TITLE: Sheep's feces: potential reservoir of resistant pathogenic yeasts

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ABSTRACT: Although yeasts of the genus Candida are components of the normal microbiota of the oral cavity and gastrointestinal tract of humans and animals, recently an increase in the resistance of this genus to conventional antifungal agents is evident. This may make treatment of cutaneous and systemic infections difficult. Literature data are scarce in respect of animals, especially sheep under confinement conditions. The current study aimed to evaluate the fungal microbiota in sheep feces and to determine the *in vitro* susceptibility profile to the antifungal agents amphotericin B, fluconazole, itraconazole and ketoconazole. Ninety-eight samples of feces were collected from healthy sheep bred for meat. Samples were plated in Sabouraud Dextrose agar medium (OXOID®) and placed in a microbiological incubator at 30°C for 15 days. The yeasts were isolated and identified by macroscopic analysis in chromogenic medium and by biochemical tests (assimilation of carbohydrates and nitrogen). The susceptibility profile of the isolates was obtained using the broth microdilution method (M27-A2 of the Clinical and Laboratory Standards Institute, 2012). The results obtained showed a predominance of *Candida krusei* in 62% of the samples, *Rhodotorula mucilaginosa* in 32% and *Candida tropicalis* in 31%. The susceptibility test indicated that all isolates of *C. krusei* were susceptible to amphotericin B and resistant or had dose-dependent sensitivity to azole derivatives (fluconazole, ketoconazole and itraconazole), while *C. tropicalis* isolates were sensitive to amphotericin B and itraconazole and had dose-dependent sensitivity to ketoconazole and fluconazole. *R. mucilaginosa* presented sensitivity to ketoconazole and amphotericin B, but resistance to fluconazole and itraconazole. The gastrointestinal tract of healthy sheep is colonized by pathogenic and antifungal resistant yeasts. The spread of these fungi into the environment through feces is a potential risk to human health, especially for immunocompromised patients. Thus, the correct hygiene of the breeding place and the use of safety equipment during the handling of animals are necessary measures to avoid infection. These findings are a

starting point for more in-depth studies on the subject, as a way to guarantee better living conditions and health for the population.

Keywords: Antifungal resistance, *Candida sp*, sheep, feces