
Effect of Different Processing and Supplementation on Maize Cob as Microbiological Growth Medium for Fungi.

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Abstract

Waste cobs from variously processed (premature, uncooked, roasted, cooked salted, cooked unsalted) maize (*Zea mays*) were used as raw materials to prepare growth agar media for six moulds: *Rhizopus nigricans*, *Aspergillus niger*, *Trichoderma viride*, *Alternaria tenuis*, *Fusarium* sp, *Penicillium* sp. and one yeast: *Debaryomyces* sp. All the formulated media supported the growth of the microorganisms tested. *Fusarium* sp. produced the widest diameter of growth ranging from 40.0 mm on unsalted cooked cob agar (UCCA) to 54.0 mm on fresh cob agar (FCA). The least diameter of growth was observed with *Debaromyces* sp. and it ranged from 0.1 mm on premature cob agar (PCA) to 0.9 mm on UCCA. The addition of dextrose showed that except with *Debaromyces* sp., the diameter of growth of fungi on media were significantly ($p < 0.05$) wider as compared to the formulated media without dextrose. Correlation between addition of dextrose and diameter of growth was significant at 95% confidence interval. The diameter of growth was increased with increasing in time of incubation for all the media tested. For *Fusarrium* sp., there were no differences in the diameter of growth at 48h of incubation and at 72h on all the media tested. Pearson bi-variate correlation showed that at 95% confidence interval, significant positive correlations occurred between incubation time and the media used. This study showed that the supplementation of maize cobs with dextrose provide an alternative cheaper media for fungi cultivation in the laboratory.

Keywords

moulds, effects of different processing, supplements, yeasts, dextrose, media, waste cobs.