Abstract

The present study was designed for the detection of *Salmonella* spp. at the genus level and the identification of *Salmonella enterica* serovar Gallinarum through PCR assay. A total of 134 samples (fecal, eggs, tissues) of chicken suspected for gastroenteritis and *Salmonella* infections were collected from layer and broiler poultry farms of the region as well as Veterinary Diagnostic Laboratory, University of Agriculture Faisalabad. Samples were processed for the presence of *Salmonella* using cultural and biochemical methods. The suspected *Salmonella* isolates were confirmed through the polymerase chain reaction (PCR) assay for the identification of serovar Gallinarum. The genus specific detection was done targeting *aroC* gene that produced an amplicon of 639 bp in 18 isolates. Out of which 5 were confirmed as serovar Gallinarum by targeting serovar specific *ratA* gene that produced an amplicon of 1,047 bp. For differential identification of biovar Gallinarum and biovar Pullorum a duplex PCR targeting *speC* and *glgC* gene fragments was performed. It produced two amplicons of 174 bp and 252 bp in 5 isolates with biovar Gallinarum, and an amplicon of 174 bp in 3 isolates with biovar Pullorum. The percent positivity of *Salmonella* enterica serovar Gallinarum infections in local chicken poultry farms was recorded to be 4%. These results demonstrate that PCR assays can be performed for the rapid detection and discrimination of biovars Gallinarum and Pullorum from poultry isolates. Earlier confirmation of infection is more effective in elimination of disease from poultry flocks.