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Preparation of natural plants media for the cultivation of lactic acid bacteria and pathogens

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Plants play a major role in all the traditional disciplines of medicine because they are considered as a rich source of nutrients. The aim of this study is to prepare an appropriate cultural medium for two groups of bacteria (lactic acid and pathogens). Three types of plants: *Aloe vera*, black and green tea were used. For the preparation of solid media, 100 g/l of each plant were soaked in a warm water, after that 15 g/l of agar-agar were added to each of the aqueous extracts. Furthermore, culture media were prepared by mixing *Aloe vera* with green tea once and with black tea once again. Genera of lactic acid bacteria (LAB) used in this research were isolated from different sources: *Lactobacillus acidophilus* (vagina), *L. casei* (breast milk), *L. paracasei*, *L. plantarum* and *Pediococcus acidilactici* (monkey milk). On the other hands pathogens were *Serratia* and *Pseudomonas* isolated from urinary tract infections (UTI) and *Salmonella* isolated from contaminated food. All test bacteria were cultured on natural medium and incubated at 37°C for 24 h. Study results showed that pathogenic bacteria were not able to grow on black tea medium whereas they could grow on green tea medium and *Aloe vera* medium with few growths on both. LAB showed obvious growth on two types of medium green tea and *Aloe vera*, separately. However, this

bacterium could not grow on black tea medium. In terms of the combined plants media, the medium consisted of *Aloe vera* and black tea did not show any growth for LAB but there was a growth of all types of pathogens. Both LAB and pathogens revealed heavy growth on *Aloe vera* plus green tea medium. In conclusion, green tea and *Aloe vera* is a suitable growth medium for LAB while black tea is not appropriate for this bacterium. All types of natural media are suitable for the cultivation of pathogenic bacteria. As a result of the above findings, it is preferred to use natural medium instead of chemical medium that have expensive cost in addition to their negative side effects on human.

Speaker Biography

Duaa S Al-Dulaimy is currently pursuing her PhD in Cardiff University, UK. She has completed her BSc degree from Department of Biology/ School of Biosciences, Mustansiriyah University, Iraq and her MSc degree from the same department. She has published several papers in reputable journals and has been working as a lecturer for more than ten years teaching the undergraduate students of medical microbiology and biotechnology. And, she has supervised several undergraduate students.

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