

ABSTRACT

Two medicinally important plant species *Solanum surattense* and *Bidens biternata* belonging to Solanaceae and Asteraceae were selected for phytochemical investigations as well as evaluation of their antioxidant and enzyme inhibition activities using DPPH, FRAP and acetylcholinesterase assays. Most of the extracts along with their fractions extracted in different solvents have shown remarkable results. The neutral fraction (UB-1) of *B. biternata* and *S. surattense*'s acidic fraction (US-2) showed highest % inhibition activity. Fractions (US-1, US-2 and UB-4) exhibited potent radical scavenging % inhibition values observed as $82.89 \times 10^3 \mu\text{g/ml}$, $83.9 \times 10^3 \mu\text{g/ml}$ and $88.9 \times 10^3 \mu\text{g/ml}$ respectively. Flavonoid and total phenolic contents were determined. *S. surattense*'s neutral fraction coded as (US-1) contain maximum phenolic contents as 204.3 mg GAE/g. Phenolic contents are absent in *S. surattense*'s basic fraction (US-3) and *B. biternata*'s neutral (UB-1) and basic (UB-3) fractions.

Fourteen derivatives of 2-aminothiophenol were prepared, All the derivatives were crystalline in nature and had specific odour. Structure of the derivatives confirmed with the help IR spectroscopy. All the derivatives were subjected to DPPH, FRAP and enzyme inhibition assays. Only two derivatives ST-10 and ST-12 showed radical scavenging activity remaining were inactive towards DPPH. Synthetic samples were also tested for enzyme inhibition assay, all were active against acetylcholinesterase, but ST-2 and ST-3 showed maximum % inhibition such as $83 \times 10^3 \mu\text{g/ml}$ and $81 \times 10^3 \mu\text{g/ml}$.