

## ANTI- BACTERIAL EFFECT OF *CITRUS* ESSENCE

### (*CITRUS PARADISI* AND *CITRUS RETICULATA*) FROM CHLEF REGION, ALGERIA

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#### ABSTRACT

*Citrus* essences were obtained by cold pressing of the zest of *Citrus paradisi* and *Citrus reticulata* harvested in the Chlef region (Algeria). To assess the quality and composition of these natural extracts, analyzes were performed, firstly by determining the organoleptic, physical and chemical properties, hence qualitative and quantitative analysis were done by gas chromatography coupled to spectrophotometry mass (GC / MS).

Among the 17 pathogenic bacteria tested (reference and isolated), we noted the half of the tested strains are sensitive to the essence of *C. paradisi* with a diameter ranging from 11 to 16 mm for *P. mirabilis*, *Serratia sp.* and 17-19 mm for very sensitive (*S. aureus* ATCC®25 923, *S. aureus* MRSA + ATCC® 43300, *E. coli* ATCC®25 922, *S. epidermidis*) and 21 mm or more, for extremely sensitive (*S. aureus* ATCC®29 213, *P. vulgaris* and *Streptococcus sp.*). The second halves are resistant to the essence of this variety.

The essence of *Citrus reticulata* showed positive antibacterial activity against 64% of tested strains (11 strains), 27% (03 strains) which are extremely sensitive (*S. aureus* ATCC®25 923 *S. epidermidis* and *P. vulgaris*), with a diameter greater than 20 mm, 55% (06 strains) are sensitive (213 ATCC®29 *S. aureus*, *E. coli* ATCC®25 922 29 212 *E. faecalis* ATCC®, *P. mirabilis*, *Streptococcus sp.*, *Serratia sp.*) with diameters of between 11 and 16 mm and 18% (02 strains) are highly sensitive (*S. aureus* and *B. subtilis* 737 ATCC®29 ATCC®6 633).

The essence of *Citrus reticulata* has minimum inhibitory concentration (MIC) ranging from 500 to 250 .mu.l of E. / ml against the strain *S. aureus* ATCC® 25 923, 50 .mu.l of E. /ml against the strain *B. subtilis* ATCC® 6633, 25 .mu.l of E. / ml against the strain *S. aureus* 29 737 ATCC®, 3.90 .mu.l of E. / ml against the *S. epidermidis* strain.

As for the essence of *C. paradisi*, two trends emerge. When CMI less than 50 .mu.l I / ml, in the presence of *S. aureus* ATCC®25 923, 213 *S. aureus* ATCC®29. These bacteria are most susceptible to this species. When MICs was between 250 and 100 .mu.l of E. / MI, we have *S. aureus* MRSA + ATCC®43 300 *S. epidermidis* and *Streptococcus sp.* These bacteria are less sensitive than the first.

**KEYWORDS:** *Citrus paradisi*, *Citrus reticulata*, Cold Expression, Antibacterial Effect