



MOSQUITO REPELLENT FROM CATNIP: A STRATEGY FOR THE FIGHT AGAINST MALARIA IN AFRICA

Malaria continues to devastate sub-Saharan Africa. Not only is the disease most prevalent in poor rural populations, it is a principal cause of poverty. The average per capita GDP is fivefold lower for countries afflicted by malaria. It is transmitted by mosquito bites and the most deadly form is caused by the *Plasmodium falciparum* protozoan parasite. Health and economic development depend on measures taken to avoid mosquito bites. Several strategies are actively promoted by the World Health Organization (WHO) to fight the disease: ITN (insecticide-treated bed nets), hygiene, generalized spraying, and indoor residual spraying. Although topical repellents are common throughout the Western Hemisphere to reduce the nuisance of mosquito bites, they are infrequent in Africa where mosquito bites kill. They are not actively promoted by the WHO but are encouraged when they can be shown to be effective.

On April 25th on the occasion of the International Fight Against Malaria Day, ACECI joined the manifestations with its partners, as well as governmental and international actors.

Making Progress, Making an impact

ACECI's general director addressed a triple message to the media and to the public during the ceremonies of April 25th 2011, organized by ALUMA along with its partners, notably PNILP, WHO and the Global Fund to Fight Malaria:

- Learning how to use mosquito repellents to avoid mosquito bites, vectors of malaria
- It is not a utopist dream: mosquito repellents will be available because they will be produced by local associations and cooperatives, from growing catnip along with other well known plants
- People will be able to fight malaria efficiently and reduce the mortality rate of the disease while gaining access to employment, increasing revenues and fighting poverty. A 10% reduction of malaria can lead to a 0.3% GNP increase.

Acceptability of mosquito repellents made from Catnip: ABEM-ACECI partnership

In partnership with ABEM (Burundi Medical Students' Association), the acceptability of mosquito repellents derived from catnip was tested by families in the endemic regions: the province of Cibitoke and in the ALUMA center of Kamenge, in the province of Bujumbura-Mairie. M. Claude Bizimana, from the Faculty of Medicine of the University of Burundi reported that « 91.7% of the people that had applied the catnip based mosquito repellent were not bitten by mosquitoes, 6.7% found that there was a reduction of the number of mosquito bites and 1 person (1.6%) declared that the mosquitoes were biting notwithstanding the application of the repellent lotion.»

Note: We believe it is also interesting to point out that a woman found the lotion to be efficient against mosquito bites during the day, because, she said, *'I am working the land in a shady field on the banks of the Rusizi where mosquitoes don't wait until nightfall to bite, so I need to protect myself with this lotion'.*

In 2011, the population of Burundi knows they can be efficiently protected against mosquito bites. This creates expectations, and the ethical imperative to give them access to the techniques and resources allowing to them to produce and use these products.



Official inauguration of the Catnip project in Burundi by the President of the Republic

Having himself tested the efficiency of catnip based mosquito repellent, his Excellency President Nkurunziza Pierre officially launched the Catnip Project on April 29th 2011 at the Butaganzwa stand in Ngozi at the ceremony marking the 4th World Malaria Day. His visit marked the demonstrations on the occasion of the International Fight Against Malaria Day. The use of mosquito repellents is added to the existing efforts led by different actors in the prevention of Malaria. The President witnessed the demonstration of the extraction process of essential oils derived from plants such as eucalyptus and citronella.



Training session with collaborators on the extraction of essential oils and identification of energy sources from biomass in potential pilot zones.

In order to familiarize ACECI's partners with the mosquito repellent's cycle of production,

Francis Mainguy (AlikSir) gave an intense 2 day training session on the catnip's essential oil extraction process. This training session also pertained to the maintenance of the experimental extraction unit as well as to the plant matter for distillation of essential oils.

Furthermore, field trips revealed the great potential for deriving energy from local biomass such as coffee hulls.



The pathforward includes:

(1) Designing the pilot and commercial facilities – steam generation, water treatment, storage, extraction vessel

geometry and decantation/separation configuration; (2) Identifying suitable energy sources – biomass (catmint plant matter, coffee hull, sugar cane, maize, rice and tea residues – to generate the steam for extraction: this will have a major impact on the overall economics); (3) Collaborate with agronomists to select plant strains and field parameters to maximize nepetalactone yield; (4) Work with health officials to implement strategies to target the high risk populations; (5) Develop multiple products – lotions, soaps, sprays, impregnations and, (6) Continue to work with the local (and international) media.

COMING EVENTS:

- Dinner-Conference at the 'Salle John Molson', June 21st 2011 in Montreal
- 2nd International Conference in Bujumbura, October 17th-18th
- Exposition on the cycle of production of catnip organized by ABEM and its partners at the Bujumbura French Institute, from October 1st to 31st 2011.

FOLLOW OUR INTERNS IN THE FIELD AND AT THE LOCAL OFFICE

CATNIP PROJECT

- Mireille Kayeye
- Delia Fagundes
- Mélanie Lacroix

MDG/PRL CAMPAIGN

- Raphaël Gagné – Colombo in Burkina Faso
- Tiéoulé Traoré

Collaboration with the Department of Chemical Engineering of



The Board of Directors thanks all its volunteers and everyone who supports ACECI.

DON'T MISS!

Next event of the '5 à 7 de la Coopération Ici et Ailleurs' - **October 7th 2011** - Theme: Mosquito Repellent Production Project for the fight Against Malaria in Africa



To support the projects of the ACECI: www.aceci.org, and www.antimalariaomd.org or: 418-524-7648

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