

Large avian flu outbreaks more likely to involve duck meat industry, experts find

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Scientists at the University of Liverpool have found that 73% of avian flu outbreaks in the UK would not spread beyond the initial infected farm, but larger outbreaks are more likely to involve the duck meat industry.

A team from the University's Faculty of Veterinary Science and Department of Mathematical Sciences were approached by the Department of Environment, Food and Rural Affairs (DEFRA) to produce an avian flu model based on unique levels of detail including contact points between farms.

The study - based on the Asian strain of the virus - revealed that areas at most risk from disease were East Anglia, Lincolnshire and South Yorkshire, largely due to the numbers of duck meat companies in these localities. The team believe that duck meat was more likely to cause large outbreaks of avian flu because ducks often do not show signs of the disease and as such delays diagnosis and control of the infection.

Scientists used a computer model to simulate millions of outbreaks of avian flu, so that even rare outbreak scenarios could be observed in order to further understanding of how the disease might spread across the UK.

Dr Rob Christley from the University's Faculty of Veterinary Science, explains: "Our model is unique in the level of detail regarding contact points between farms. We modelled four contact routes: local transmission, where infection is spread in the area due to wind and wild

animals; transmission via delivery of feed where lorries may pick up the virus at one farm and carry it to another; transmission via slaughterhouse lorries and transmission via company workers, where personnel from a company may carry the virus to other farms within the same company as they go about their daily work.

“We have also classified 12,000 farms in the UK according to the species they raise and the purpose of the farm; for example is it a chicken meat farm, chicken egg farm or duck meat" The team modelled each farm detailing who their contacts were - feed mills, slaughter houses and other farms for example. This level of detail helps us predict areas and industry sectors at greatest risk.”

The model also provides analysis of government policy, such as the implementation of control zones.

This strategy aims to limit the movement of birds as well as trace potential contacts where transmission of the disease is more likely. The team found that this strategy was beneficial in reducing the chance of very large outbreaks to almost zero.

Source: University of Liverpool

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