Abstract

The purposes of this study was the isolation and identification of some yeast and evaluate their antibacterial effect, growth curve and studing its safety for *Oreochromis niloticus*. *Rhodotorula minuta*, *Saccharomyces castelli*, *Zygosaccharomyces* sp and two different species of *Candida* were isolated from intestine of *Oreochromis niloticus*; *Mylopharyngodon piceus*; *Hypophthalmichthys molitrix* and *Clarias Garipeneaus* muscles respectively. *Rhodotorula minuta*, *Zygosaccharomyces* species and *Saccharomyces castelli* had antibacterial activity against *Aeromonas hydrophila*, *Aeromonas veronii*, *Aeromonas sobria*, *Aeromonas jandaei*, *Pseudomonase anguilliseptica and Pseudomonas fluorescence*. *Saccharomyces castelli* was harmless to experimentally infected *O. niloticus*, while *Zygosaccharomyces* species *and Rhodotorula minuta* were pathogenic to *O. niloticus* at 0.2 ml $\times 10^5$ cells/ml by intraperiteneal injection (I/P). The mortality rate was 57.1 and 42.8% respectively in comparison to the control and *Saccharomyces castelli* groups, which the mortalities were 30 and 15.8% respectively.

The stationary phase of yeast was at the 5^{th} and 6^{th} day of growth with *Saccharomyces castelli* and *Rhodotorula minuta* while *Zygosaccharomyces* at 7^{th} and 8^{th} day. Higher viable cells were recorded at 4^oC storage and the number was declined by increasing storage time while the number of food stored at 25^oC declined and decreased monthly.

Two hundreds and twenty five apparently healthy *O. niloticus* (20 ± 3 g average body weight) were assigned randomly to five groups; each group in three replicates (15 fish per each replica). Dead *Rhodotorula minuta* and live *Saccharomyces castelli* were added to commercial feed (crude protein 30%) in two different dosages (5 and 10 g of yeast / kg diet) and fed Nile tilapia to evaluate its effect as immunostimulant and growth promoter. The fish were fed twice daily until satiation for 28 days.

At the end of experimental period, the fish was challenged intraperiteneal with *Aeromonas sobria* and *Pseudomonase fluorescens* and kept under observation for 14 days. Dead *Rhodotorula minuta* and live *Saccharomyces castelli* in the different doses had a significance increased in the growth parameters, heamatocrite value, respiratory burst, lysozyme activity and serum bactericidal activities. Also they decreased viable bacterial count in intestine and increased antibody titer of *A. sobria* and *Ps. fluorescence* antigen than control group. The y*easts increased the relative level of protection against *Aeromonas sobria* and *Pseudomonas fluorescence* in Nile tilapia. So the live cells of *Saccharomyces castelli* and dead cells of *Rhodotorula minuta* enhanced growth, immune response and resistance of *O. niloticus* against *A. sobria* and *Ps. fluorescens*.