

Decoded genome of New World screwworm could help prevent billions of dollars in livestock losses

The New World screwworm's Latin name means "man-eater." These shiny blue flies with pumpkin-orange eyes lay up to 400 eggs in open cuts or sores of cattle, goats, deer and other mammals. Emerging larvae begin gnawing away on their hosts, feeding on living and dead tissue and creating ghastly wounds.

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Joshua Benoit, an associate professor in UC's College of Arts and Sciences, contributed to genetic studies of New World screwworms that feed on livestock and thrips, tiny insects that can transmit viruses to tomatoes and other plants.

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Benoit and his co-authors sequenced the genome of screwworms and identified ways of slashing populations by targeting particular genes that determine sex and control growth and development or even particular behaviors that help the flies find a suitable animal host.

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The New World screwworm is an agricultural menace that causes billions of dollars in livestock losses each year in South America, where it is common.

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One possible way to cut costs would be to raise only male screwworms that are intended for release so the lab wouldn't incur the huge costs of feeding female screwworms. UC's genetic study could help scientists cull females before they hatch.

"So you're left with surviving males. Then you sterilize the males and that would save a lot of money because you'd only have to raise the males for release," [Benoit] said.

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