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Formulated Sorghum Media for Cultivation of *Escherichia coli* (NCTC10418) and *Pseudomonas aeruginosa* (NCTC 6750)

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Abstract

The study was aimed to formulate sorghum based media for the cultivation of E.coli and P.aeruginosa. The sorghum grains were treated of debris, soaked in distilled water and ground into paste. The fibers removed and centrifuged at 9000 rpm for 15 minutes. The protein-like and starch deposited were dried. The glucan and starch were digested with pepsin and amylase enzymes to protein and sugar digest followed by combinations and the pH adjusted to 7.2 and sterilized to obtained sorghum media. Sorghum and Nutrient broth were inoculated with diluted 24 hours of E.coli and P.aeruginosa. The growth of these bacteria were visualized, absorbance (OD) and viable count estimated. A growth profile of E.coli and P.aeruginosa in Nutrient and sorghum media were monitored using spectrophotometric for six hours. The OD_{0.8} for E. coli and P. aeruginosa in Sorghum media while OD 1.0 and 0.9 for E. coli and P. aeruginosa in Nutrient Broth. The mean viable count of E.coli was $5.6 \times 10^{22} \pm 0.01$ and $4.9 \times 10^{22} \pm 0.004$ CFU/mL in Nutrient and sorghum media. While P. aeruginosa mean viable count was $5.1 \times 10^{22} \pm 0.011$ and $4.0 \times 10^{22} \pm 0.005$ CFU/mL in Nutrient and sorghum media respectively with no growth. The growth curve pattern of E. coli and P. aeruginosa showed no lag phase and lengthen log phase. The findings of this study showed that developed Sorghum media can promote the growth of bacteria in the same way as the Nutrient broth.

Author Keywords

Absorbance, E.coli, Enzymatic digestion, Growth curve, P.aeruginosa. Sorghum grains, Sorghum media, Turbidity, Viable count, Nutrient broth

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