

Process standardization for preparation of encapsulated pomegranate peel extract powder as a natural antimicrobial agent for food preservation

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Utilization of fruit waste as a novel ingredient is receiving immense importance. Plant parts rich in a wide variety of secondary metabolites such as tannins, terpenoids, alkaloids, and flavonoids are proven to have in vitro antimicrobial properties. Pomegranate peel is one of such fruit was which has got its significant due to its antimicrobial activity. In present investigation, efforts were made to prepare encapsulated pomegranate peel extract powder (PPEP) through cabinet and spray drying. Different physical properties of prepared powders were determined to explore its applicability in specific food usage while their antimicrobial activity was assessed against six major food borne pathogens, to explore pomegranate peel extract as novel natural antimicrobial agent that could be used safely in food items. The results revealed that pomegranate peel powder extract was found to be effective antimicrobial agent against food borne pathogens at the concentration 1-5mg/ml. Further, spray dried PPEP was observed to be superior over cabinet dried PPEP in terms of its physical as well as antimicrobial activities, justifying suitability of spray drying in preparation of encapsulated pomegranate peel extract powder for commercial exploitation.

Biography

Siddiqui Nayeema is junior research associate working under guidance of Dr. P. S. Kadam in Dept. of Food and Industrial Microbiology, College of Food Technology MKV Parbhani.

Dr. P.S. Kadam is honorable Associate Dean and Principal of College of Food Technology MKV Parbhani. He is also Head of Dept. of Food and industrial Microbiology. He renowned scientist in the field of microbiology, he has published various papers, review in various well known journals. He also patented 2 technologies in the field of food technology.

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