

US Government Backs Dangerous New Genetic Manipulation of Plants and Animals

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The Trump Administration is backing a new technology for the genetic manipulation of plants and even animals with no intent to supervise or regulate against possible dangers. If left unchecked, it could open a Pandora's Box of dangers to human health for generations. Yet very little debate is taking place on this dramatic development. Here are some things to consider.

The new development is being called "genome editing," or simply gene editing. It's being promoted as a "new, improved" method of altering genetic expression of plants and even animals and humans. In 2015 London TED conference geneticist Jennifer Doudna presented what is known as CRISPR-Cas9. This is an acronym for "Clustered regularly-interspaced short palindromic repeats." It's a revolutionary and highly controversial gene-editing platform using a bacterially-derived protein, Cas9. It supposedly allows genetic engineers to target and break the DNA double strand at a precise location within a given genome [for the first time](#).

Genetic Editing Proliferation

In effect CRISPR is a highly precise way to alter genes, genes in plants, in animals and even humans. Quite different from the older Monsanto "gene cannon" or other techniques of changing a plant's genetics by bombarding it with a foreign substance to (hopefully) make the soybean or GMO corn resistant to Monsanto's Roundup weed killer, a highly sophisticated and highly costly procedure that is patentable and that is so complex as to be limited to a handful of company actors around the world, gene editing is relatively cheap, kits available for around \$500. And relatively easy to use. As one analyst described it,

CRISPR is "a very precise not to mention extraordinarily cheap and easy to use tool which can locate, cut, deactivate, activate or rewrite any sequence of DNA [that they want in a living cell](#)."

Note the words, "cheap and easy to use...can locate, cut, deactivate or rewrite any sequence of DNA that they want..."

And the cost of buying CRISPR and related genome editing materials is alarmingly cheap ranging from several hundred dollars to several thousand. The equipment is available online from scientific equipment makers and on one site an ad reads,

"CRISPR-Cas9 editing made easy:...Our easy-to-use, optimized, and validated

solutions span the entire cell engineering workflow, making genome editing accessible to anyone at any level. “ As one critic put it, “anyone can buy some CAS9 for a few hundred bucks, any halfway decent lab can use it to alter the DNA of anything...”

National Security Issue

DARPA, the Pentagon R&D arm is spending millions on developing gene editing. In 2016 James Clapper, Obama Administration Director of National Intelligence added gene editing to the list of threats posed by “weapons of mass destruction and proliferation.” In July, 2017 the US Defense Advanced Research Projects Agency awarded \$65 million in four-year contracts to seven teams of scientists to study gene-editing technologies. The commitment officially made DARPA the world’s largest government funder [of “gene drive” research](#).

Gene Drive is the next major development in the new gene editing world. The idea of gene drive is to force a genetic modification to spread through an entire population in just a few generations. One of the leading gene drive researchers, Omar Akbari at University of California Riverside gets DARPA gene drive research money. He works with what is supposedly the world’s deadliest creature: the *Aedes aegypti* mosquito. His work involves gene editing the deadly mosquito, re-engineering them with “self-destruct switches.”

This sounds noble, a boon to mankind saving maybe a million lives annually. Like selling earlier GMO “golden rice” as a solution to infant blindness, gene editing however is not as perfect as it is made out to be. The scientist who first suggested developing gene drives in gene editing, Harvard biologist Kevin Esvelt has published a paper warning that development of gene editing in conjunction with turbocharged gene drive technologies have alarming potential to go awry. He notes how often CRISPR messes up and the likelihood of protective mutations arising, making even benign gene drives ruthlessly aggressive. He stresses,

“Just a few engineered organisms could irrevocably alter an ecosystem.”

His computer gene drive simulations calculate that a resulting edited gene “can spread to 99 percent of a population in as few as 10 generations, and persist [for more than 200 generations](#).”

It takes little imagination to conceive a scenario in which malevolent actors intent on wreaking destruction unleash destructive gene edited plants or animals, or even humans. Earlier GMO was so complex and costly it was limited to a very few actors who grabbed patents on their GMO seeds. Now with gene editing readily available and becoming widespread, Pandora’s Box is being opened wide.

USDA Gov Gives Green Light

Rather than approach such a potentially disruptive technology as gene editing with utmost caution and control, the US Government, and US Department of Agriculture Secretary Sonny Perdue, are opting for no regulation, a laissez faire permissiveness that treats the resulting gene edited plants as identical to conventional plants, therefore needing no special regulation. In a March 28 Press Release, Purdue stated,

“USDA does not regulate or have any plans to regulate plants that could otherwise have been developed through traditional breeding techniques...This includes a set of new techniques that are increasingly being used by plant breeders to produce new plant varieties that are indistinguishable from those developed through traditional breeding methods...[such as genome editing...](#)”

So we have at the same time the US intelligence community treating gene edited organisms and related technologies as potential weapons of mass destruction, while at the very same time the agencies of the US Government responsible for food safety, the USDA, EPA and FDA seem content to turn a blind eye to all. As critics have noted, “We might be able to wipe out entire species on a whim ...We might be able to do that — to any species — that we’ve decided we’d rather not deal with anymore ...” Even “undesirable” groups of human beings?

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