

Quantitative estimation of the impact of setting a new target for the reduction of *Salmonella* in breeding hens of *Gallus gallus*

Scientific Opinion of the Panel on Biological Hazards

(Question No EFSA-Q-2008-291)

Adopted on 26 March 2009

SUMMARY

Following a request from the European Commission, the Scientific Panel on Biological Hazards was asked to deliver a scientific opinion on a quantitative estimation of the impact of setting a new target for the reduction of *Salmonella* in breeding hens of *Gallus gallus*. More specifically, is asked to assess the relative impact on the prevalence of *Salmonella* in flocks of broilers and laying hens if a new target for reduction of *Salmonella* is set in breeding hens being 1% or less flocks remaining positive for all *Salmonella* serovars with public health significance, compared to (a) the theoretical prevalence at the end of the transitional period (1% of five serovars), and (b) the real prevalence in 2007 to be reported by the Member States. The *Salmonella* serovars with public health significance should be determined by the EFSA taking into account the criteria laid down in annex III to Regulation (EC) No 2160/2003.

The Scientific Panel on Biological Hazards highlighted that, as previously addressed, any *Salmonella* serovar that is not animal host-adapted is considered capable of causing gastrointestinal illness of varying severity in humans, and thus should be considered of potential public health significance. Nevertheless, and when sufficient reliable data were available, the application of the criteria defined in the regulation that EFSA had to consider for determining the serovars with public health significance, allowed some relative categorisation of those serovars. *Salmonella* Enteritidis and *Salmonella* Typhimurium are responsible for the majority of reported cases of human illness and are considered as of paramount public health significance. All other serovars individually constitute less than 1% of reported human cases. Furthermore, *Salmonella* Enteritidis is the serovar most frequently associated with illness related to broilers and broiler meat, as well as with eggs and egg products. These, as well as other invasive serovars (e.g. *Salmonella* Dublin, *Salmonella* Virchow, *Salmonella* Heidelberg and *Salmonella* Choleraesuis), are associated with serious human illness and increased mortality. Antimicrobial resistance is particularly associated with *Salmonella* Typhimurium, but also with several other serovars including *Salmonella* Enteritidis, *Salmonella* Paratyphi-B, *Salmonella* Hadar, *Salmonella* Virchow, *Salmonella* Heidelberg, *Salmonella* Newport and *Salmonella* Infantis.

The Scientific Panel on Biological Hazards concluded that *Salmonella* Enteritidis and *Salmonella* Typhimurium have the greatest potential for vertical and pseudo-vertical transmission, from breeding hens to their progeny in the broiler meat and egg layer chains. EU-control measures for these two serovars in breeding hens are expected to contribute to the

control of *Salmonella* infections in production stock, and to reduce human health risks from poultry. The marginal benefits of additional EU-wide control for other serovars in breeders (including the currently regulated serovars *Salmonella* Hadar, *Salmonella* Infantis and *Salmonella* Virchow) are relatively small: they are less frequently associated with human illness and have less potential for vertical transmission (in particular for laying hens, as well as minimal relevance in terms of contamination of table eggs). Biosecurity measures applied to control *Salmonella* Enteritidis and *Salmonella* Typhimurium would also have a beneficial effect to control horizontal transmission of other serovars by contaminated feed, resident contamination in hatcheries and farms and spread of infection by movement of personnel, wild animals, equipment and other fomites.

Harmonised monitoring and reporting of *Salmonella* occurrence in different poultry populations is still largely incomplete in the EU. Consequently, there is currently insufficient data to quantify the impact of controlling *Salmonella* prevalence in breeders on the prevalence in production stock. Available risk assessment models are restricted to two EU Member States, and refer to earlier situations, in which different control measures were implemented. There are indications that for those serovars, for which vertical transmission is possible, controlling *Salmonella* prevalence to very low levels is necessary to achieve a low prevalence in production stock.

The Scientific Panel on Biological Hazards recommends that EU-wide targets for serovars other than *Salmonella* Enteritidis and *Salmonella* Typhimurium in flocks of breeding hens should be tailored to the particular situation in each Member State. At the same time, it is recommended that a further evaluation and quantification of the relationship between breeding and production flocks be carried out when more harmonized data from control programmes in each sector are available. Such considerations should include the further development of quantitative risk assessment models, taking data for specific serovars into account.

Key words: *Salmonella*, poultry, breeding hen, *Gallus gallus*, microbiological target.