

Transformative Agriculture: Medicine for Plants



By Hank Campbell — March 20, 2018



Not plants as medicine woo. Medicine for plants.

In response to a bizarre emissions scandal - they were caught rigging emissions software to show improved performance in America long after their technology had been able to legitimately do it - Volkswagen AG announced a "path" toward electric vehicles by 2030.

ExxonMobil is spending \$1 billion per year researching a path to renewable energy, and last year announced a breakthrough in a modified algae strain that could double its oil output. "Big Oil" across the board is engaged in similar efforts to create a path toward cleaner energy. Electric cars are a joke if the power for them comes from coal, after all.

What about agriculture? I had a chance to speak with scientists in Europe last week and all of them wondered when a similar transformation would occur in pesticides, with companies announcing a path to perhaps no toxicity at all. They felt like agriculture was far behind cars and energy companies but in truth, agriculture is way ahead. Activists are simply winning the public relations battle when it comes to agriculture.

Though it is portrayed as such, the issue is not toxicity any more. Copper sulfate, which drenches organic farms in chemical baths, is far more toxic than glyphosate, which environmental groups claim causes cancer. The reason they continue to succeed is what I haven't talked much about since 2012's "Science Left Behind." Framing - the art of showing only the part of the picture you want the public to see.

Framing was a big deal in the first decade of the century, mostly for political reasons. Desperate for a campaign advantage in 2004, one political party claimed their opposition in the White House was "anti-science." Because President George W. Bush had limited federal funding for human

embryonic stem cells (hESCs) to existing lines, they declared his whole party was against evidence-based thinking and they were the Party of Science and everyone who cared about science should vote for them.

They had mastered framing. (1) What they left out of the real science picture was that the technology for deriving hESC's had been developed *outside* federal funding because President Clinton had made it illegal. It had gotten state and foundation money instead. Though hESC technology had been developed during the Clinton administration he wisely punted a decision on it to his successor. President Bush, listening to concerns from one side of his party about ethical implications if it had no ground rules and another side that felt like the technology could cure lots of diseases (2), compromised. The National Institutes of Health and its government-funded scientists were happy to be able to give and get federal grants for it. NIH Acting Director Dr. Ruth Kirschstein said at the time, "We are pleased with the President's decision to allow the use of Federal funds for important basic research on human embryonic stem cells."

Yet the President and his party were called anti-science even though they were the first to federally fund this research.(3)

That's the power of framing. And the same forces are aligned against agriculture today. In the developed world, a full belly inside allows us to think about [what star we put on the outside of it](#) [1].

While speaking with Europe's [Dr. David Zaruk](#), [2] he noted that he had recently dined with a friend from Uganda, and his friend told him they use no "pesticides", the word did not exist. They instead had "medicine for plants." They are the exact same chemicals, but they help the developing world gain the ability to grow food the same way the "agricultural 1%" who were lucky enough to be born in France or America can. The developing world, stuck with the back-breaking labor that goes into legacy farming, regards chemistry as a positive thing, just as they do medicine.

If your family member has a disease, do you give them essential oils or medicine? Among the true anti-science groups in America, this is a real debate, but not among people educated about science. Certainly not in the developing world, where far too many people die who have access to alternative medicine but not the real thing. You give people medicine. You give plants medicine.

Conventional agriculture does not need to create a path toward extinction of chemicals, they need to stop letting activists frame their technology for financial gain. We all need to create a path for continued chemical science.

Sure, we could also hope wealthy environmentalists gain as much knowledge as poor farmers in Uganda, but that is realistically too much to ask.

NOTES:

(1) Though they were unsuccessful. In 2004, President Bush received the highest percentage of the vote since his father in 1988.

(2) An episode of "The West Wing", an alternative reality show about politics in the late 1990s and early 2000s, [said Parkinson's Disease would be cured by 2014 if Republicans would get out of the way](#) [3].

(3) Not to mention that he doubled funding for the NIH in five years.

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