

Intrinsic and extrinsic factors' influence on implementation of disease control

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Livestock farming is a complex industry, where many enterprises are balancing between lifestyle-choice and profit-generation, while operating within a highly regulated and competitive agency. When someone recommends a disease intervention to an animal unit, the farmer decides whether or not to implement it and thereby influences the animal health status of the population.

Implementation of interventions requires a behaviour change of the farmer. Behaviour changes are difficult to induce, because the act comprises several steps with different types of influencers at each step. Traditionally, animal disease interventions have been promoted by extrinsic motivators such as financial gains/penalties and demands from retailers/consumers. Recently, the Theory of Reasoned Action (TRA) has been applied on animal health issues to investigate the intent to implement preventive practices and has revealed that intrinsic barriers does inhibit implementation of disease interventions on livestock farms (Rehman, et al., 2007; Gunn, et al., 2008; Heffernan, et al., 2008). Newer behavioural models from human medicine expand the TRA to provide a deeper insight into the intrinsic motivators and divide behavioural change into a two-step process, where intent is separate from action (Fishbein, 2000; Panter-Brick, et al., 2006). Panter-brick illustrated how intrinsic factors influenced intent, whereas extrinsic circumstances motivated the actual preventive action if intent was present, when investigating implementation of malaria preventive practices in The Gambia.

Our objective was to develop a framework to describe the factors influencing a farmer in the implementation of preventive measures. Furthermore, the framework had to be applicable to livestock farmers as individuals and as populations. Its main aim was to function as a communication tool to illustrate to policy makers or industry, where barriers inhibited action. This would aid decisions on where motivators would be most efficient. The model was adapted to reflect factors and circumstances influencing animal health rather than human health using literature and field data from in-depth interviews with cattle farmers to determine terminology and classification. Our model contained both intrinsic and extrinsic motivators and a two-step approach to implementation. The inclusion of both intrinsic and extrinsic factors was considered of particular importance in the circumstances of livestock farmers, where the business is often intertwined with lifestyle and choices. Whilst intent is first step to action and intrinsic motivators, such as attitudes, social norms or belief in self-efficacy are of great importance in implementation interventions on farms, the farmer is still part of a social and physical society, which also influences implementation. Extrinsic circumstances, such as legislation, retail/consumer demands and availability of skills or know-how to a large degree influences a farmer's ability to implement disease preventive actions even if intention is present. The model was trialled by communicating to policy-makers and industry-bodies, what inhibited control of zoonotic diseases on cattle farms in England and Wales.