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## 'Best Solution' For The Control Of Zika Outbreak

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**Dr. Nimrod Israely**

Founder and CEO of Biofeed Ltd. and The Fruit Fly Research Institute, Keynote Speaker

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So far we don't have vaccine to Zika virus. Under this condition the only solution is to control the vector / mosquito (*Aedes aegypti*) that transfer the virus. Let's see what characters are required from **Best Solution** for stopping the Zika virus epidemic:

1. **Protect against Zika virus.**
2. **Protect against other *Aedes aegypti* borne-diseases**, such as; Yellow fever, Japanese Encephalitis, Chikungunya and Dengue within the same time-frame and budget (as for the Zika).
3. **Time to solution** – 1 to 2 years (assuming budget is sufficient).
4. **Applicable and practical** - to wide area and/or large population.
5. **Long lasting** - requires no-more than 1-2 application per year.
6. **Protect locals and passing by.**
7. **Cost-effective** (scalable).
8. **Safe and harmless** - to human and to environment.
9. **Suitable for use** - with low local resident cooperation (often the ca



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Comparing available technologies vs. desired characteristics for 'Best Solution' (from above list):

Technology / Characteristics		1	2	3	4	5	6	7	8	9	10
Spraying - regional		✓	✓	✓			✓			✓	
Spraying - reproduction sites		✓	✓	✓			✓			✓	
Repellents		✓	✓	✓							
Traps	Evaporation <sup>1</sup>	✓	✓	✓		✓	✓		✓	✓	✓
Attract & Kill	Evaporation <sup>1</sup>	✓	✓	✓		<sup>3</sup> ✓	✓		✓	✓	
	Gravity <sup>1</sup>	✓	✓	✓	<sup>2</sup> ✓	<sup>3</sup> ✓	✓	✓	✓	✓	
Nets				✓		✓			✓		
Sterile mosquitoes					✓		✓		✓	✓	
Natural enemies									✓	✓	

1- Technology for slow release of attractants; 2 - Depends on attracting range; 3- Depends on slow release technology

From the above we learn that **Attract & Kill** has the highest control potential. Meanwhile, as long as attract & kill is not used we are using pesticides by spraying. Today it is done frequently to make sure mosquito population remains low. Although those spraying have low toxicity, in the high doses and frequency it is used today it is damaging human health and environment safety.

**Note:** 1) Nets – not relevant for mosquitoes that are active in daytime, like *Aedes aegypti*.  
2) Repellents – effective only by contact with the mosquito. Requires often cover of the entire exposed body parts

Thanks to Professor emeritus **Rachel Galun** for her support in writing this post

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 CEO at Kiralis Technologies Lt

Previous outbreaks with similar carriers were dealt with similar if more drastic strategies ( Malaria by eliminating still water, or swamps). 3y ...

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True. That explains why a 100 years later hundreds of millions of people still suffer from Malaria and over 700,000 people, annually, die as a result of mosquito borne-diseases 3y ...

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