Gene drive CRISPR insects may be only viable tool to fight back against cattle fly that lays eggs on living cows, causing ‘unbelievably agonizing’ sores

Uruguay is developing a CRISPR gene drive to eradicate the New World screwworm, a parasitic fly that kills cattle in a painful, grisly fashion. Releasing it into the wild would have risks, but if it works, it could help rid South America of this horrific agricultural pest.

The screwworm fly lays its eggs on living creatures — often livestock — and once they hatch, the larvae eat into the animal’s flesh for about a week, before emerging from the tunnel they created and flying away.

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“We know that it’s horrendously painful, because people get affected by this, and the standard of treatment is you give them morphine immediately so that surgeons can cut the things out — because it’s just that painful; it’s unbelievably agonizing,” Kevin Esvelt, a biologist at the MIT Media Lab, told the 80,000 Hours podcast in 2023.

Esvelt is now working with officials in Uruguay on a project to create a gene drive in non-sterile male screwworns. The drive would be paired with a gene that renders only female offspring sterile. The male offspring, meanwhile, would be able to mate, spreading the gene to more generations, cutting the number of fertile females until eventually the population collapses.

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