(150)

Fruit Peel Wastes as Novel Media for Growing Selected Fungi

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Abstract

Most of the fruit peels are either dumped or incinerated to a large extent after the main parts of the fruits are consumed. This will cause environmental pollution, and the dumped fruit peel waste will encourage the growth of soil-borne pathogens. The fruit peels are more useful for either agricultural purposes or for other research activities. Fruit peel wastes rich in carbohydrate content and other basic nutrients could support growth of microbes. Potato Dextrose Agar (PDA) is a common medium to grow a wide range of fungi. But nowadays the use of readymade culture media for routine laboratory work and research purposes is quite expensive. Thus, it is essential to formulate cheap culture media. The aim of the present study was to formulate culture media using fruit peel waste material such as pineapple, banana, papaya and watermelon separately. Potato dextrose broth was used as control. The fruit peels of pineapple, banana, papaya and watermelon were dried and powdered. 4g of each fruit peel waste powder was dissolved in 100 mL distilled water separately and autoclaved at 121°C for 15 mins. The pure cultures of fungi namely *Rhizopus* sp, *Aspergillus* sp, *Penicillium* sp, *Mucor* sp and *Fusarium* sp were obtained in the laboratory. Qualitative measurements were taken. Most of the media showed higher growth of fungi compared to the Potato dextrose broth. Growth of *Rhizopus* sp, *Aspergillus* sp, *Penicillium* sp and *Mucor* sp was recorded in all the fruit peel waste media. Among all the fruit peel waste media tested, growth of *Fusarium* sp was not observed in media containing pineapple and banana. The nutritional composition of the fruit peel and the presence of certain bioactive compounds may have influenced the variation of the growth of fungi in different fruit peel media. Future studies should be done to formulate suitable media from fruit peel wastes which encourages the growth of certain fungi.

Keywords: *Fruit peel waste, Potato dextrose broth, Fungi*