PREFACE

Medicinal herbs are significant source of synthetic and herbal drugs. In the commercial market, medicinal herbs are used as raw drugs, extracts or tinctures. Isolated active constituents are used for applied research. For the last few decades, phytochemistry (study of plants) has been making rapid progress and herbal products are becoming popular. There has been dramatic rise in the sale of herbal products like Allium sativum, Hypericum perforatum, Spirulina, Echinacea angustifolia, Ginkgo biloba and Silybum marianum.

Owing to growing demand of herbals, the need of the hour is to intensify research in the field of medicinal herbs and to get authentical information on the subject. Herbal products are often questioned for quality control and assurance. Majority of the herbal products fails in the laboratory test for active constituents mentioned on the label. Extracts standardized to active constituents and marker compounds have definite advantage over the crude drugs.

Chemical composition of herbs is always a complex subject. A medicinal herb can be compared with a chemical factory due to presence of number of chemical constituents. The literature on this aspect is scattered and what is required today is interactions and discussions, covering all aspects including chemical formulas, structures and standards applicable to isolated constituents with special reference to biological activity.

From an analytical point of view, flavonoids may be grouped into various types of monomeric aglycones, bi-, tri-, and oligo-flavonoids including proanthocyanidins, C-alkylated flavonoids, flavonoids with different levels of O-methylation, and flavonoids with one or more saccharide units, which may include various types of acyl substituents

The flavonoids under investigation may be part of complexes, may occur in complex matrices, and some flavonoids like the anthocyanins may exist on a variety of equilibrium forms. A successful characterization will thus follow a specific analytical route designed for the type of flavonoids under investigation, and the sort of
information that is looked for. Without reference compounds the characterization of a novel compound will normally require more spectroscopic data than in the determination of a flavonoid that has been reported earlier. The amounts of flavonoids present in most plant tissues are relatively small even though the visual impression is quite striking.