EFFECT OF *COTA TINCTORIA* ON THE SURVIVAL AND BIOFILM FORMATION OF *LISTERIA MONOCYTOGENES*

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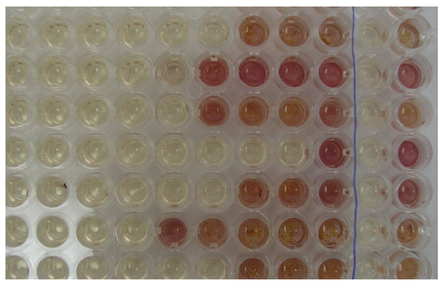
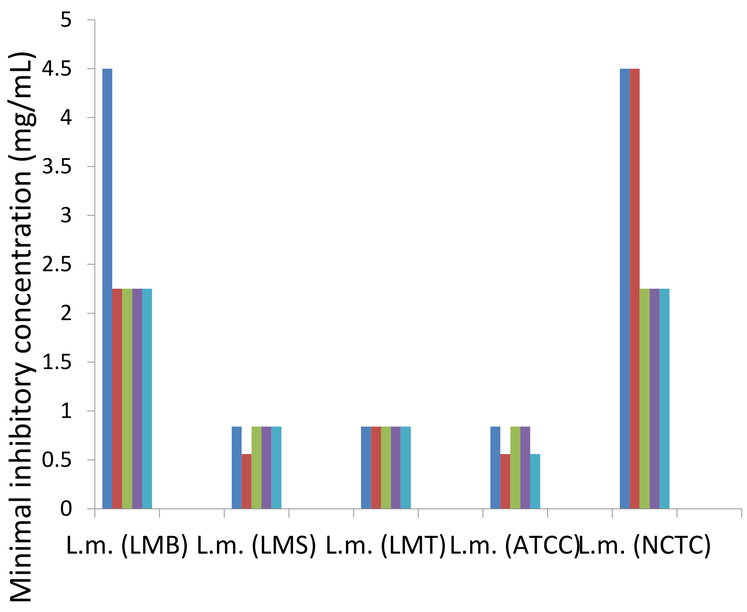
Listeria monocytogenes is a pathogenic bacterium, with human disease and infection linked to dairy products, processed meat, as well as products that are kept refrigerated for a long time since this bacterium can survive and grow at low temperatures.

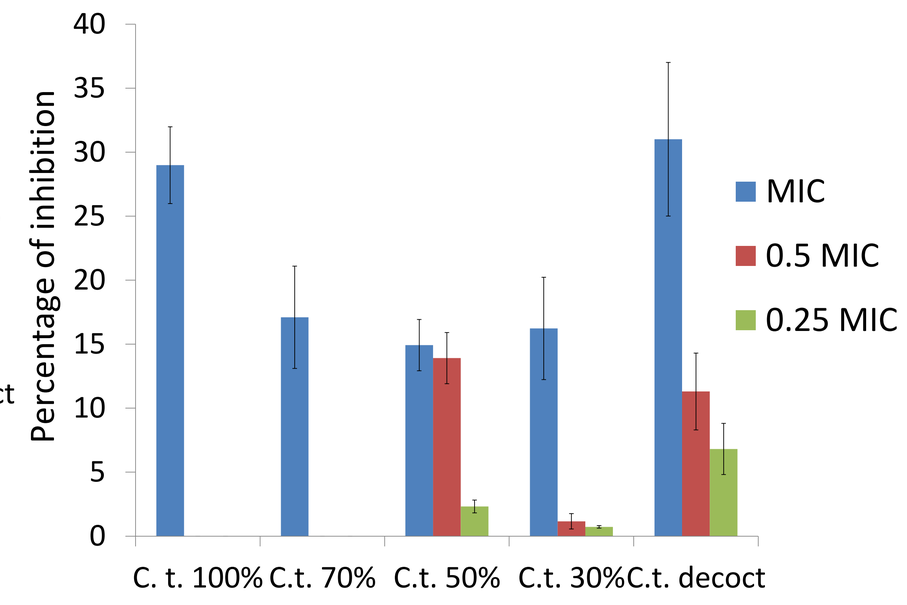
Plants are an excellent source of compounds in the search for natural products that can be used in the control of pathogens in the food industry. ***Cota tinctoria*** (L.) J. Gay ex Guss., yellow chamomile, is used in food industry for production of diary and butchery products and this study aimed to investigate its effect on the growth of common food contaminant *L. monocytogenes*.

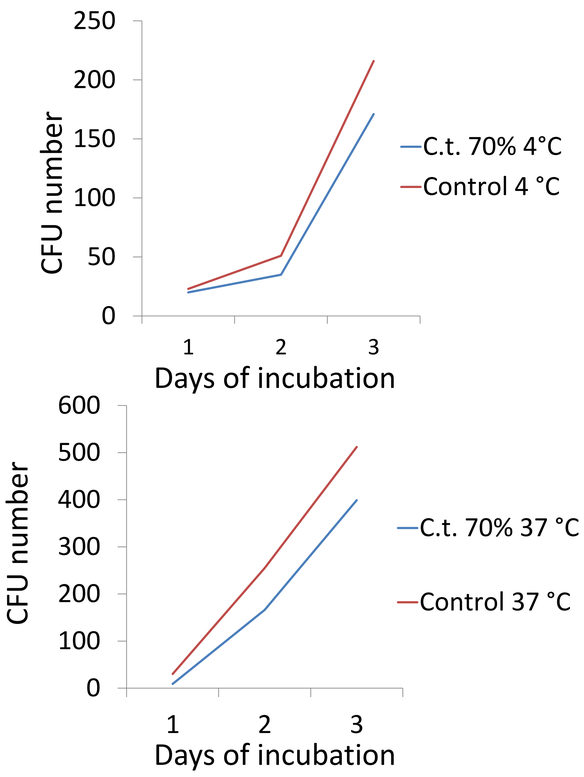
Five different dry extracts were extracted from aerial parts, using various solvents ethanol/water solution (100%, 70%, 50% and 30% v/v) and decoction.



Three food isolates (*L.m.* LMB, *L. m*. LMS and *L. m.* LMT)and two ATCC strains (*L. m.* ATCC 19111, *L. m.* NCTC 7973) of *L. monocytogenes* were used for the microdilution assay.







Obtained extracts exhibited promising antimicrobial potential (minimal inhibitory concentration range 0.56-4.50 mg/mL and minimal bactericidal concentration 1.12-9.00 mg/mL) as determined by microdilution assay.

Antibiofilm capacity did not exceed 50% inhibition of 48h *L. monocytogenes* biofilms as observed in crystal violet assay.

The 70% ethanol extract was selected due to its low MIC values and studied for the dynamic of inhibition of bacterial growth at 4°C and 37°C. Application of *C. tinctoria* extract slowed down growth of *L. monocytogenes* at both temperature conditions to moderate extent.

C. tinctoria has shown promising capability to reduce growth *of L. monocytogenes*, one of the most common bacterial food contaminants, and should be further explored in this manner.

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