

## Screening for active compounds in *Rhus coriaria* L. crude extract that inhibit the growth of *Pseudomonas syringae* and *Ralstonia solanacearum*

### ABSTRACT

An experiment was performed to study the antibacterial activity of methanol, acetone, alcohol and aqueous extracts from the fruit of *R. coriaria* by disk diffusion assay in terms of minimum inhibitory concentrations (MIC), minimum bactericidal concentrations (MBC) and killing-time curve. The detection of the components was also fulfilled using Gas Chromatography–Mass Spectrometry (GC-MS) and also tested for their antibacterial activity. The tested bacteria were *Pseudomonas syringae* (Accession No. KJ858057), a tomato bacterial speck causal agent, and *Ralstonia solanacearum* (Accession No. KJ881159) causing tomato bacterial wilt. Furthermore, the inhibition criteria were made by different extracts of the sampled bacteria which were measured and compared with standard antibiotic (chloramphenicol). Aqueous extract displayed better outcomes against *P. syringae* and *R. solanacearum* as compared to chloramphenicol. According to the GC-MS test results, the aqueous extract was composed of 39 different phytochemicals, together with eight elements in the high peak region, namely Furfural, 1-Cyclopetene, 2,5 Furandione, Phloroglucinol, Succinic acid, Malic acid, P-Tolylacetic acid and Coumalic acid. Among these, it was discovered that 2,5 Furandione was the most important antibacterial element that is present in sumac. The results from the current study indicate that different extracts of *R. coriaria* contain a variety of antibacterial compounds which can potentially be used to produce an extensive range of herbal mixtures with anti-bacterial properties for controlling diseases in crops belonging to the Solanaceae family.

**Keyword:** Malic acid; Phloroglucinol; *Rhus coriaria*; 1-Cyclopetene; 2,5 Furandione