

DOCTORAL CANDIDATE: Seethapathy Gopalakrishnan Saroja
DEGREE: Philosophiae Doctor
FACULTY: Faculty of Mathematics and Natural Sciences
DEPARTMENT: Section for Pharmaceutical Chemistry,
Department of Pharmacy
AREA OF EXPERTISE: Pharmacognosy, Ethnobotany,
Ethnopharmacology, herbal medicine
SUPERVISORS: Helle Wangensteen, Hugo J. de Boer, Berit
Smestad Paulsen, Kaliamoorthy Ravikumar.
DATE OF DISPUTATION: 25th of June 2019
DISSERTATION TITLE: *Ethnobotany, phytochemistry and DNA
metabarcoding studies on Indian traditional
medicine*

Medisinplanter er grunnlaget for tradisjonell medisin og spiller en viktig rolle i primærhelsetjenesten flere steder i verden. I tillegg spiller urteprodukter en viktig rolle i den økende bruken av komplementær medisin. Den tradisjonelle kunnskapen står i fare for å bli tapt, og etnofarmakologi er et viktig område for å ta vare på tradisjonell medisinsk kunnskap. Forfalskning er et økende problem innen urtemedisin og kvalitetskontroll av produktene er viktig. Spektroskopiske metoder og DNA barkoding er nyere metoder og oppgaven viser at dette er metoder som kan brukes for å kontrollere kvaliteten på produktene.

Medicinal plants form the basis of traditional medicine health systems and play an important role in fulfilling primary healthcare needs around the world. Additionally, traditional medicine based herbal products have gained increasing popularity as complementary therapies. However, traditional knowledge on medicinal plants is eroding and deteriorating, and the commercialization of herbal medicine has also led to contamination and adulteration. Therefore, the focus of this thesis is documentation of traditional knowledge on dioecious plants (i.e., having distinct male and female individual plants) and validation of traditional knowledge on plants use. Secondly, this thesis utilizes new analytical approaches for quality control of herbal products. Our results indicate that folk healers recognize gender in plants, and reported gender preferences while using them as timber, food and medicine. Furthermore, the active chemical constituents of *Canarium strictum* Roxb. (Burseraceae) showed anti-inflammatory effects, that gives a rationale for the widespread usage of the resin in India. The quality control of herbal products illustrate that quantitative ¹H NMR, DNA barcoding and DNA metabarcoding have its own merits and demerits, its specific strength lies, while applying appropriately, in the value chain of herbal products.