"Total coliform levels and *Escherichia coli* in *Anadara similis* and *Anadara tuberculosa* in El Morro Precinct, Province of Guayas"

**Author:** Dayana Delgado Quintana  
**Advisor:** Ph.D Beatriz Pernia Santos

**Abstract**

In the Gulf of Guayaquil there is evidence of contamination by fecal coliforms and *Escherichia coli*. That is why the objective of the present investigation was to determine the levels of total coliforms and *Escherichia coli* in the bivalves of human consumption *Anadara tuberculosa* and *Anadara similis* collected in the Puerto El Morro enclosure of the province of Guayas, in order to propose a purification system to ensure food safety. To do this, 30 samples of each species were collected in three periods during the months of November and December of 2017, in four estuaries: Marcelita, Caballito, Chalaco and Capón. The levels of *Escherichia coli* and total Coliforms present in bivalve species for human consumption were determined. The values of total coliforms and *E. coli* in *Anadara similis* ranged from $18.8 \times 10^2$ CFU/g up to $90 \times 10^3$ CFU/g and 490 CFU/g up to $2 \times 10^5$ CFU/g and in the species *Anadara tuberculosa* osciló from 80 CFU/g up to $86 \times 10^4$ CFU/g and 40 UFC/g - $73 \times 10^3$ CFU/g for coliforms and *E. coli*, respectively. From the sanitary point of view, the species *A. similis* and *A. tuberculosa* are not suitable for direct human consumption because of their high microbiological load, since they exceed the maximum permissible limits according to EC Regulation N° 854/2004 of the European Parliament. Finally, a purification system for organisms is proposed to ensure food safety in consumers.

**Keywords:** bivalves, Coliforms, E. coli, depuration.