation of the catastrophic consequences of animal diseases on human health, on the security of the food supply, on the welfare of animals and on the economics of the production and trade of animals and animal products.

Ideally, if such alternatives could be accepted on a national scale, there is a possibility that they could be implemented on an international scale. Such an achievement could enhance the well-being of the global society by using, not destroying, high quality animal protein at a time when a significant portion of the world population is unable to obtain an adequate source of animal protein.

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