

Subject: RE: Media Review on Gene Drive - Ethics Advisory Committee

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Dear all,

Please find below the following article shared by Dominic (Thank you!)

<http://www.bbc.com/news/health-40495958>

Extreme gardening to help tackle malaria

By Michelle Roberts Health editor, BBC News online

Image copyright Malaria Journal Image caption The Prosopis juliflora shrub occupies millions of hectares of Africa

Gardening could be a powerful weapon against malaria, culling mosquito populations by cutting off their food supply, say researchers.

A team tested their idea in nine villages in the arid Bandiagara district of Mali, West Africa.

Removing flowers from a common shrub appeared to kill off lots of the older, adult, female, biting insects that transmit malaria.

Without enough nectar the "granny" mosquitoes starve, experts believe.

Killing granny

Getting rid of the mature females can stop the cycle of malaria transmission.

These Anopheles mosquitoes carry the malaria parasite in their salivary glands and pass it on to people when they bite and draw blood.

The infected person can then infect other younger, biting, female mosquitoes - which are looking for a rich

blood meal as they become fertile and make eggs - because their blood now contains the parasite.

It takes about 10 days for a newly infected young female mosquito to become contagious to humans. That may not sound long, but for an insect, it is.

By the time she can transmit malaria, she's pretty old.

Although she will feed on blood, she also relies on flower nectar for energy to stay alive.

Shrubbery

In the Bandiagara district of Mali, there is one invasive plant that researchers believe is a feeding ground for malaria-transmitting mosquitoes.

The flowering *Prosopis juliflora* shrub is a bit of a horticultural thug and now occupies millions of hectares of the African continent.

Native to Central and South America, it was introduced into Africa in the late 1970s in an attempt to reverse deforestation and "green up" the desert.

Experts in Mali, along with researchers from the Hebrew University of Hadassah Medical School, Israel, and the University of Miami in the US, set up a horticultural experiment to see if removing the flowers from this plant might help kill off local mosquitoes.

They picked nine villages - six with lots of the flowering shrub and three without.

In three of the six villages, they hacked down the flowers.

They set light traps around all the villages to catch mosquitoes so they could see if the "gardening" had helped cull the insects.

Villages where they removed the flowers saw mosquito numbers collected in the traps fall - the total number of mosquitoes across these villages decreased by nearly 60% after removal of the flowers.

Importantly, the number of old female mosquitoes dropped to similar levels recorded in the three villages without any of the shrubs.

They don't have direct proof, but the researchers believe the mosquitoes died of starvation.

The reported their findings in the journal [Malaria Research](#).

Prof Jo Lines is a malaria control expert from the London School of Hygiene and Tropical Medicine.

He says the novel approach holds amazing potential, alongside other malaria prevention strategies.

"It appears to show that by changing the landscape, not using insecticides or drugs, we can make a difference."

But he said it might not work so well in lush tropical regions where nectar-rich plants are in abundance.

From: Hapsa Dia

Sent: 07 July 2017 14:38

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Subject: Media Review on Gene Drive - Ethics Advisory Committee



A Vector Control Research Alliance

**Ethics Advisory Committee
Media Review on Gene Drive**

Dear all, please find below a selection of the best and most significant articles on issues related to gene drive, malaria and other relevant topics to Target Malaria. It covers the period of mid-June/July 2017.

[CRISPeR Frenzy – News and views from the frontier of genome editing: CRISPR mosquitoes come to town](#)

The Italian city of Terni is now a spot on the map of cutting-edge research due to its new genetic-ecology lab, which is getting involved in the Target Malaria project funded by the Bill & Melinda Gates Foundation. For a couple of days, citizens are allowed to visit the facility which is part of the Genomics, Genetics and Biology Innovation Pole.

[Everything you always wanted to know about gene drives \[Interview Andrea Crisanti\]](#)

[...] there is a new hope for defeating malaria, coming directly from the most advanced CRISPR frontier. Thus a gene designed to damage a harmful species can propagate within a few generations with a domino effect, until the population collapses. One of the founders of this futuristic strategy is an Italian molecular parasitologist: Andrea Crisanti, of the London Imperial College.

