**Fighting Malaria With African Plant Extracts**

Apr. 9, 2011 — Plants used in traditional African medicine may have an effect on the malaria parasite as well as the mosquitoes that spread the disease. A Norwegian pilot project is now indexing and testing these plants.

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Malaria is caused by the parasite *Plasmodium falciparum*, which is transmitted to its human hosts via various mosquito species of the genus *Anopheles*. The disease can cause fever high enough to be fatal. In tropical and subtropical regions such as sub-Saharan Africa, malaria remains a major cause of illness and death as well as a contributing factor to poverty.

Each year, 300 million people contract malaria. And each year, the disease kills one million of them -- mostly children under five years of age. Pregnant women are also highly vulnerable.

**New solutions to thwart resistance**

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The pilot project "Malaria control using plant extracts" has been granted funding under the Research Council's National Programme for Research in Functional Genomics in Norway (FUGE).

**Effects and side effects**

"There are several plants that have been shown to kill the malaria parasite," explains Researcher Torunn Stangeland of UMB. "Other plants are toxic to malaria-transmitting mosquitoes and could perhaps be utilised as insecticides." She and her colleague Hans Overgaard head the project.

The plants in question have never been scientifically tested for efficacy. Another unknown factor is whether they cause detrimental side effects for humans.

**Early results promising**

The Norwegian researchers have begun by testing the effectiveness of selected plant extracts against the parasite and mosquitoes. Next they will check for potential toxins to make sure the plants are safe to use. So far the trials look promising, but the results will not be finalised for some time.

The researchers will also investigate if there are synergistic effects of different compounds in the plant extracts. It may be more difficult for the malaria parasite and mosquitoes to develop resistance to the medicines or insecticides if the entire plant is used, because of the many different chemical components that are present in varying concentrations.

"The fact that both the sweet wormwood plant (*Artemisia annua*) and the bark of the cinchona tree have been used for centuries against malaria -- and the parasite has yet to become resistant -- indicates some support for this theory," says Dr Stangeland.

**Medicines owned and produced by Africa?**

"If we can find plants that prove effective against malaria," says Dr Stangeland, "we hope that African authorities and countries will register the tested medicines and produce them themselves."

An African herbal medicine could be a vital supplement to costly, imported medicines -- and could even replace some of them. Producing medicines in Africa would boost local industries and the economies of countries involved.

**Prelude to a larger study**

Parallel to experimenting with previously untested plants, the UMB researchers will also produce an overview of plants from nearby areas in Africa that are already mentioned in the scientific literature and may be effective against malaria. An added benefit of the pilot project is that it strengthens cooperation with African universities and scientists working on malaria.

"And this is only the beginning," asserts Dr Stangeland. "We hope the pilot project will lead to a larger, more comprehensive study with clinical tests of the plant-based medicines and insecticides as a main element."