The Combination Effect of *Citrus bergamia* Risso et Poiteau Oil and Amoxicillin on *Staphylococcus aureus*

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**Aim of the study:** In this study, the antibacterial activity of the volatile oil of *Citrus bergamia* fruit peel and amoxicillin combination was investigated on antibiotic resistant *S. aureus* strains. *C. bergamia* are known as bergamot in Turkey and the fruit peels was used as a flavor agent in black tea after dried. This study is important for determination an alternative treatment approaches for the staphylococcal infections.

**Material and Methods:** The volatile oils of the fruit peels were obtained with hydrodistillation method. Firstly, the antibacterial effect of bergamot oil (pure) on multiple antibiotic resistant strains *Staphylococcus aureus* MU38 (methicillin resistant strain), *S. aureus* MU 40 and *Staphylococcus epidermidis* MU 30, were determined with disc diffusion method. Then the minimum inhibitory concentration (MIC) of the volatile oil and amoxicillin on the test bacteria were determined with tube dilution method. After determining the minimum inhibitory concentrations (MIC) of the volatile oil and amoxicillin, the volatile oil and amoxicillin were combined at the MIC concentrations and the new MIC values of the mixture on test bacteria were determined.

**Results:** Bergamot oil inhibited all of the three *Staphylococcus* strains and the inhibition zones are between 7-20 mm. The maximum antibacterial effect was determined on *S. epidermidis* MU 30 with 20 mm inhibition zone. The MIC values were determined as 5 mg/ml on all of the three *Staphylococcus* strains. The MIC values of amoxicillin on the tested bacteria were determined. Moreover, the antibacterial effect of the mixture of the bergamot oil and amoxicillin on the same bacteria were evaluated.

**Keywords:** *Citrus bergamia* (bergamot), *Staphylococcus*, synergistic activity.