[Scientists kill malaria-carrying mosquitoes with genetically engineered fungi](#)

A genetically engineered fungus, designed to produce toxins from spiders and scorpions, could effectively kill malaria-carrying mosquitoes, according to a new study released Tuesday. The fungus does not pose a risk to humans and early test results showed it's also safe for honey bees and other insects, according to the study from the University of Maryland (UMD) and colleagues from Burkina Faso, China and Australia.

[The ethics of CRISPR](#)

On the eve of publishing her new book, Jennifer Doudna, a pioneer in the field of CRISPR-Cas9 biology and genome engineering, spoke with Fast Company about the potential for this new technology to be used for good or evil. “The worst thing that could happen would be for [CRISPR] technology to be speeding ahead in laboratories.”

[CRISPR-Cas9 : un scalpel génomique à double tranchant \[French article\]](#)

Une percée biotechnologique de première grandeur occupe la une des journaux. Il s'agit de la méthode CRISPR-Cas9, ce « ciseau moléculaire » qui, en permettant de modifier à volonté et à l'endroit désiré le programme génétique de n'importe quel organisme, constitue un véritable outil d'« édition » génomique.

[Selfish gene acts as both poison and antidote to eliminate competition](#)

Researchers from the Stowers Institute for Medical Research in collaboration with Fred Hutchinson Cancer Research Center researchers have identified an unprecedented genetic survival strategy that would be right at home in an Agatha Christie murder mystery novel.

['Wtf'? A gene that poisons its own host](#)

Discovery of genes that divide two species in a simple fungus sheds light on complex evolutionary principles. Scientists have a tendency to anthropomorphize their work, and not just the animals they study. Even molecules or scientific principles may be ascribed human attributes or logic. Case in point: a family of genes dubbed “wtf” described in a study published Tuesday in the journal eLife.

[Scientists fight to make invasive pest control palatable to the public](#)

Social scientist Edy MacDonald wants researchers to get more emotional about invasive pest control. She believes one of the biggest hurdles facing scientists in this area is their own inability to explain their research to the public — and more specifically, their failure to acknowledge that when you're talking about killing animals, people get upset.

[Avoiding CRISPR-Mediated Gene-Drive–Evolved Resistance in Mosquitoes](#)

The discovery and development of improved gene-editing techniques in recent years have led to the revamping of a technique that promotes the inheritance of a particular gene or set of genes to increase the prevalence within a population [...] researchers at UC Berkeley and UC Riverside have demonstrated a way to edit the genome of disease-carrying mosquitoes that brings us closer to suppressing them on a continental scale.

[Malaria: Nigeria, other sub-Saharan countries receive low research funding](#)

A recent study showed that most of the countries with the highest prevalence of malaria-related cases and death received little funding from major public and philanthropic health institutions to research on combating the disease. The study by the University of Southampton on global funding trends for malaria research in sub-Saharan Africa was published on Thursday in The Lancet Global Health journal.

[Mali Study Finds Simple Malaria Intervention Boosts Students' Performance](#)

New research suggests that the ability of children in Africa to perform well in school could be dramatically improved through the provision of basic malaria education and treatment. Most malaria prevention programs focus on children under 5. Infections are less fatal among older children, but many harbor malaria parasites without displaying any symptoms of the disease.

[East Africa: Is deforestation hampering the fight against malaria?](#)

The fight against malaria in East Africa is stalling. A number of financial, environmental and human-caused factors contribute to rising death rates from the disease in parts of the region, which remains one of the worst regions in the world. One of these factors, which is regularly attributed to the spread of malaria, is deforestation.

[Malaria returns to India's capital with 113 new cases of lethal disease reported in Delhi after five-year lull](#)

As Delhiites feverishly prepare for the season of dengue and chikungunya, an old threat has returned to the city in a new garb. The National Institute of Malaria Research (NIMR) has found two species of the carrier anopheles mosquito – stephensi (urban vector) and culicifacies (rural vector) circulating this year, after nearly half a decade.