

Minor Project on : **Natural Dyes as pH indicators**
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The leaf extracts of *Alternanthera dentata* and floral extract of *Impatiens balsaminacea* used for neutralization titrations gives a very good result and they have very good indicator action. The visual method help us to understand neutralization point by the colour change from yellow to red and pH metric is based on the sharp change in the pH values. Natural indicators have almost same effect as that of commercial indicators. Titration of strong acid against strong base, strong acid against weak base and weak acid against strong base using floral extracts of families Leguminesae, Convolvulace, Nyctaginaceae, Combretaceae, Balsaminacea and extract of leaf of Amaranthace family showed a good agreement with commercial indicators. Mixed indicators were to be used for the detection of neutralization point in case of volumetric analysis of weak acid against weak base. But the plant extracts can replace the mixed indicator need is such type of titrations.

The advantages of natural indicators over commercial indicators are that they are non-toxic, cheaply available, biodegradable in nature, easy to handle. Freshly prepared extract gave better results. Due to the deleterious environmental effects of conventional indicators, their availability and the cost factor a need for the application of natural indicator arises. Moreover natural dyes have more aesthetic quality than synthetic dyes when used as indicator. These extracts were used for the separation and identification of compounds by different chromatographic techniques and spectroscopic methods. Isolation of compounds from the extract *Alternanthera dentata* and *Impatiens balsaminacea* was carried out

by column chromatography. Compounds isolated from the extract of *Alternanthera dentata* are Stigmasterol and from *Impatiens balsamina* are kempferol and, 2-Methoxy 1,4- Naphthaquinone.

Antimicrobial study of the extract of *Impatiens balsamina* and *Alternanthera dentata* shows that this extract is active against *Staphylococcus aureus*, *Bacillus subtilis* and *Escherichia coli*. But in the case of *Pseudomonas aeruginosa* the extract is ineffective. The compounds present in these plants need more study for exploring the potential of these plants.

Due to concern about rising prevalence of pathogenic micro organisms, which are resistant to modern antibiotics, its high cost, adulteration and increasing toxic side effects of synthetic drugs coupled with inadequacy in disease treatment cannot be overemphasized. The use of plant extracts and phytochemicals with known antimicrobial properties can be of great significance in therapeutic treatments. Due to the concern about side effects of conventional medicine, use of natural products as an alternative to conventional treatment in healing and treatment of disease is on rise.

An intensive study is thus required on the extracts of plants and biologically active compounds isolated from them, used for natural therapies or herbal medicine.