ABSTRACT

Biofilms are complex communities of the microorganisms in which providing the benefits for the growth and survival. In most of the studies, the biofilm developments can be processed through the four stages including; initial attachment, microcolonies formation, mature biofilm formation and detachment. About 99% of bacteria in the nature are likely to live in the biofilm forms including *Salmonella spp.* The survival of *Salmonella spp.* in the food industry is prolonged because of its ability to develop the biofilm on the surfaces of the industrial equipments which leads to the food contamination and disease transmission. In chicken industries, *Salmonella* spp. was found to be the most common that cause severe foodborne infections. By isolation of *Salmonella* strain from chicken source (intestine and egg) and screen for the ones that represent the highest biofilm forming abilities will be able to assist the research in the future in term of eliminating or reducing the forming of this biofilm in the food industries. In this research, *Salmonella* strains were isolated from chicken intestine and egg to study on the biofilm forming abilities of the isolates. Upon the finding of seven *Salmonella* strains, there were 4 samples from intestine and 3 samples from egg which confirmed by biochemical testing and the further biofilm formation abilities were tested in comparison between two surface materials which were polystyrene(hydrophobic surface) and glass(hydrophilic surface) then using the rapid method with crystal violet staining the attached cells. Despite the differences in the growth rates of all strains, the strain number 1 and number 2 from chicken intestine represented the highest biofilm abilities while the strain number 7 from egg represented the lowest biofilm forming ability. Biofilm forming abilities of all strains on glass surfaces were found to be higher than on polystyrene surfaces. The direct observation on the microscopic method provided the correlated result with the indirect method in which the strain number 1 and number 2 represented the highest number of the bacterial attachments from day 2 onward and strain number 7 represented the lowest number of bacterial attachment even on day 3 in comparison to the other strains.