# EVALUATING CASSIA OIL AS A PLANT-DERIVED DIETARY SUPPLEMENT FOR CHANNEL CATFISH *Ictalurus punctatus*


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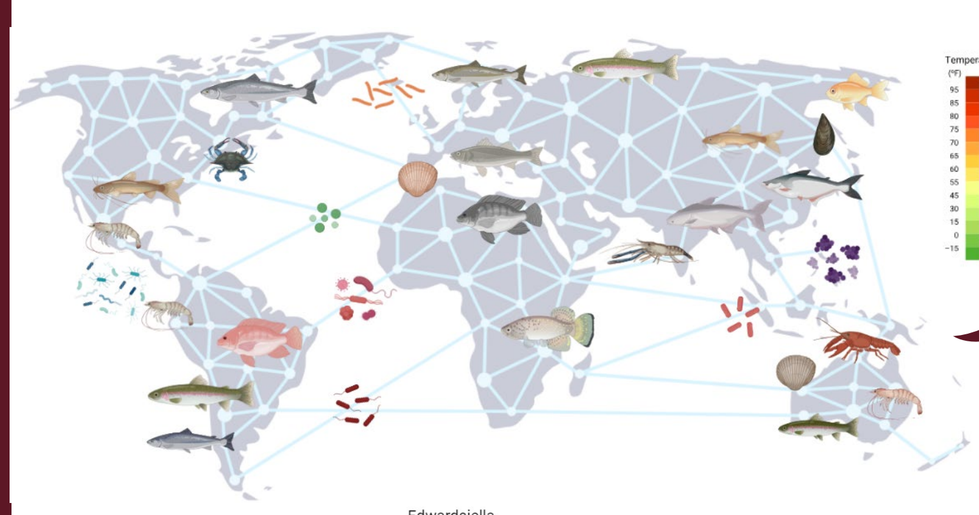
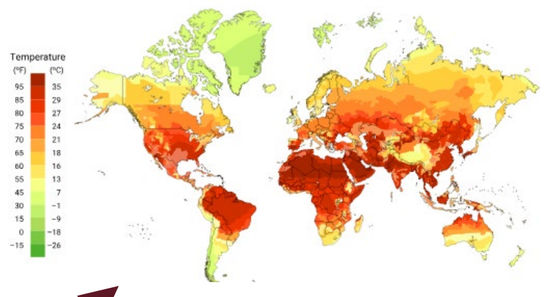
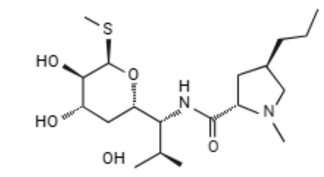
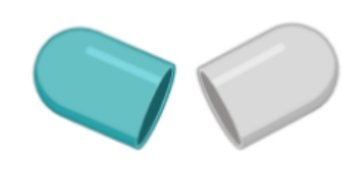
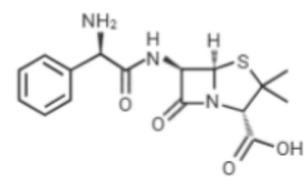
## INTRODUCTION

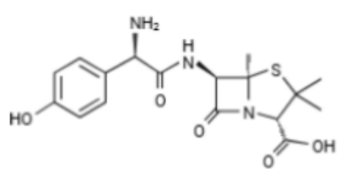




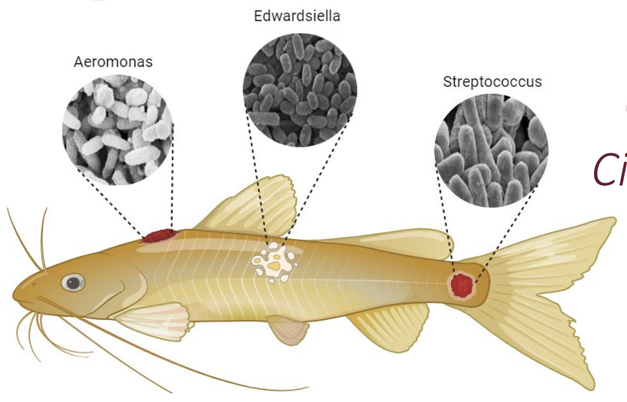






The United States Food and Drug Administration
- Terramycin® (oxytetracycline)
- Romet® (sulfadimethoxine and ormetoprim)
- Aquaflor® (florfenicol).



