

BIOLOGICAL AND PHYTOCHEMICAL EVALUATION OF NATURAL SUBSTANCES IN BUTANOL AND ACETATE EXTRACTS OF *Gossypium arboreum*

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Abstract. - Cotton is known since antiquity for its many uses, given the interest reserved by most of the peoples of the world to its fibers and abandon the remaining parts of the plant as industrial and agricultural waste, we decided to make a valuation of one of the neglected parts which represents 81% of the flower of the plant *Gossypium Arboreum*, namely seeds and capsules by a phytochemical and microbiological study. The phytochemical study revealed the presence of five major chemical groups: tannins, alkaloids, flavonoids; General analysis of flavonoids, flavonoid free and flavonoid glycosides, saponins, unsaturated steroids and steroid derivatives. The unsaturated sterols and terpenes are rare. The yield of three organic extracts obtained after maceration by the ethanol / water mixtures, then the successive extraction of flavonoids extracted with three solvents (chloroform, ethyl acetate and n-butanol) is successively: in seed 0.29 %, 0.98% and 0.72% and capsules 0.34%, 0.92% and 0.72%. With separation and purification of the heteroside flavonoids, which is very soluble in water, from the last two extracts fractional crystallization using acetone. The extracts obtained are analyzed by thin layer chromatography (TLC) and paper and allowed us to predict the existence of some flavonoids species: flavanones, flavonols and iso-flavanones. The study of the antibacterial activity of seed extracts showed an average efficiency of extracted butanol, ethyl acetate, and chloroform with 5 pathogenic bacterium strains: *Staphylococcus epidermidis*, *Escherichia coli*, *Proteus vulgaris*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa*. A medium to low inhibitory potency of the butanol extract with *Escherichia coli* and *Proteus vulgaris*; and without effects on other strains.

Key-words: *Gossypium Arboreum*, extraction, flavonoids, chromatography, antibacterial activity.