

## Richmond Review Article – The Quest for the Killer App

By Stephen C. Mullins

“Are you pro-GMOs or not, yes or no?”

I’ve been asked that before, especially now that I work for a food security organization, but my standard answer, “It depends”, is not pleasing to many people in the polarized debate over genetically modified organisms (GMOs). The problem is that the question is too broad. The benefits of GMOs cannot be decided in a simple yes or no answer.

To illustrate this, let’s look at another technology, apps for your phone or tablet. What if I asked you, “What’s the best app you can get?” Your answer is inevitably going to be a variation of “It depends on what you want to do.”

Let me tell you, that’s not what an app developer wants to hear. They are all trying to produce the most prized of all apps, the “Killer App”, so named in the industry because it is an app that is so desirable that nobody can do without it.

But in reality, finding the right app can be bewildering. No matter what you want – an instant messenger, a game, a scheduler, etc. – there are dozens, if not hundreds of choices. A few will be great, but the rest will range from adequate to terrible, and some will be downright malicious. So the quest for the killer app soon dissolves in complexity.

So it is with GMOs. One problem is that many people don’t know precisely what they are arguing about when it comes to GMOs. The official definition of a GMO from the United States Department of Agriculture is “an organism produced through genetic modification.”

To some, that sounds bad, until you consider that genetic modification simply means “the production of heritable improvements in plants or animals for specific uses, via either genetic engineering or other more traditional methods.”

So it is perfectly feasible to create GMOs using entirely organic and ancient methods, and in fact, people have been cross-breeding compatible plants and animals for centuries. The real divide here is the part about genetic engineering (GE), which is actually what the opponents of GMOs are concerned about.

Now we have a better question, it seems. “Are you pro-GE organisms (GEOs) or not, yes or no?”

But remember the problem of choosing apps? That was hard enough, but child’s play compared to the number of GEOs are out there. But when you start looking at the potential benefits they offer, your certainty about whether GE organisms are good or bad or not will probably face a stiff challenge.

Because products like the controversial Roundup-ready corn or rice that Monsanto produces are often mentioned in the news or at protests, they have become symbols of what many people think all GEOs are like. But many other GEOs have only been slightly modified or ‘tweaked’ to address very specific crop pests or blights, or to produce additional beneficial effects.

For example, there is a GE yeast that produces a long-chain omega-3 acid that is essential to human health that was previously only obtainable through increasingly scarce wild fish. Or there are cows in Africa that have been genetically modified to resist the parasite that causes African trypanosomiasis or sleeping sickness. Cows are the primary carriers of the disease, which can get transmitted to people if they are bitten by mosquitos that have fed on the cows. No disease in the cows means no disease in the

people. Considering that sleeping sickness used to kill over 30,000 people a year, it's hard to argue there's no benefit here.

All this may sound like I'm in favor of GEOs, but that's not accurate. Just like apps, I can see that some fill a real need, and that some others require extensive scrutiny to ensure they are not malicious.

For me, my main objection to GE organisms can be summed up with the expression "When all you have is a hammer, then every problem looks like a nail." Too often, there are agricultural problems that could be solved by organic or more sustainable means, or by simply changing the policies on how things are done or financed, than by tinkering with the genetic code of some plant or animal. But those other methods are usually not as profitable as the GE route.

Recent high profile studies by the UN, Oxfam and other food security organizations have shown that genetically engineered organisms work best when they play a supporting role, not when they have the entire food system designed around them. GEOs will never be the killer app we need to fix our food system and sooner we accept that, the sooner we can have real conversations about what they can realistically do to help feed the people of the world.

Steve Mullins is the communications manager for Richmond Food Security Society. We work to ensure that all people in the community have access to safe, nutritious, culturally appropriate foods that strengthen our environment and society. To contribute, check out [www.richmondfoodsecurity.org](http://www.richmondfoodsecurity.org) and find out how you can get involved.