Are there better alternatives than genetic engineering to develop drought resistant crops?

In the late-1990s, scientists Russell Rodriguez and Regina Redman were conducting research in Yellowstone National Park when they made a discovery. They wondered why a particular type of grass, called Panic grass, was able to grow in the geothermal areas of the park while other plants couldn't. They found it was all about fungus.

Specifically, they found the grass carried a endophyte—an organism that lives symbiotically within a plant—which made it more heat-resistant. The grass could grow in ground temperatures of up to 65 degrees Celsius (149 degrees Fahrenheit) but would die off at about 38 degrees Celsius if the fungus was removed.

Since then, Rodriguez and Redman have worked to see whether the endophytes might have uses in other plants, particularly corn and rice, and today they have a product called BioEnsure. Their company, Adaptive Symbiotic Technologies, is now in the final stages of the regulatory approval process, and the technology is seen as a promising alternative to genetic modification. Indeed, several big GMO companies, including Syngenta, are themselves testing AST's products.

Under lab conditions, the corn seeds used 32 percent less water and produced 50 percent more mass compared to conventional corn, Gray says. The company charges based on the yield increases it promises. So, if a farmer can expect a minimum 3 percent increase—4.5 extra bushels on an acre that would normally produce 150 bushels—that's the premium they would pay. Adaptive actually promises to double farmers' investments.

Companies like Monsanto have developed drought-tolerant varieties of crops using genetic modification methods. But Gray claims they are not as effective as Adaptive's fungus-laced seeds.

Read full, original article: A Fungus Could Create Corn Crops Strong Enough That We Won't Need GMOs