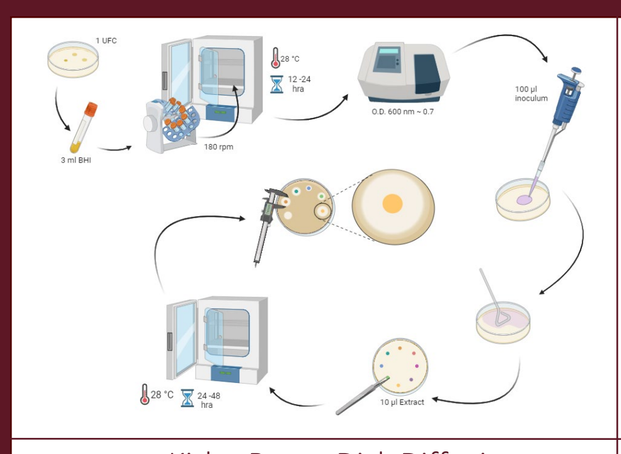

Cinnamaldehyde:
*Cinnamomum cassia*

Antibiotic resistance

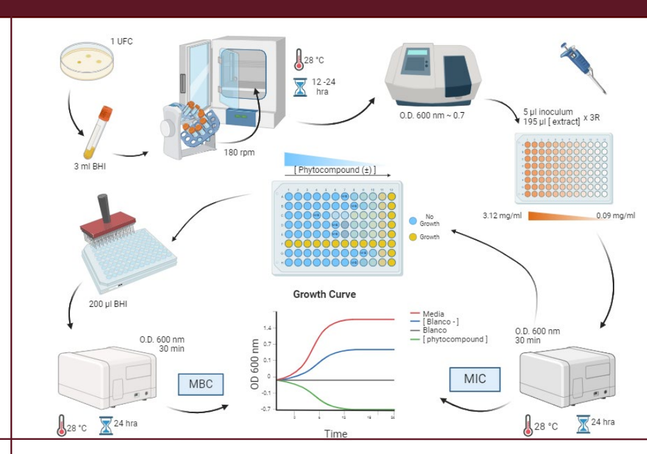
## OBJECTIVES

This study aimed to evaluate the antimicrobial potential of *Cinnamomum cassia* essential oil against fish pathogenic bacteria and to investigate its effects on feed palatability, growth performance, and physiological indices in *Ictalurus punctatus* under controlled in vivo conditions.

