

Research program IZS VE 14/16

Increasing the capability of control and prevention of *riemerellosis* in poultry through a multilevel characterization of the field strains isolated in Italy

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Riemerella anatipestifer is a highly pathogenic bacterium that causes heavy losses in the poultry industries worldwide. For many years *R. anatipestifer* has been known as being a primary pathogen for duck flocks, whereas it has occurred only sporadically in other avian species. From 2012 the disease has re-emerged in Italian chicken and turkey commercial flocks with dramatic mortalities mainly due to the brain localization of this bacterium. To better understand the reasons for this recrudescence, this research will be to mainly focused on investigating the main genotype and phenotype characteristics of the circulating strains. In particular the objectives of the present research project are:

1. to serotype the *R. anatipestifer* strains circulating in Italian flocks to achieve predictive information about the best strain/s to be used in a vaccination strategy;
2. to improve the epidemiological investigation system during outbreaks through the genetic characterization and innovative MALDI TOF MS profiling of field strains;
3. to assess the drug susceptibility profile of *R. anatipestifer* field strains by means of the MIC determination to support a rational and prudent use of antimicrobials during outbreaks;
4. to study the pathogenicity of the most prevalent serotype/s identified and set up an effective model for the reproduction of the disease in commercial turkeys for future in vivo vaccine challenge studies.