

# Proyecto CEPRA XIII-2019-04

## Fortalecimiento de la inocuidad alimentaria en el Ecuador – Fase II: Estrategias de mitigación de patógenos microbianos, micotoxinas y metales pesados en alimentos



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### World Health Organization



- 600 million cases of foodborne illness and 500,000 deaths (2010)
- High percentage of cases are not reported.

### Foodborne illness in Ecuador

- 163 deaths from intestinal diseases (2013). The exact annual figure is unknown.
- It involves economic losses and a decrease in the quality of life.

## Evaluation of food contaminants and development of mitigation strategies

### Microbial pathogens

- Presence of Escherichia, Salmonella and Listeria due to improper handling of food.
- Pathogenic species of Vibrio in shellfish, especially oysters.



Decrease of *Vibrio vulnificus* in oysters through biocontrollers

### Heavy metals

- Aluminum (Al) and lead (Pb) in milk.
- Arsenic (As) and cadmium (Cd) in food matrices such as rice, cocoa, chocolate, milk and cheese.



Evaluation of Al & Pb in UHT milk and infant formula and mitigation strategies

### Mycotoxins

- Ochratoxina A in lupin and en chocho y quinoa.
- Fusarium toxins (fumonisin B1 and deoxynivalenol) in whole wheat flour.



Mitigation of ochratoxin A in lupin through debittered process

## Training Strategies on Food Safety and Hygiene Practices for Food Handlers



Co-design of teaching-learning tools to improve food safety

### More information:

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