USDA enlists genetically modified flies to stop New World Screwworms

By Don Jenkins

New World Screwworms have been detected in a Mexican state bordering Texas. The USDA plans to ramp-up production of sterile male flies to suppress wild populations. (Photo courtesy of USDA)

The USDA plans to step up its war on cattle-infesting New World Screwworms by doubling its capacity to breed sterilized males to mate with wild females and thwart reproduction.

The USDA already rears and sterilizes millions of screwworm flies to release over infested areas in Mexico. Half, however, are females, which don't contribute to suppressing wild populations.

Since it's impossible to separate male and female screwworm flies, half the sterile flies released — 1,500 to 3,000 per nautical mile — are useless.

To produce an all-male aerial force, the USDA proposes to genetically modify the lab-bred flies. The genetic modification would be lethal to females in the embryonic stage.

Only male flies would then hatch. The unhatched eggs could be removed, clearing up space for more eggs. The USDA anticipates producing 17.4 billion "NovoFly" males over three years.

"It would be a pretty significant and positive step," said Jason Sawyer, science director for the East Foundation, which owns six ranches in south Texas.

Female screwworm flies mate only once. By releasing more sterile male flies, the odds will improve that wild females mate with a sterile male, he said.

"The sterile males are the key to stopping the New World Screwworm," he said. "The real limiting factor is the number of male sterile flies that can be released."

The USDA's Agricultural Research Service developed NovoFly. The Environmental Protection Agency must approve its use. The EPA classifies NovoFly as a pesticide.

Screwworm maggots burrow into livestock wounds. U.S. cattlemen anticipate heavy losses if the pest crosses the border.

Although New World Screwworms are suited for warmer climates, they can survive as far north as the 45th Parallel, i.e. Salem, according to USDA.

Thanks to the release of male flies, sterilized by radiation, screwworms were eradicated in the U.S. by 1960.

Screwworms were then driven out of Mexico and Central America and by the 1990s were pushed beyond the rainforest that separates South and Central America.

Somehow, however, screwworms recrossed the rainforest and appeared in Panama in 2023. They have been moving north since. Screwworms have been found as far north as Nuevo Leon, a Mexican state bordering Texas.

Screwworms are only 80 miles away now, Sawyer said. "We'd be among the first exposed," he said.

The USDA broke ground this month on a fly-rearing facility in Edinburg, Texas. The facility is expected to be producing flies by November 2027. USDA has invested in expanding a rearing facility in Mexico. The U.S. and Panama jointly run a rearing facility in Panama.