

Characterisation of lytic bacteriophages for *Escherichia coli* strains collected from infected birds

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Escherichia coli infections like colibacillosis and colisepticemia are responsible for significant economic losses in poultry industry. The increase resistance of *E. coli* strains to antibiotics has encouraged the search of new solutions to control *E. coli* infections ensuring good meat quality with minimal environmental impacts. Bacteriophages (phages) have been pointed out as good candidates to treat bacterial infections and therefore an alternative to antibiotics. Preliminary studies intending the development of an efficient, safe and competitive phage product to treat colisepticemia in commercial birds are presented. The aim of this work was to characterize morphologically and genetically, 3 previously isolated and selected phages with a broad lytic spectrum. These phages, in a cocktail, are lytic against 70.5 % of the most prevalent *E. coli* serotypes (O1, O2 and O78) obtained from infected birds. The morphological analysis through TEM observations showed that all phages belong to *Caudovirales* order. Two of them seem to be T4-like phages, belonging to *Myoviridae* family. The third phage belongs to *Syphoviridae* taxonomic family (T1-type). Phage DNA was extracted and purified and two molecular approaches were applied. The RFLP was used to obtain and compare DNA patterns. The results showed differences between all phages. A RAPD strategy overcame the absence of specific sequencing primers. The sequences obtained allow primer design for sequencing and PCR probes for monitoring.