

Why 3 countries planted GMO Bt cotton and got 'wildly different results'

Three countries used the same tactic to fight the same pest on the same crop, but they had wildly different results. Why? A new article published in June in the [Journal of Economic Entomology](#) explores this intriguing tale of three countries and the broader lesson it holds for pest management.

Starring in this trilogy is the pink bollworm (*Pectinophora gossypiella*), a caterpillar pest that can devastate cotton. To fight this invasive insect, millions of growers worldwide have reduced their need for chemical sprays by planting transgenic cotton, called Bt cotton, which was genetically engineered to produce caterpillar-killing proteins from the bacterium *Bacillus thuringiensis* (Bt), says the article's lead author Bruce Tabashnik, Ph.D., Regents' professor and head of the University of Arizona (UA) Department of Entomology.

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At first, Bt cotton worked well against pink bollworm in all three countries, but this adaptable pest harbors mutations that confer resistance to Bt toxins. These mutations were rare before Bt cotton was commercialized. However, when two resistant caterpillars develop into moths and mate, their offspring are also resistant. If unchecked, the proportion of resistant insects increases every generation. Conversely, if a resistant moth mates with a normal, toxin-susceptible moth, the progeny remain susceptible.

Read full, original article: [Pink Bollworm Versus Bt Cotton: Three Countries, Three Results](#)