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Establishing a herbal clinic: Kenya



GENERAL INFORMATION

- ◆ **Implementing institution**
Department of Botany, Jomo Kenyatta University of Agriculture and Technology (JKUAT)
- ◆ **Head**
Professor Nick Wanjohi (vice-chancellor)
- ◆ **Details of institution**
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- ◆ **Implementation period**
Three years
- ◆ **Costs**
Setting up the clinic cost JKUAT US\$1,300 (Ksh 100,000) and another US\$1,300 for the initial collection and screening of plants for medicinal use.

SUMMARY

In Kenya and elsewhere in sub-Saharan Africa, traditional herbal medicines are commonly used to treat a range of diseases. Such practices are especially widespread in rural areas where access to modern health care facilities is limited and the cost of modern pharmaceuticals is beyond the means of most people. In addition, there are very few effective drugs available for treating some of the most common ailments in these areas, including asthma, HIV/AIDS, malaria and typhoid.

Medicines derived from indigenous Kenyan plants, however, have long been used to treat these and other diseases. Therefore, a clinic was established outside the university gates, offering treatments based on natural herbal products. Patients suffering from such common diseases as those listed above plus diabetes, hypertension, ulcers and others were provided with herbal remedies and checks were made of their progress. Initially, some 100 people were treated, many of whom were referred to the clinic by modern health practitioners. Since then, the clinic has treated thousands of individuals.

BACKGROUND AND JUSTIFICATION

In 1999, the faculty of science at Jomo Kenyatta University of Agriculture and Technology (JKUAT) agreed that the only way to control and treat debilitating

tropical diseases such as malaria and typhoid was through the application of scientific research. At the same time, it was realized that most of the chronic diseases, including those resistant to existing conventional drugs, could be cured using traditional herbal medicines.

To tackle this issue, the university collaborated with the Kenya Medical Research Institute to establish the Institute of Tropical Research on Medicines for Infectious Diseases within the university. The new institution's remit was to train master's and doctoral students, mainly in the field of alternative medicines, with the aim of developing new drugs from the many indigenous medicinal plants available in Kenya.

However, even if such drugs were to be developed, the majority of Kenyans living in rural areas are poor and cannot afford to attend hospitals or purchase expensive conventional drugs. There was a need, therefore, for the university to develop links with traditional healers to develop inexpensive and reliable herbal medicines for a variety of common ailments.

Responding to this need, staff in the Department of Botany, JKUAT, began the systematic identification of those plants used in traditional herbal medicines, collecting medicinal materials from the field and preparing medicines and dispensing them to patients.

Among the main challenges faced was the accurate determination of the correct dosage to prescribe to patients. Also, as the herbal clinic was a new con-

cept in Kenya, it faced a great deal of resistance from practitioners of modern medicine and needed to obtain formal registration from government officials.

DESCRIPTION

Establishing a formal herbal clinic in Kenya is difficult since there are many government regulations to which to adhere.

First, herbalists must demonstrate their proficiency in the art, and especially their knowledge of plant identification, using either the vernacular or botanical species names. Also, in order to receive a certificate of recognition, the practitioner's plant materials must be checked and recorded by botanists at the University of Nairobi, Kenyatta University, the Kenya Medical Research Institute or the Kenya Forest Research Institute. Having satis-

fied this criterion, the herbalist must register as a herbal practitioner with the Ministry of Gender, Sports, Culture and Social Services. Having obtained a certificate from the Ministry, the herbalist must then apply for a permit to operate from the municipal council or local authority within which the clinic will be situated. These permits are issued under the close scrutiny of public health officers, who must issue a letter to certify that the clinic meets certain conditions of hygiene. Finally, two permits are issued: one by the local authority and the other by the Ministry of Trade and Industry according to the Trade Licensing Act.

During the initial phase of the project, medicinal plants were screened for microbial activity in the laboratory and, based on traditional practices, used to treat nine ailments: arthritis, asthma, bronchitis, *Candida* (thrush), HIV/AIDS, malaria, rheumatism, typhoid and ulcers.



Figures 1a and 1b | *Aloe* species, used to treat ulcers and skin conditions.

