

## عنوان مقاله:

Isolation, Identification and antifungal profiles of Geotrichum, and Galactomyces from Dairy Products

## محل انتشار:

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## خلاصه مقاله:

**Introduction and Objectives:** Geotrichum species are yeast-like microorganisms that have both free living in environment and commensalism on mucous membranes of warm-blooded intestinal tract as normal mycobium. Several reports have shown that Geotrichum normally isolated from urine, sputum, feces and vaginal discharge samples. On the other hand, dairy products are the important sources of Geotrichum species as well as fruits and vegetables, soil, and plants materials. The most common species is Geotrichum candidum, followed by G. britannicum, G. carabidarum, G. ericense, G. fermentans, G. fragrans, etc. The aim of this study was to identify different species of Geotrichum from dairy products. **Materials and Methods:** 153 dairy products including, cheese (74), Yogurt (43), Dough (28) and milk (8) were collected. The 10 mL of sterile distilled water was added to each tube and vortexed. Finally, 5  $\mu$ L of supernatants were cultured on Sabouraud dextrose agar, supplemented with chloramphenicol. Plates were incubated at ambient temperature for 2-3 days and then suspected colonies to Geotrichum species were examined microscopically. DNA was extracted from pure colonies using boiling method and subjected for PCR and sequencing with ITS primers. Antifungal assay was performed according to CLSI protocol, M27 A3. **Results:** Out of 153 dairy samples, 47 cases (29.7%) were positive for different species of Geotrichum including, 23% from cheeses, 14.3% from Dough, and 60.5% from Yogurt. However, we could not isolate any fungal organisms for milk samples. Molecular analysis revealed that 25 (53.2%) of isolates were Geotrichum candidum and the rest of them (22, 46.8%) were Galactomyces candidum. Voriconazole was the most effective drug against all isolates. The MIC ranges and MIC90 values for G. candidum and Ga. Candidum isolates were 2 - 0.032  $\mu$ g/ml, 0.5 and 1- 0.032 and 1 $\mu$ g/ml respectively. Following it, caspofungin and itraconazole had the best antifungal activity. **Conclusions:** In this study, the identity of 25 and 22 isolates assigned to the G. candidum and Ga. candidum species by morphological criteria and molecular methods. Antifungal susceptibility of the Geotrichum species is rarely investigated but the limited number of available papers indicate are susceptible to systemic antifungals. However, amphotericin B is used as the first-line treatment but due to high toxicity, voriconazole is an appropriate substitute

**کلمات کلیدی:**

Geotrichum, Galactomyces, Dairy products, Antifungal

**لینک ثابت مقاله در پایگاه سیویلیکا:**

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