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Research Title : السموم الفطرية لبعض سلالات الأسبرجللس والبنسيليوم السامة على بذور البن في المملكة العربية السعودية.

السموم الفطرية لبعض سلالات الأسبرجللس والبنسيليوم السامة على بذور البن في المملكة العربية السعودية.

Descriptipn : This study achieved the main objective of the proposed research plan. the mycoflora of about 30 sample of green coffee beans were collected from different markets in Jeddah governorate, Saudi Arabia. The mycoflora were isolated on two different agar media MEA and PDA, the total counts of the isolated colonies recovered were and 3701 and 5456 respectively. The most common genera were Aspergillus, Penicillium, Rhizopus and Mucor, including the following species A. fumigatus, A. ocharaceus, A. flavus, A. niger, M. heimalis, M. plumbes, M. recemosus, P. chryogenum and P. glabrum. On the other hand the beans surfaces were sterilized with 5% sodium hypochloride and the total counts of the recovered fungal colonies were estimated on PDA media. The numbers of isolated colonies were about 3692 and the isolated genera were the same as the previous genera, in addition to other two genera Alternaria and Fusarium. They were represented by the species, Alternaria chlamydospora and Fusarium aquaeductnum. Other species were appears as Aspergillus terreus and Penicillium citrinum. About 79 fungal isolates of the genera Aspergillus and Penicillium were tested for their ability to produce mycotoxins using Thin Layer Chromatography (TLC). It was found that 8.9% of the tested fungal isolates have the ability to produce mycotoxins. The genus Aspergillus was the most active and was represented by 7.6% followed by Penicillium 1.3%. The most active species were A. flavus which produce aflatoxin G1, A. ochraceus which produce ocratoxinA, and P. glabrum which produce patulin. We focused our study on production of aflatoxin G1 and patulin. About 16 samples of green coffee beans naturally occurred were examined. The tested samples were found contaminated by four mycotoxins aflatoxin B1,G1, ocratoxin A and patulin. The percentages of contamination were 50, 62.5, 75 and 100% respectively. It was found that roasting for 8 minutes at electric oven was sufficient to reduce the quantities of the tested mycotoxins aflatoxin B1,G1, ocratoxin A and patulin by 24.3, 21.4, 20.4 and 28.8% respectively. The factors affecting P. glabrum growth and patulin production, including temperatures and types of growth media, were also studied. The optimum temperature for patulin production was 28C using either PDA or CDA. It is also clear that addition of coffee to CDA or CA media enhanced patulin production compared to the two other media PDA or MEA. Two methods of roasting were compared