Among the plants used were *Acacia* spp. (family Fabaceae), *Albizia anthelmintica* (the aru or worm-cure tree, family Fabaceae), *Aloe* spp. (family Liliaceae, figs. 1a and 1b), *Asparagus africana* (family Asparagaceae), *Balanites glabura* (family Balanitaceae), *Carissa edulis* (the Natal plum, family Apocynaceae), *Catharanthus roseus* (the Madagascar periwinkle, family Apocynaceae), *Chalybea* sp. (family Melastomataceae), *Coleus aromaticus* (Indian borage, the mint family, Lamiaceae, fig. 2), *Commiphora africana* (hairy corkwood, family Burseraceae, fig. 3), *Erigeron canadensis* (fleabane, family Asteraceae), *Fagara* sp. (family Rutaceae), *Ipomoea kituensis* (a relative of the sweet potato, family Convolvulaceae), *Kigelia africana* (the sausage tree, family Bignoniaceae), *Leonotis* spp. (family Lamiaceae), *Melia volkensii* var. *keniae* (family Meliaceae), *Mimosa pudica* (the sensitive plant, family Fabaceae), *Ormocarpum trichocarpum* (caterpillar bush, family

Fabaceae), *Pappaea capensis* (jacket plum, family Sapindaceae), *Prunus africana* (pygeum or African stinkwood, family Rosaceae), *Psidium guajava* (guava, family Myrtaceae), *Rboicissus tridentate* (wild grape, family Vitaceae), *Sterculia africana* (African star chestnut, family Sterculiaceae), *Striga hermonthica* (witchweed, family Scrophulariaceae), *Synadenium compactum* (African milkbush, family Euphorbiaceae), *Urtica dioica* (stinging nettle, family Urticaceae), *Warbugia ugandensis* (East African greenheart, family Canellaceae, fig. 4) and *Ximeria caffra* (family Olacaceae).

Depending on the disease being treated, the bark, buds, flowers, leaves or roots of the plant were used.

After determining the toxicity levels for the various medicines using brine shrimp (*Artemia salina*) in a bioassay, dosages (grammes per litre) were calculated for medicines made from both pow-



Figure 2 | *Coleus aromaticus*, in the mint family, the leaves of which are used to treat worms and menstrual complaints.



Figure 3 | *Commiphora africana*, the bark of which is used to treat cardiac problems.



Figure 4 | *Warbugia ugandensis*, the roots and bark of which are used to treat rheumatoid arthritis.

List of some Kenyan medicinal plants showing the parts used to prepare medicines, target diseases and recommended doses.

PLANT SPECIES AND PREPARATION DOSAGE	PARTS USED	DISEASE	DISPENSING DOSAGE
<i>Aloe</i> sp. (1 leaf per litre of water) and <i>Synadenium campactum</i> (1 tablespoon per litre of water)	leaves charcoal made from burned wood	peptic/duodenal ulcers	1 tablespoon two or three times a day depending on the condition of the patient
<i>Aloe</i> spp. (3 leaves blended in 250ml of olive oil)	leaves	skin rash associated with measles in children and pimples in adults	applied to affected area twice a day
<i>Commiphora africana</i> (10g of dry powder per litre of water)	bark	cardiac problems, especially cholesterol in veins and regulation of heart palpitations	1 glass twice a day for 6 days
<i>Coleus aromaticus</i> (18g of fresh material per litre of water)	leaves	severe abdominal pains as a result of intestinal worms regulation of menstrual cycle and alleviation of menstrual difficulties in young women	1 glass or more, depending on the condition of the patient 1 glass sweetened with honey as need arises
<i>Warburgia ugandensis</i> + <i>Melia volkensii</i> var. <i>keniae</i> (10g of each powder in 1 litre of water)	bark and root	rheumatoid arthritis	1 glass sweetened with honey twice a day for 4 days only

ders and fresh material using published guidelines (see table).

Results of patient treatments were also captured through a feedback mechanism, which has enabled protocols and dosages to be refined through practical experience. Among the most common ailments treated have been all forms of arthritis (rheumatoid arthritis is especially common); bronchial diseases; highland malaria; peptic ulcers; sexually transmitted diseases, including gonorrhea and syphilis as well as HIV/AIDS; tuberculosis; and typhoid.

