

Abstract

In this study, Antibacterial effects of essential oil of four medicinal plants Ajowan (*Carum copticum*), Dill (*Anethum graveolens*), fennel (*Foeniculum vulgare*) and peppermint (*Mentha piperita*), on three pathogenic bacteria (*Vibrio parahaemolyticus*, *Vibrio harveyi* and *Vibrio damsela*) were studied. To determine the minimum inhibitory concentration (MIC) from the standard method of Broth Microdilution were used and at least minimum bactericidal concentration (MBC) was determined using the MIC values of the essential oil. The results showed that the lowest MIC value of *Carum copticum* essential oil was 1 mg/ml against *V. parahaemolyticus* bacteria and MBC value of this oil, twice the MIC was 2 mg/ml. The highest MIC value of *Mentha piperita* essential oil was 16 mg/ml against the *V. harveyi* and MBC value of this essential was 32 mg/ml. Maximum inhibition zone diameter of *Carum copticum*, at concentration of 32 mg/ml against *V. parahaemolyticus* bacteria and the minimum diameter of inhibition zone in the same concentration of *Mentha piperita* essential oil on the *V. harveyi* bacterial. Among the oils, *Carum copticum* oil was stronger, and bacteria were more sensitive to it, and *Mentha piperita* oil was weaker and the bacteria were resistant to it compared to other oils. The most sensitive and the most resistant bacteria to essential oil were *V. parahaemolyticus* and *V. harveyi*, respectively.

Key words: *Carum copticum*, *Anethum graveolens*, *Mentha piperita*, *V. parahaemolyticus*, *V. damsela*, *V. harveyi*.



University of Zabol

Graduate school

Faculty of Natural Resource

Department of Fisheries

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***In vitro* antibacterial effects of *Mentha piperita*,
Carum copticum, *Foeniculum vulgare* and
Anethum graveolens essential oil on *Vibrio*
parahaemolyticus, *Vibrio harveyi* and *Vibrio*
damsela bacteria**

Supervisor

Dr. A. Gharaei

Dr. J. Mirdar Harijani

By:

M. Amareh

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