Spread of GM mosquito conspiracy theory hurts fight against Zika

01/02/2016

According to a report in Business Insider which was the first to refute the story, the theory of seems to have originated on the social media site Reddit (under the subcategory 'conspiracy'). Subsequently, an article titled "GMO mosquitoes could be cause of Zika outbreak, critics say," appeared on the website of Russia Today (a government funded news network that is known to promote conspiracy theories). A day later, the *UK tabloid Daily Mail* published a similar piece with the title "Are scientists to blame for Zika virus? Researchers released genetically modified mosquitos into Brazil three years ago." Worryingly, more articles are appearing on smaller news outlets and being shared on other social media sites as well.

The idea carries no scientific weight or credibility, and such news reports also highlight the same kind of poor reporting that undermined legitimate communication efforts during the Ebola outbreak last year, threatening to move focus away from what is important—making sure that people receive the most up to date and accurate information possible.

Oxitec, the company behind the trials, are attempting to reduce the population of the *Aedes aegypti* mosquitoes which are the major vectors for carrying mosquito borne diseases like dengue, chikungunya and Zika by creating genetically engineering sterile males. The trials that have been conducted in the past few years have proved so successful that the city of Piracicaba recently entered into an agreement with Oxitec to expand its efforts and build a larger facility. (See this GLP article from last week for a detailed look at how the mosquito works).

You don't have to look too far beneath the surface to see that the recent claims of modified mosquitoes causing Zika have no merits. There is no evidence presented and the chief 'critical' quote is taken from a 2012 comment made by Helen Wallace, head of the anti-GMO group GeneWatch in response Oxitec's mosquito trials conducted that year. For a thorough debunking of the claims in the Zika conspiracy theory, see this blog which breaks down several conspiracies surrounding the Zika outbreak. Lydia Ramsey of *Business Insider* also makes several pertinent points as to why no one should believe in it. And when she actually interviewed an expert, this is what he said:

> When we chatted with Alex Perkins, a Notre Dame biological sciences professor, about the Zika mosquito conspiracy, he told us nothing could be farther from the truth.
>
> In fact, “It could very well be the case that genetically modified mosquitos could end up being one of the most important tools that we have to combat Zika,” Perkins said. “If anything, we should potentially be looking into using these more.”

The world will always have conspiracy theorists. But my ire in this case, is not directed at them. Instead it is more at reporters and editors who think it is appropriate to publish unfounded claims with no supporting information whatsoever. The Daily Mail is not known for its quality of reporting but it is a newspaper with a very large readership, both in print and online. Mail Online, the website of the Daily Mail has over 11.4 million daily visitors, and by all measures Russia Today is widely viewed as well, given that the article has been shared close to 15,000 times on Facebook. Achieving such a large reader base comes a degree of responsibility which increases greatly during a time of crisis, when the need for information is extremely high.

The 2014 Ebola outbreak was a watershed moment for health reporting that we can look back to see how misinformation changed the outlook of the epidemic. Social media in retrospect had made things better and worse—better in that it easier to get the right word out about what people can and should do in a health emergency, but worse in that it is harder to control the spread of misinformation. As Victor Luckerson wrote in *TIME* during the Ebola crisis:

> Trying to stem the spread of bad information online actually shares many similarities with containing a real-world virus. Infected Internet users, who may have picked up bogus info from an inaccurate media report, another person on social media or word-of-mouth, proceed to “infect” others with each false tweet or Facebook post.
>
> ….
>
> Moments of crisis, when there’s a vacuum of accurate information, only exacerbate this. “Fear has a role,” says Emilio Ferrara, a postdoctoral fellow at Indiana University’s Center for Complex Networks and Systems Research. “If I read something that leverages my fears, my judgement would be obfuscated, and I could be more prone to spread facts that are obviously wrong under the pressure of these feelings.”

He also quoted the role of the CDC in making accurate information available, saying “Quick, accurate information disseminated as widely as possible, experts say, is the only way to combat the spread of falsities.”

We are fighting a pandemic that has health officials around the world scrambling for solutions. And we are doing so with a very limited set of tools. The Oxitec mosquitoes has proved to be safe and successful on a small scale and it will be many more years of testing and field trials before we will know whether it can be used safely and efficiently on a large scale. However, spreading misinformation about its use only serves to promote fear and could potentially delay its course – a dangerous outcome, given that this is unlikely to be the last mosquito borne epidemic we will see.

In a recent panel discussion conducted by the DC Science Writers Association about reporting during the Ebola crisis, Joel Achenbach, a reporter for the *Washington Post* talked about the responsibility of the journalists, saying, “our challenge at the Post was to be a good filter of the news so that we would not feed the hysteria.” We are yet again faced with a similar situation ripe for the spread of hysteria. Let’s hope we do better this time.

Arvind Suresh is a science media liaison at the Genetic Expert News Service. He is also a science communicator and a former laboratory biologist. Follow him @suresh_arvind.