

TITLE: PHENOTYPING OF EARLY YARNS OF *Foeniculum vulgare* Mill, AS TO THE KILLER FACTOR

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ABSTRACT

Yeasts are unicellular fungi that play different types of biocontrol mechanisms, especially biofilm formation, production of antibiotic compounds and *killer* toxins. *Killer* toxin protein compounds of different antimicrobial potentials, act on microorganisms sensitive to such compounds and can eliminate representative units of cells of organisms of the same species and/or different genus. Through means of qualitative evaluations, we aimed to detect the production capacity of yeasts killer toxin isolated from fennel (*Foeniculum vulgare* Mill). Yeasts isolates (46 isolates) obtained from plant tissues of fennel (leaf, stem, and flower) were assigned by the Soil Fungus Collection of the Universidade Federal Rural de Pernambuco – CFS/UFRPE. All isolates, including those, use a standard killer sensitive, were cultured for five days in yeast extract, peptone, dextrose, and agar – YEPD + agar medium at 28±2°C and 12 hours photoperiod. Two sensitive strains of *Kodamaea ohmeri*, CFS 008 and CFS 044, were suspended in phosphate buffered saline – PBS (1×10^5 cells.mL⁻¹) and seeded with a sterile swab on *killer* indicator medium (yeast extract 10g, 20g glucose, 20g peptone, 20g agar, 0.03g methylene blue, 1000ml at 4.0 pH). The other yeasts strains were deposited punctually in the Petri dishes, previously seeded with the sensitive strain, in arrangements equidistant from 23 isolates per plate. After 48 hours of incubation, at 28±2°C and 12 hours photoperiod, the presence (positive) or not (negative) of an inhibitory halo with bluish borders around the colonies was observed. On the sensitive strain, CFS 008, 32,6% of the isolates were classified as the positive *killer* and on the sensitive strain, CFS 044, 63,04% of the isolates presented a positive *killer* character. Only 15 isolates presented positive *killer* expression on both sensitive strains. The findings of this study suggest the occurrence of specificity regarding the expression of the *killer* factor in relation to the sensitive strain used. In the biocontrol of phytopathogenic microorganisms, the process of selection of antagonistic mechanisms, such as the *killer* factor, is the primordial step to obtain promisingly applicable strains. However, the importance of robust and in-depth studies on the mode of action, efficiency and biotechnological adaptation of these compounds is emphasized.

Keywords: antagonistic characterization; fennel; *killer* expression.

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