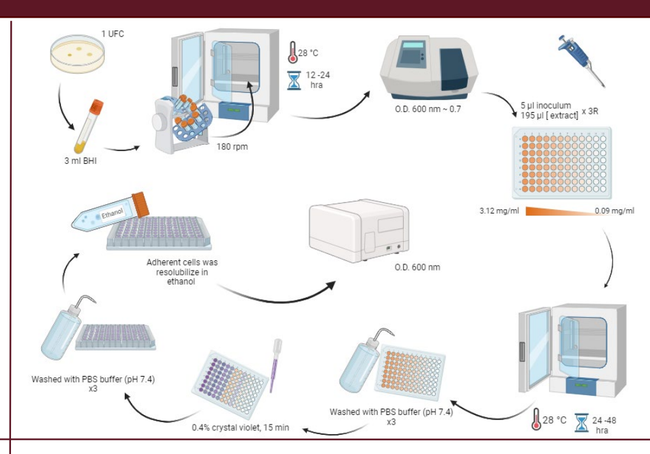
## METHODOLOGY



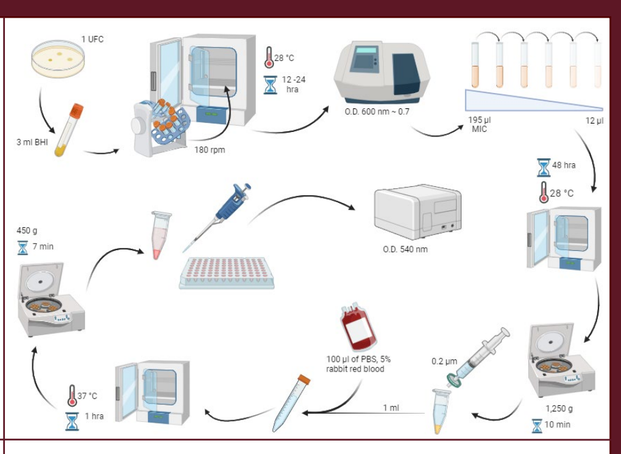

Kirby-Bauer Disk Diffusion Susceptibility Test




Broth microdilution method



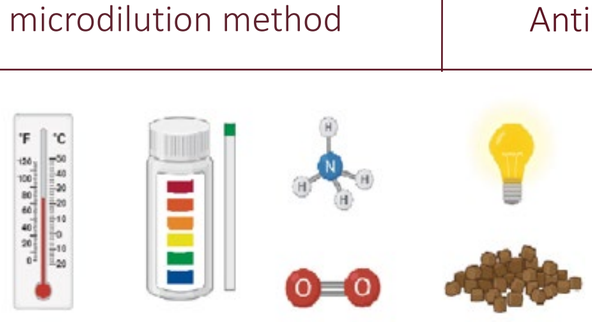

Antibiofilm activity compounds




Hemolytic assay

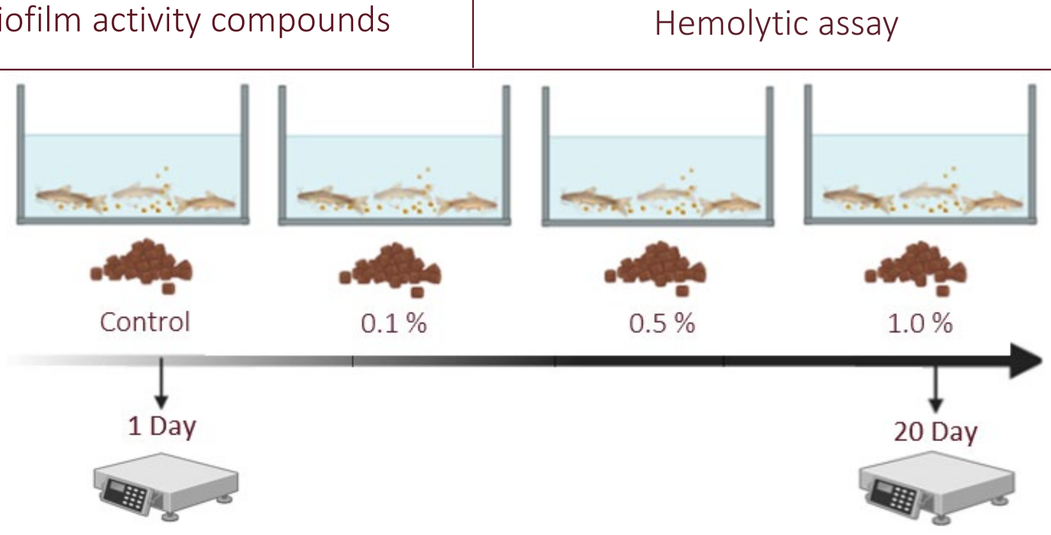
| *Streptococcus iniae LSU 01-105* |
|---|
| *Aeromonas hydrophila S14-452* |
| *Edwarsiella ictaluri S97-773* |

| DO | Temp | pH | Salinity (ppt) | Ammonia (mg/L) | Nitrite (mg/L) |
|---|---|---|---|---|---|
| 7.593 | 29.01 | 8.411 | 0.7920 | 0.1984 | 0.08953 |

