

Propagation Indigenous Herbs[®]

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INTRODUCTION

Aspects to be discussed.

- Why propagate medicinal plants?
- Difference from producing other plants.
- Factors influencing success.
- Promoting use of African medicinal plants.
- African medicinal plant standards (AMPS).
- Quality control.
- Marketing.

WHY PROPAGATE MEDICINAL PLANTS?

- Demand is growing worldwide.
- Alternative crops, grow in diverse conditions, create jobs.
- High profit possible.
- Why indigenous? Exotics—strong competition.

PROBLEMS WITH MEDICINAL PLANT CULTIVATION

- Fraud.
- Quality control.
- Marketing more important than efficacy, can sell anything (placebo).
- Market penetration.
- Legislation difficult (nutritional supplement, GRAS, new activity GAP, GMP).
- Dangers side effects, market collapse Kava.

DIFFERENCE FROM GROWING OTHER PLANTS

- Product is a chemical compound, quantification may be difficult.
- Can be in root, bark, or leaves.
- Environmental parameters may affect concentration strongly.
- Limitations on pesticides and other residues.
- Chemotypes may be available—problem and opportunity.
- Patenting? Processing easier. (High quality grape seed, oral protection, antibacterial, protection plant fungal pathogens, replace antibiotic feed additives.)

FACTORS INFLUENCING SUCCESS

- Meet market need (appetite suppressant vs. anti-malarial, anti-aging, anti-inflammatory, chronic rather than acute, maintaining health, cosmetic, skin lighteners).
- Contracts with important role players in product cycle (propagators, growers, suppliers — export and import, extraction, other processing, formulation, wholesale, and retail marketers).

BACKGROUND TO AFRICAN MEDICINAL PLANT STANDARDS

- Sub-Saharan Africa contains about 62,000 plant species, roughly one-quarter of the world's species.
- Trade of African medicinal plants in Europe is very low compared to species from India and China.
- Probably because there are no trading standards available (oral transfer knowledge).
- E.U. Centre for the Development of Enterprise (CDE) provided funding to develop trade standards: to create jobs in Africa.
- The E.U. invited nine leaders in African medicinal plant research to tender for the project.

CONTRACT WITH CDE

- Consortium J.N. Eloff, B.-E. van Wyk, G.E. Swan, R. van Brummelen successful.
- Get co-operation from scientists from rest of Africa and from leading role players in Europe.
- Identify most important African medicinal plants.
- Subcontract scientists to write profiles.
- Establish executive committee to oversee the project — Ben-Erik van Wyk, Ameenah Gurib-Fakeem, Thomas Brendler, and Denzil Phillips.

PROFILES DESCRIPTION — GENERAL ASPECTS

- General description (e.g., family, synonyms, vernacular names, geographical distribution, conservation status, photographs, line drawings) origin and preparation of plant material (e.g., cultivation/sustainable wild crafting, plant parts used. Flowering/harvesting times, parts used and preparation).
- Establish TLC fingerprints (e.g., Western herbal medicines).

USE AND EFFICACY

- Formulation and dosage.
- Chemical constituents according to literature.
- Medicinal uses (traditional uses and uses described in pharmacopoeias).
- Known biological activities (bioassays and pharmacological information).
- Clinical evidence of efficacy.

SAFETY

- Toxicity according to literature.
- Laboratory results (LD50 brine shrimp assay, cellular toxicity).
- Warnings, contraindications, and side effects, and interactions with other drugs if known.
- Evaluation of probable efficacy and safety.
- Evaluate probable efficacy for each use and safety on criteria of Goldberg et al. Botanical Safety Handbook.

SELECTION OF PRIORITY SPECIES

- List of more than 500 species selected from lists of Herbal Products Association, Iwu, Brendler and publications by Van Wyk, Iwu, Oliver-Bever, Hutchings, and Gurib-Fakeem.
- Parameters used for selection: Safety, efficacy, already widely used or good potential, possibility of cultivation, Sustainable use, not threatened, different areas of Africa, not used as narcotic.

