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THE POTENTIAL BIOLOGICALLY ACTIVE EPOXIDES AND HYDROPEROXIDES DERIVED FROM NATURAL MONOTERPENE LINALYL ACETATE AS A MAJOR INGREDIENT OF LAVENDER ESSENTIAL OIL

Suzan A Khayyat

King Abdulaziz University, Saudi Arabia

Lavender oil, obtained from the flowers of *Lavandula angustifolia* (Family: Lamiaceae) by steam distillation, The major component of lavender oil is linalyl acetate was isolated and epoxidized thermally and photochemically using (mcpba, H₂O₂) respectively to produce mixture of 6,7-epoxy-3,7-dimethyl-1-octene-3-yl acetate (3) and 1,2-epoxy-3,7-dimethyl-6-octene-3-yl acetate (4) photochemicaly, While produced epoxide 4 only thermally. On the other hand, photooxygenation of 1 using different singlet oxygen sensitizers gave two hydroperoxide derivatives of 6-hydroperoxy-3, 7-dimethylocta-1,7-diene-3-yl acetate (5)

and 7-hydroperoxy-3,7-dimethylocta-1,5-diene-3-yl acetate (6) in the presence of tetraphenyl porphin (TPP), whereas gave hydroperoxide 6 only using hematoporphyrin (HP). Studies on the antifungal especially *Penicillium italicum* and *Rhizopus stolonifer* showed that linalyl acetate and its epoxides and hydroperoxides derivatives have good antibacterial action.

suzan.khayyat@yahoo.com
saekhayyat@kau.edu.sa