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AUGUST 17-21, 2014 | MONTREAL, CANADA

IUFoST 17th WORLD CONGRESS OF FOOD SCIENCE AND TECHNOLOGY & EXPO

BOOK OF ABSTRACTS*

* Please note if you do not find a set of abstracts for a Concurrent Session, this is because we did not receive a set of abstracts for that session.

surface of *Listeria monocytogenes* cells were observed by scanning electron microscopy, during 180 min of contact with bacteriocin B391. Severe morphological changes could be observed after 60 min with the collapse of cell wall and membrane. Long chains of *Listeria monocytogenes* abnormal cells could be observed after 30 min. The *L. monocytogenes* lysis has been studied for a period of 24 h in water and peptone salt solution. After 8,5 hours of contact with B391 bacteriocin, the O.D.600nm decreased to 1,5% of the initial value. Bacteriocin B391 can be useful in improving food products safety in relation to *Listeria monocytogenes* growth, in particular due to its broadrange activity, stability even when used very diluted and high lytic activity against *Listeria monocytogenes*.

Paraplantaricin L-ZB1, a Novel Bacteriocin and its Application as a Biopreservative Agent on Quality and Shelf Life of Rainbow Trout Fillets Stored at 4C **UP271**

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Introduction and Objectives: Paraplantaricin L-ZB1 was produced by *Lactobacillus paraplantarum* L-ZB1, isolated from the traditional China fermented sausage. In this work, paraplantaricin L-ZB1 were first used to maintain quality of rainbow trout fillets at 4 °C.

Methods: Rainbow trout fillets were left untreated (CK), or treated with 200 AU mL-1 paraplantaricin L-ZB1 (P1), 400 AU mL-1 paraplantaricin L-ZB1 (P2), or 200 AU mL-1 Nisin (N). The quality changes of the control and treated samples stored at 4 °C for a period of up to 10 days were determined by biochemical (Biogenic amines, K value), chemical (pH, total volatile basic nitrogen [TVB-N]), microbiological (total viable count, Enterobacteriaceae, *pseudomonas*, spore-forming bacteria) and sensory methods.

Results: Paraplantaricin L-ZB1 could suppress the growth of microflora, especially Enterobacteriaceae, *pseudomonas* and spore-forming bacteria during sample storage. Total viable count exceed 7 log cfu g-1 on day 2-4 of storage for CK, day 2-4 for P1, day 4-6 for P2 and day 4-6 for N. Meanwhile, the increase of pH, TVB-N, K-value and total biogenic amine levels were significantly delayed in paraplantaricin L-ZB1 treated samples compared to the control group. Sensory life was 2-4 days for CK , 4 days for P1, 6 days for P2 and 4-6 days for N.

Conclusions: The results indicated that the effect of paraplantaricin L-ZB1 on rainbow trout was to enable the good quality characteristics to be retained longer and to extend the shelf life during refrigerated storage. The results of the research can be advantageously used by fish industry, that the paraplantaricin L-ZB1could be used as a suitable biological fish preservative.

The major new finding of the study is that paraplantaricin L-ZB1 was first used to enhancing the shelf life of rainbow trout during chilled storage as a novel bacteriocin.

Organophosphorus Pesticides Residues in Cooked Tomato (Licopersicum esculentum) **UP272**

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Introduction and Objective: Organophosphorus (OP) insecticides are widely used in different crops. These compounds have high toxicity and their indiscriminate and intensive use may lead residues in food and in environment. Toxic effects on humans are acute or chronic. from the long-term exposure to low doses of a regular intake of pesticide residues in food and/or water. The study aimed to evaluate the residual concentrations of OP in tomato after

different cooking times.
Methods: Tomato samples were fortified with 330µg/kg with mix containing 10 OP. Samples were cooked for 15 min, 25 min and 35 min in water bath at 100 ° C, and analysis of the matrix mix without addition of OP. The fortification time with the mix was of 20h. The samples were analyzed by QuEChERS method. The extraction was performed with acetonitrile and salts (MgSO4, NaCl), and clean-up sorbents used (MgSO4 and PSA) by dispersive solid phase extraction. The purified extract was injected and quantified in GC / NPD system. DB5 capillary column (30m x 0.32 mm x 0.25 mM), helium carrier gas, splitless injection at 250 ° C. External standards were used to quantify the OP pesticides: phorate, methamidophos, parathion, pirimiphos, malathion, chlorpyrifos, phenthoate, etiona, triazophos and pyrazophos.
Results: Pesticides were successfully detected with excellent sensitivity by GC/NPD using multi-residues. The recovery rates of the method for all OP values ranged from 70 to120%, which is consistent with SANCO (2012) recommendation. The limits of quantification for the 10 analytes ranged from 0.004 to 0.019 mg/mg. The behavior organophosphates was evaluated in different heat conditions. The recovery of the analytes demonstrated no degradation of parathion, malathion, and triazophos. The triazophos showed no degradation even after 35 minutes of cooking, kept the original concentration. Some OP remained in the food even after being subjected to the same heat treatment.
Conclusion: The study showed the importance of the assessment of pesticide residues in plant foods thermally processed.

An Alternative Method for Inoculation of Microorganisms on Plates **UP273**

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Introduction and Objectives: Microbiological analyses are tools used to evaluate food quality. Microorganisms counting is often determined by direct plate counting of viable or live cells and in general spread plate and pour plate are methods used for this analysis. Direct plate counting has some disadvantages that may cause error as colonies that are counted as one cell due to overlapping of microorganisms that stay together after cell division. Furthermore, this kind of analysis is time-consuming and it is not indicated for analysis of perishable products. The aim of this work is to develop an alternative method for inoculation of microorganisms on plate using Technique of Inoculation in test-Tube.
Methods: Buffered peptone water (BPW) and Plate Count Agar (PCA) solutions were prepared as previously described. Stock solution of sugarcane juice was prepared by diluting 5.0 mL of sugarcane juice to 50 mL with BPW. Working solutions were prepared by successive dilutions: 10-1 to 10-6 g L-1. Technique of Inoculation in test-Tube (TIT) PCA solution was transferred to test-tube followed by sterilization and it was placed into water bath in laminar flow. The temperature was monitored at 40 °C, 45 °C or 50 °C. When PCA medium reached the desired temperature, the diluted sample of sugarcane was added to the medium. The tube was homogenized and poured on Rodac plate. Similar procedure was performed using Petri plate. The volumes of PCA and sample solution were adjusted proportionally to plate sizes. The plates were incubated at 35 °C/48 hours.
Results: Faster growth of the colonies was observed when the sample was incubated at 45 °C. Growth of microorganisms was stabilized in 14 hours using TIT procedure, a shorter time compared to conventional methods of inoculation that usually require between 24 and 48 hours. Conventional methods hamper homogenization of the medium with the inoculum on the plate in a short period of time due to agar solidification. For this reason, microorganisms proliferate