TWENTY-TWO SPECIES SELECTED IN ROUND 1

<i>Agathosma betulina</i>	Africa
<i>Aloe ferox</i>	South Africa
<i>Antidesma madagascariense</i>	East Africa
<i>Aphloia theiformis</i>	East Africa
<i>Aspalathus linearis</i>	South Africa
<i>Balanites aegyptiaca</i>	West Africa
<i>Boswellia sacra</i>	North Africa
<i>Cola nitida</i>	West Africa
<i>Cyclopia genistoides</i>	South Africa
<i>Danais fragrans</i>	East Africa
<i>Harpagophytum procumbens</i>	South Africa
<i>Harungana madagascariensis</i>	East Africa
<i>Hypoxis hemerocallidea</i>	South Africa
<i>Kigelia africana</i>	East Africa
<i>Moringa oleifera</i>	West Africa
<i>Pelargonium sidoides</i>	South Africa
<i>Prunus africana</i>	East Africa
<i>Sceletium tortuosum</i>	South Africa
<i>Siphonochilus aethiopicus</i>	South Africa
<i>Sutherlandia frutescens</i>	South Africa
<i>Warburgia salutaris</i>	South Africa
<i>Xysmalobium undulatum</i>	South Africa

VALIDATION AND SELECTION OF REST

- Additional funding received (CTA) workshop with 30 scientists, producers, exporters/importers from 17 countries.
- To evaluate profiles developed.
- To select another c 27 species with the highest priorities from list of c 73.
- Advise on further work.

LIVING DATABASE

- Information will be presented on website with open access.
- Additional information will be evaluated and added.
- Closer cooperation with academia and industry.
- Will identify gaps — research projects.
- Will provide standards and lead to larger share of market for African species.
- Provide more jobs, improve primary health care.

EDITORIAL COMMITTEE

- Prof. Arnold Vlietinck, Belgium.
- Prof. P. Houghton, U.K.
- Members of the Executive Committee.

OUTCOME OF WORKSHOP

- Review and refine AMPS methodology.
- Critically review the first 21 profiles prepared by the AMPS team.
- Select a further 29 species for phase two of the AMPS project.
- Select appropriate forms of international validation.
- Recommend appropriate methods of dissemination.
- Learn more about related research activities in Africa.
- Develop long-term linkages between workshop delegates.
- Consider if AMPS can lead to an African herbal pharmacopoeia?
- Started Association for African Medicinal Plant Standards (AMPS).

ASSOCIATION FOR AFRICAN MEDICINAL PLANT STANDARDS (AAMPS)

- Two delegates volunteered c Euro 5000 to start AMMPS.
- The AAMPS registered as a company in Mauritius.
- Websites <www.aamps.org> and <www.aamps.net>.
- Published in the quarterly newsletter of World Health Organization.
- Directors: Kobus Eloff (South Africa), Mr. Thomas Brendler (Phytophile, Germany), Prof. Ameenah Gurib-Fakeem (Mauritius), Prof. Emias Dagne (Ethiopia), Prof. Ben-Erik van Wyk (South Africa), Prof. Marian Addy (Ghana).
- Main aim: to develop African herbal pharmacopoeia.

AMPS PHASE II AND AAMPS

- Have just received funding EU-CDE to continue with second phase to complete 50 most important species.
- Funding for development AAMPS.
- ProInvest in association with Cultural Relations and Indigenous Awareness Associates (CRIAA) nearly finalized, this will ensure long-term viability of AAMPS.

CONCLUSION

- Will stimulate interest in African medicinal plants.
- Closer liaison between African scientists and other role players, win-win situation.
- Proper validation and evaluation critical for wide acceptance and success of this project.
- Continued upgrading and correction of information is one of major strengths of this approach.
- Wide interest from important role players in diverse fields.
- Impact on propagators and growers of African medicinal plants could be substantial.

- To maximize potential, close liaison between different role players are important.
- Certification essential.
- The AAMPS can play an important role to connect different participants.
- Consider joining AAMPS, see <www.aamps.org> or <www.aamps.net>.