

Activity of Indian habitat plants extracts against *Mycobacterium tuberculosis* to treat tuberculosis

S.C. NARWADIYA¹, S.V. SAOJP², U.L. DHUMNE³,
P.M. TUMANE⁴ and V.G. MESHARAM⁵

¹P.G. Department of Microbiology, R.T.M Nagpur University Nagpur (India)

²Su-Wishwas Diagnostic Centre, Central Bazar Road, Ramdaspath Nagpur (India)

³National Institute of Miners' Health, JNARDDC Campus Opp wadi Police Station Wadi, Nagpur (India)

⁴Sindhu Mahavidyalaya, Panchpaoli, Nagpur (India)

(Received: April 10, 2008; Accepted: May 30, 2008)

ABSTARCT

Tuberculosis (TB) kills about 3 million people per year worldwide. Furthermore, TB is an infectious disease associated with HIV patients, and there is a rise in multidrug-resistant TB (MDR-TB) cases around the world. The study evaluated the anti mycobacterial activity of ethanolic extracts of four plants from Indian habitat for in vitro anti tubercle activity. Experiments were conducted to study the effect of extracts against drug-resistant *M. tuberculosis* isolates. Out of four plants *Pheonix dactylifera* showed the best activity (MIC = 100 µg/mL) against the sensitive *Mycobacterium tuberculosis* strains. The following plants were active also but at 200 µg/mL or above level *Abutilon indicum*, *Swertia chireta*, *Allium cepa*. The testing was performed on H37Rv strain of *Mycobacterium tuberculosis* and was found to be being inhibited by the alcoholic extracts of *Pheonix dactylifera* and *Abutilon indicum*. These data point to the importance of biological testing of extracts against drug-resistant *M. tuberculosis* isolates.

Key words: *Mycobacterium tuberculosis*, Herbal Medicine, Treatment of TB.

INTRODUCTION

Tuberculosis is an infectious disease caused by the bacterium *Mycobacterium tuberculosis*. Tubercle bacilli mainly affects the lungs, causing lung tuberculosis (pulmonary tuberculosis). However, in some cases other parts of the body may also be affected leading to extra-pulmonary tuberculosis¹.

TB germs usually spread through the air. When patient with Pulmonary Tuberculosis coughs, sneezes, or talks he throws TB germs in to the air in the form of tiny droplets. These tiny droplets when inhaled by another person may spread TB. When patients with TB are being taking effective treatment they stop spreading the germs within a few weeks. But unless they take the treatment

regularly and complete it, they are likely to develop more dangerous form of TB known as drug-resistant tuberculosis, which they can then spread to others¹.

Tuberculosis continuous to be a global problem, with nearly one third of the world's population harboring latent infection² and an estimated 8.3 million new cases of and 1.8 million deaths attributed to this disease in year 2000².

This disease together with HIV and malaria is one of the main cases of mortality due to an infectious disease³. Currently used front-line antibiotics can be effective but these are not available in all places in the world, and there is also the severe problem on newly emerging drug-resistant strains due to the use of inferior drugs.