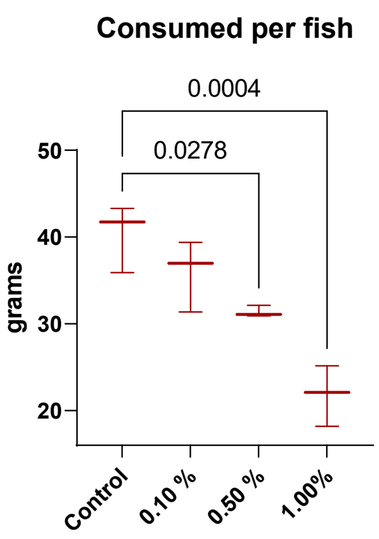


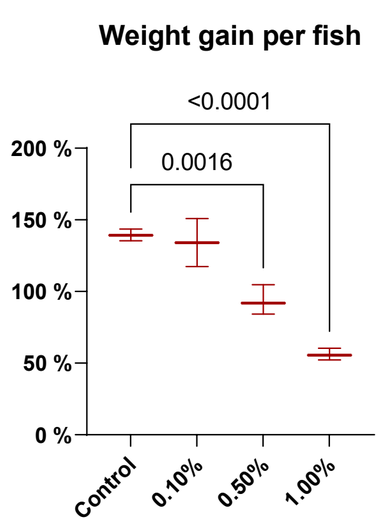
3R x30
12/12

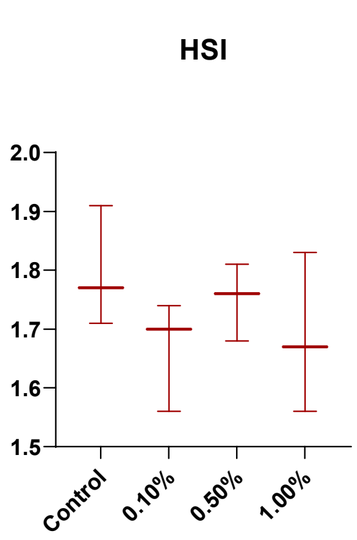
8 AM / 4 PM
Satiation

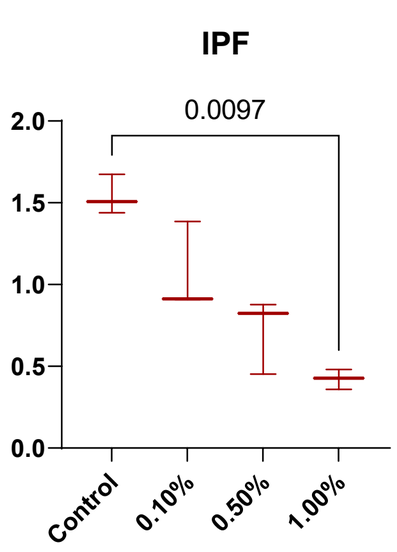


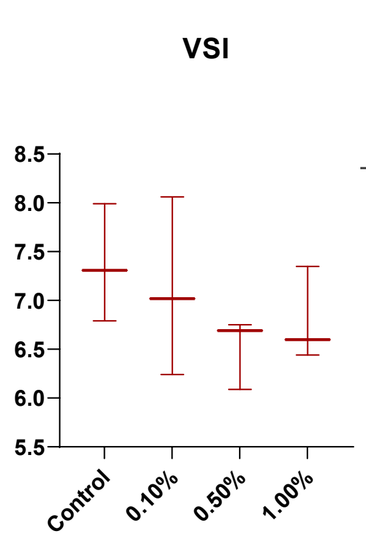

## RESULTS



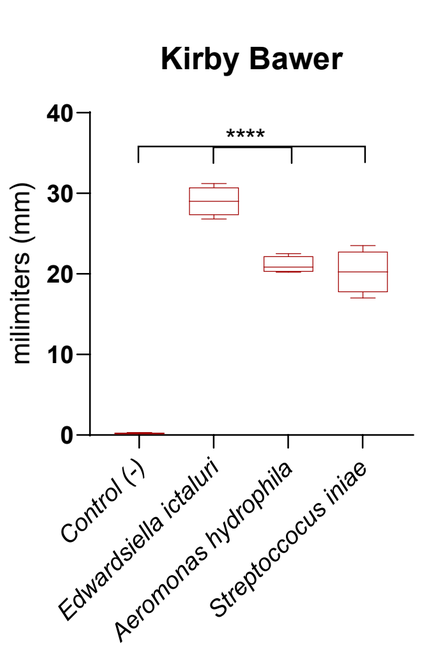



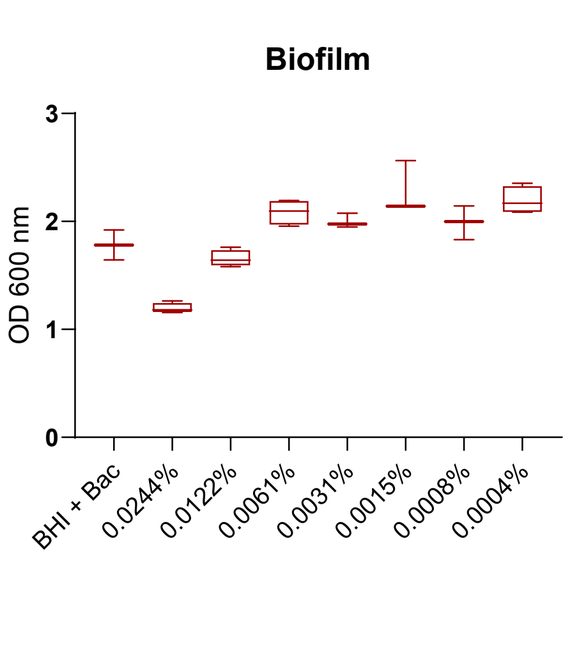



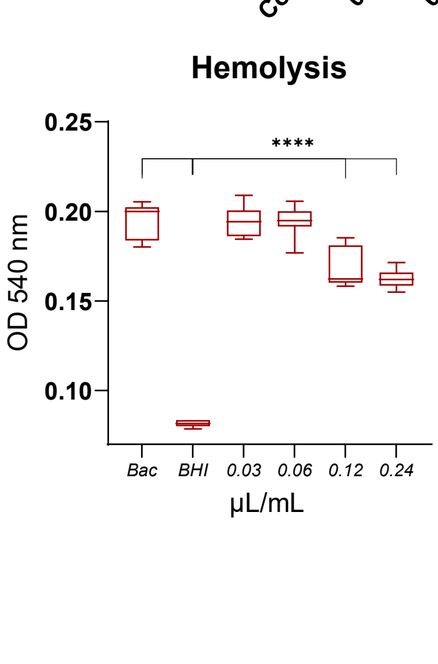




| Strain | *Cassia Oil (µL/mL)* | |
|---|---|---|
| | MIC | MBC |
| *Streptococcus iniae* | *0.06* | *0.12* |
| *Edwardsiella ictaluri* | *0.06* | *0.12* |
| *Aeromonas hydrophila* | *0.24* | *0.49* |




## CONCLUSIONS

*Cinnamomum cassia* essential oil shows promise as a natural antimicrobial for aquaculture; however, dietary inclusion levels must be optimized to maintain feed palatability and growth performance while preserving its protective effects against bacterial pathogens.