GENETICALLY ALTERING MALARIA MOSQUITOES

SUGGESTED INTRO:
WITH THE GROWING CONCERN FOR WEST NILE DISEASE COMES NEW HOPE FOR TAKING THE BITE OUT OF MOSQUITO BITES. RESEARCHERS ARE WORKING ON GENETICALLY MODIFYING THE INSECTS TO INHIBIT THE PASSING OF DISEASE. THEIR MAIN TARGET RIGHT NOW IS MALARIA.

HERE'S A REPORT:

[VIDEO]
Open with shot of mosquitoes behind glass container. Cut to ECU of mosquitoes. Cut to lab assistant at work.
Cut to shot of blue vial under microscope holding mosquitoes. Cut to female research assistant viewing the sample. Cut to CU of scope monitor screen displaying the two mosquito samples.
Cut to male research assistant at the “egg-injection” area.

[ON-CAMERA INTERVIEW]
SOT & SUGGESTED SUPER:
MARCELO JACOBS-LORENA,
PROFESSOR OF GENETICS, CASE WESTERN RESERVE UNIVERSITY

[INTERVIEW] “We have drugs and insecticides. Drugs that kill the parasite, but as with bacteria that become resistant to antibiotics, the malaria parasite is becoming resistant to the drugs that are being used and in the same vein, the mosquitoes are becoming resistant to the insecticides that are used to control -more-
GENETICALLY ALTERING MALARIA MOSQUITOES - 2

[VIDEO]
cut-away shot of scope monitor showing two samples of genetically modified mosquitoes. Cut to research assistant at scope. Cut back to interview.
Cut to CU of hands and insertion device for new genetic material. Cut to CU of mosquito samples on monitor. Cut to ECU of Jacobs-Lorena’s hand in mosquito cage. Cut to wide shot of MJL pulling hand out of cage. Cut to CU of genetic material injector under microscope. Cut to shots of research assistant at injector station. Cut to CU of monitor showing genetic material injected into mosquito egg. Cut to shots of MJL and assistant at scope viewing station. CU of blue vial. ECU of blue vial. Female researcher at microscope. Cut to CU of Mosquito subjects waiting in dish. Cut to Med reverse shot of research assistant at egg-injection station. Cut to black.

[AUDIO]
[INTERVIEW - CONT.] their numbers. This is the first time a gene has been inserted into the genome of the mosquito. Integrated into the mosquito genome and inherited (00:38)

[VOICEOVER] – CLOSE

JACOBS-LORENA HAS SYNTHESIZED A GENE THAT PRODUCES A PROTEIN IN THE MOSQUITO’S GUT, WHICH DENIES THE MALARIA PARASITE ACCESS TO ITS SALIVARY GLANDS, PREVENTING TRANSMISSION AND BREAKING THE DISEASE CYCLE.

RESEARCHERS INJECT THE GENE INTO MOSQUITO EGGS, REDUCING THE SPREAD OF MALARIA BY FUTURE GENERATIONS OF THE INSECT. JACOBS-LORENA SAYS IT WILL TAKE A COMBINATION OF NEW GENES AND DRUGS, AND EFFECTIVE DISTRIBUTION OF MODIFIED MOSQUITOES IN THE FIELD, TO HAVE A MAJOR IMPACT ON THE DISEASE. NOW THAT RESEARCHERS HAVE THE PARASITE AND MOSQUITO GENOMES TO GUIDE THEM IN DESIGNING BARRIERS FOR TRANSMISSION, HOPES FOR REDUCING CASES OF MALARIA WORLDWIDE LOOK A LOT BRIGHTER. THIS IS DAVE NAROSNY REPORTING FROM CASE WESTERN RESERVE UNIVERSITY, CLEVELAND.

-CWRU-

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