

## Federal Funding to Study the Sex Life of a Screwworm? Really?

Why funny-sounding science is no joke . . .

Source: Association of American Universities

How could understanding the sex life of the screwworm be of any value?

The screwworm is a parasite that has plagued livestock, and occasionally humans, in the southern United States, Mexico, and Central America. Screwworms feed on living tissue, and attempts to remove them cause them to burrow deeper into the flesh, often killing the host.



In 1955, a USDA-funded study done by E.F. Knipling showed that while screwworm males mate many times, females mate only once before laying eggs. He postulated that if sterile male screwworms were released into the wild, they would disrupt the reproductive cycle by mating with many females, causing them to lay unfertilized eggs. This idea led to the Sterile Insect Release Technique, which was developed and successfully tested through this grant.

This technique gained widespread use in the southern United States in 1957, and the United States was declared screwworm-free in 1966. Programs then began in Mexico and the countries of Central America.

The USDA grant to Knipling for his initial study was \$250,000, but the outcomes have saved the cattle industry \$20 billion in the United States and \$7 billion in Mexico. This is an 80,000 to one return on investment for American taxpayers. And that only takes into account the savings for producers.

For consumers, the benefit of this study is approximately a 5 percent reduction in the price of beef in the supermarket. Knipling won the 1992 World Food Prize because his research had such a dramatic positive impact on the world food supply.

The Sterile Insect Release Technique has since been adapted to other insects and is currently being used in Africa against the tsetse fly, which spreads diseases that kill over 250,000 people a year.

Ironically, former Senator William Proxmire gave Knipling's study his Golden Fleece award, an award meant to symbolize wasteful, frivolous spending. Senator Proxmire ended up apologizing to Knipling after seeing just how useful this funny-sounding research really was.

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*The Task Force on American Innovation understands the need to put America's fiscal balance sheet back on a sustainable footing. Federal funding for scientific research, however, pays returns to taxpayers in excess of its cost. Research pays back in hard terms like tax revenue. Foundational research unlocks new knowledge and paves the way for new firms, products, and payroll. Research also advances national priorities like better health, national security, and energy self-reliance. Smart investment in research is an engine of jobs and growth – it must be part of America's strategy for the future.*