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Document Title : DETERMINATION MYCOBIOTA AND MYCOTOXINS OF AIR-BORNE DUST IN SOME ANIMAL HOUSES AND COMPUTER LABORATORIES IN JEDDAH PROVINCE
تقدير الفلورا الفطرية والميكوتوكسينات المعزولة من غبار الهواء الجوي في بعض معامل تربية الحيوان والحاسب الآلي بمحافظة جدة

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Abstract : The study has achieved the expected goals for the research plan by isolating sixty samples from air-born fungi from the outdoor of Science Faculties building and King Fahd Center and the Based on its aims indoor of some animal houses and computer laboratories in Jeddah, Saudi Arabia. The total count of isolated fungi were 6608 colonies, and the fungal genera as follows: Acarocybe, Alternaria, Aphanoascus, Aspergillus, Cladosporium, Cochliobolus, Fusarium, Humicola, Mucor, Myriococcum, Nigrospora, Paecilomyces , Penicillium, Rhizopus, and Syncephalastrum. It was noticed that some of the fungal species which was isolated from outdoor dust did,nt appear in the indoor dust, also the total count of isolated from animal houses was included 2332 fungal colonies was almost double the number which was isolated from computer laboratories was 1126 fungal colonies. The study also showed that the most common (dominance) fungi were A. fumigatus and P. variotii in outdoor and indoors environments. When seven strains of P. variotii and A. fumigatus were tested for there ability to produce mycotoxins (Patulin and gliotoxin) by using (TLC) techniques, three strains of P. variotii produced patulin while none of A. fumigatus could produce gliotoxin. One third of the fungal isolates for Aspergillus genera from outdoors and indoors have been found able to produce toxins by 20 %, reaper scented by the production of gliotoxin by A. terreus and aflatoxin G1 by A. flavus. Considered result of RAPD-PCR on seven strains of P. variotii indicated two bands of DNA in three atypical strains (A, C and D) with the result of (TLC) for mycotoxins production. Physiological experiments was performed on both P. variotii and A. fumigatus for growth and production of mycotoxins. The result showed that the antagonistic between P. variotii and various species of fungi lead to a partial inhibition of patulin production by 30.57 % or total suppression 100 %. When diffrent media were used growth fluctuation and secondary metabolites production such as PDA, MEA, YES 15% and cellulose as well as animal feed, wood chips and wall paint. Some media (compact disk) did not prove to support growth or toxin production. Surface disinfectants proved to decrease the total count of airborne fungi, while fresh air sprayer increased the total count of airborne fungi. Increasing the concentration of amphotricin B in the media lead to decrease in the growth and secondary metabolites of both fungi P. variotii and A. fumigatus. It was also found that the optimum temperature for growth of P. variotii and A. fumigatus was 30°C, while the optimum temperature for patulin production was 20°C. Bioassay method was followed to find out the toxicity effects of Paecilomyces variotii spores inhalation on the lung tissue of Male Albino Mice. The experiment showed significant changes in the form of acute pneumonia destruction alveolar destruction, capillaries congestion and as well as macrophage accumulation in bronchioles. In general, treatment of exposed mice by amphotricin B showed marked improvement in the lung tissue within 2 weeks.

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