

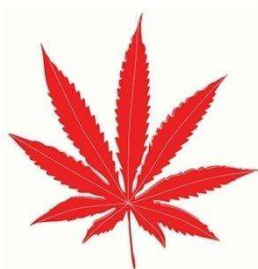


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4th Pakistan Food -Nutrition International Summit 2023

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Conference Abstract

ANTIMICROBIAL POTENTIAL OF MANGO SEED KERNEL OIL EMULSIONS IN MANGO FRUIT DRINK AND THEIR EFFECT ON PHYSICOCHEMICAL PROPERTIES AND SELF LIFE OF DRINK

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Abstract

Global industrial processing of mango for the production of juices and pulp yields a significant amount of mango waste in the form of seeds and peels upto 14-22% and 11-18% respectively. Mango seeds consist of seed kernel (17-22%) containing several bioactive compounds (polyphenols, phytosterols as campesterol, sitosterol and tocopherols) which shows appreciable contribution in class of natural preservatives. The major components of mango seed are starch, fat and protein. Mango seed kernel oil consists of about 44–48% saturated fatty acids (majority stearic) and 52–56% unsaturated. The current research project was conducted to evaluate the hidden potential of mango seed kernel oil with reference to antimicrobial activity. Soxhlet extraction method was used for oil extraction from the ground mango seed kernel and incorporated in mango fruit drink to explore its preservative potential. Antimicrobial effect of mango seed kernel oil was evaluated against pathogenic strains of *Escherichia coli*, *Bacillus subtilis*, *Salmonella typhus* and *Staphylococcus aureus*. Significantly the highest inhibition of salmonella typhae was observed at 100% extract with mean inhibition zones of 18.50 ± 0.29 mm. However, the mean zones of inhibition due to concentrations of oil (20 μ L, 40 μ L, 60 μ L, 80 μ L, 100 μ L) were from 0 to 16.00 ± 0.58 mm, 7.33 ± 0.88 to 12.0 ± 0.00 mm and 9 ± 0.29 to 15.50 ± 0.87 mm against bacillus subtilis, E coli and Staphylococcus aureus respectively. Moreover, the addition of mango seed kernel oil in mango fruit drink caused a significant decrease in pH resulting in increased acidity and total soluble solids. Conclusively, Mango

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The authors declare no competing interests

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seed kernel extract reduced total bacterial count & showed remarkable activity against *Salmonella typhus* strain and extended the shelf-life of pasteurized mango fruit drink.

Keywords: Antimicrobial, Mango Kernel, Preservatives, Bioactive Compounds

Declaration

The abstract is reviewed and accepted by the Conference Organization Committee of 12th Pak Pharma Healthcare Expo. The presenter was permitted to share his research after final approval of the committee. The scientific research information was presented at 4th Pakistan Food -Nutrition International Summit 2023 held on February 15-16, 2023 at Expo Centre Lahore, Pakistan. Hence, the journal is publishing this abstract on behalf of the aforesaid Conference Organization Committee.



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