PARTNERSHIPS

In Kenya, several organizations are involved in the practice and regulation of herbal medicine, including the National Association of Herbalists, the Ministry of Culture, the Ministry of Trade and Industry, local authorities and public health officers. However, although no formal collaboration has been formed with the international scientific community, the clinic has been visited by a team from St. Lawrence University, Germany, through an arrangement with the Institute for African Studies, University of Nairobi, and another team from the University of Cape Town, South Africa. The major interest of these groups is in using the indigenous knowledge of Kenyan herbalists in developing new drugs to tackle such diseases as HIV/AIDS and influenza.

REPLICABILITY

Herbal clinics are found in many regions of the world; however, very few have a research component. As a herbal clinic run by a university department, the aim was to uphold the highest standards possible by maintaining hygienic conditions while the remedies were being prepared and dispensed and by adhering to defined dosages. In this way, the success of the clinic should be emulated by all herbal clinics in Kenya. Already many practicing herbalists have visited the clinic to consult it on the preparation of tinctures, better storage and preservation conditions for medicines, and how to monitor the efficacy of herbal medicines.

Initially, modern medical practitioners, members of Kenya's pharmaceutical societies and the Ministry of Health were generally skeptical about the efficacy of herbal medicine. By establishing the herbal clinic, the university has sent a clear message that the practice of traditional herbal medicine should not be left in the care of the old and illiterate — its image among Kenya's educated urban classes — but rather should be given the scientific backing to modernize it. The success of the clinic has also demonstrated that herbal medicines are not toxic when consumed, as is often related by the authorities.

In summary, the experience of the herbal clinic can be used in other developing countries as a model for providing more affordable health care based on herbal medicines.

POLICY IMPLICATIONS

Like all medical services provided in Kenya, herbal clinics and practices are regulated by an act of parliament. Under the law, properly certified herbal practitioners are protected from legal redress arising, for example, from the death of a patient who, relatives allege, has been given an overdose of medicine. Fortunately, this particular situation has yet to arise. However, the new constitution, now being drafted, recognizes herbal practitioners and reads: "Every person has a right to health, which includes the right to health care services, whether allopathic or complementary and alternative medicine, including reproductive health care."

LESSONS LEARNED

Initially, traditional healers based in rural Kenya campaigned against the university's involvement in herbal medicine. They felt that knowledge of medicinal herbs was always passed from parent to child and should be limited only to those born into the families of traditional herbal practitioners. To some extent, this mindset has been overcome through a series of meetings between university staff and traditional healers that have resulted in both parties developing an appreciation and respect for the work and knowledge of the other. University staff are also involved in an ongoing public information exercise concerning herbal medicine, addressing church groups and

public meetings. Such outreach programmes and the manner in which patients are handled mean that the clinic is now widely appreciated.

Among the most pressing problems faced by the project is the lack of equipment such as a freeze drier to make powders, machines to make tablets and capsules for standardizing doses, and a facility to maintain the brine shrimp used for toxicity tests.

IMPACT

The herbal medicines are inexpensive to produce and distribute, which has helped the clinic to increase its public profile. In addition, the attention given to the patients at the clinic is highly commended by the patients themselves, who report that the herbal medicines have been effective and are free of side effects. Records detailing the growing number of patients visiting the clinic — now averaging between 8 and 11 each week — indicate that the scheme has been a success.

FUTURE PLANS

The clinic's current operations are sustainable but plans to begin packaging quality-controlled herbal medicines will require some financial assistance. Such packaged medicines will require standardization through experimentation, perhaps in collaboration with other laboratories both within Kenya and else-

where. Indeed, the aim is to share the experiences of the clinic with international colleagues through attending workshops and conferences and during short-term visits to other institutions. Likewise, the clinic is attempting to establish strong contacts with the government, nongovernmental organizations, the pharmaceutical industry and health research institutes within Kenya to enhance the development of pharmaceutical products from the nation's rich floral diversity. In particular, future research will be intensified to develop herbal products for the treatment of some of the more challenging diseases such as HIV/AIDS.

Nature conservation regulations restrict the collection of plant material from certain areas, such as forests, unless the collector has been issued a permit. To remove this need and reduce any impact on wild populations of medicinal plants through over-harvesting, a botanical garden is being created in which most of the plants required by the clinic will be grown.

In the long term, there are plans to develop a "herbal hospital" rather than a herbal clinic, but this requires that a new, larger building be constructed. Also, more staff will be deployed so that the clinic can reach as many patients as possible throughout Kenya.

PUBLICATIONS

A book, "Safe Usage of Herbal Medicines", is under preparation.

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