

# 3<sup>rd</sup> International Conference on Ecology, Ecosystem and Conservation Biology

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### Antibacterial activity of essential oils and antibiotics on bacterial strains isolated from infected urinary tract

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In this study, the antibacterial activity of some traditional herbal oils and antibiotics against infected urinary tract bacterial isolates was investigated. Oil discs with the minimum inhibitory concentration MIC of each were impregnated. After culturing and incubation the results showed that Dill oil is the most effective oil that inhibited 61% of *E. coli*, 56% of Gram (+) cocci, and 33% of Gram (-) bacilli. Generally, it inhibited 48% of all isolates. Parsley and Celery oils inhibited 56% of Gram (+) cocci, followed by Gram (-) bacilli that showed 48% and 41% inhibition, respectively. Their effects on *E. coli* was much less inhibiting 29% and 21%, respectively. Generally, they inhibited 41% and 34%

of local urinary tract bacterial pathogens. Thyme's oil showed effect only on Gram (-) bacilli and *coccobacilli* reaching 37% and 21%, respectively. It had no effect on Gram (+) cocci. It's generally inhibited only 25% of isolates. Chamomile's oil was the weakest tested oil. It affected only the Gram (-) bacilli while it had no effect on Gram (+) cocci generally inhibited only 5% of all isolates. In this study, the antibiotics tested were Amoxicillin/clavulanate, piperacillin/tazobactam, cefotaxime, imipenem, amikacin, norfloxacin, trimethoprim/sulfamethoxazole (oxid<sup>®</sup>). Two Strains of Gram (+) cocci were representative for VITEK<sup>®</sup> system identification as antibiotic sensitivity pattern was done. One was sensitive to all tested antibiotics except imipenem and amikacin and it was *Enterococcus faecalis*, the second was resistant to all the tested antibiotics and it was *Staphylococcus aureus*. 50% of all Gram (-) *coccobacilli* strains were submitted for VITEK<sup>®</sup>, and

they were all found to belong to *E. coli*. Gram (-) bacilli were divided into clusters and the representatives were identified as *Morganella morganii*, *Pseudomonas aeruginosa*, *Pseudomonas fluorescens*, *Proteus mirabilis*, and *Klebsiella pneumoniae*.

### Biography

Marwa M. Elmaghrabi is currently a permanent researcher of stem cells and tissue culture labs at Faculty of Medicine Alexandria University. Quality and infection control advisor at Canadian Academy for Science, ISO 9001:2015 lead auditor, PhD (Scholar), M.SC (Microbiology, 2012). She accumulated 9-Years of experience in Health Care Organization in Quality and Infection Control sector. She participated in a number of international and regional microbiology conferences as a speaker and moderator. She contributed to PAN-African and electronic network project as broadcasting lecture. She served as member of Arab QOSH of Safety professional's experts.

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