**Comparative Study on the in vitro Antibacterial Efficacy of Aqueous and Methanolic Extracts of Quercus infectoria Gall`s Against Cellulosimicrobium cellulans**


ABSTRACT

The in vitro antibacterial efficacy of aqueous and methanolic extract of Quercus infectoria Olivier (Fagaceae) galls was tested against Cellulosimicrobium cellulans using extract concentration ranging from 0.25 to 4 mg mL-1. Both types of extract showed significant inhibition of C. cellulans growth with strong correlation between extract concentrations and degrees of antibacterial activity for concentrations ranging from 0.5 to 4 mg mL-1. Although, slight reduction of average diameter of inhibition zones after 24 h of incubation for aqueous extract (0.96 ± 0.148 cm) compared to methanolic extract (1.00 ± 0.182 cm), both extracts still attained the MIC value beginning at a concentration of 0.5 mg mL-1 but established higher concentration for the MBC at 2 mg mL-1. The antibacterial activity of methanolic extract was also significantly affected by the temperature with an optimum inhibition zone being obtained at 30 °C (1.38 ± 0.05 cm) and this was reduced to approximately 20% at temperatures of above 50 °C.



**Keyword:** Antibacterial, aqueous extract, Cellulosimicrobium cellulans, methanolic extraxt, Quercus infectoria