

## Storage of *Malassezia* spp. by using fruit seed fixed oils as cryoprotectants

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### Abstract:

Several studies have been developed in order to describe biological activities of plant derived products, including seeds. Seeds can be used in the production of several edible and inedible products, but the great majority of them is discarded into the environment and treated as waste product. Based on these facts, the aim of this work was to evaluate the use of seed oils extracted from guava (*Psidium guava*), papaya (*Carica papaya*), mango (*Mangifera indica*), passion fruit (*Passiflora edulis*) and water melon (*Citrullus lanatus*) in storing *Malassezia* spp. yeasts, which have been described to be highly sensitive to storage processes. Fixed oils were extracted by Soxhlet extraction method, using hexane as solvent. All five oils were tested in order to evaluate the occurrence of contamination and the presence of antifungal activity. After pre-storage analyses, colonies of 12 strains of *Malassezia* spp., after 96 hours of growth on Dixon agar, were removed and inoculated into cryogenic tubes containing 150 µL of Dixon broth and 150 µL of fixed oil from each evaluated seed or mineral oil, as quality control. The mixture was in contact with yeast cells for 45 minutes and then the suspensions were stored in freezers at -80°C. The strains were stored for 6 and 9 months. After this period, the content from the cryogenic tubes was added to slants containing Dixon broth, which were incubated for up to seven days. Subsequently, 100 µL of the inoculated broth were transferred to tubes containing Dixon agar and post-storage analyses were performed. A recovery rate of 100% was obtained for all evaluated treatments and for both evaluated storage period. Thus, it was observed that seed fixed oils were not toxic and they can be considered effective cryoprotectants for the storage of *Malassezia* spp.

**Key words:** Cryoprotectants, *Malassezia* spp., Seed oils, Storage