

TOPIC NUMBER:
AF121-207

TOPIC TITLE:
Floral Disruptor –
Directed Energy
Weed Abatement and
Prevention Tool

**CONTRACT
NUMBER:**
FA9304-14-C-0008

**SBIR
COMPANY
NAME:**
Global Neighbor Inc.
Centerville, OH

**TECHNICAL
PROJECT
OFFICE:**
Air Force Test Center
Edwards AFB, CA

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Vegetation grown in a greenhouse at Central State University is used for testing NatureZap technology. (Courtesy Photo)

SMALL BUSINESS BLOSSOMS THROUGH AIR FORCE PARTNERSHIP

The Air Force's search for a chemical-free way to kill weeds helped put an Ohio-based small business on the road to commercial success.

Global Neighbor, Inc., is now selling its NatureZap product through Amazon and several online dealers. The hand-held, spot treatment technology – which uses directed energy to control unwanted vegetation - was developed with support from an Air Force Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) award.

Jon Jackson, Global Neighbor's president and principal investigator, said the SBIR/STTR program was a key to bringing the product to consumer markets and he expects the company to sell 1,000 units in 2016.

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A REAL NEED

Officials at Edwards Air Force Base in California, like other bases across the country, are required to strive to protect the environment of their installations. That includes ensuring the natural habitat and native species of wildlife are sustained.

However, bases have traditionally had to rely on costly herbicides – which can damage the environment – or labor-intensive mowing and tilling to control vegetation.

“Every year millions of dollars are spent on weed control in and around military installations,” said Dr. Danny Reinke, an Air Force program manager at Edwards. “Herbicide use has negative impacts on wildlife populations, so having a cost-effective device that eliminates their use or reduces the amount of machinery was one of our goals.”

Using heat, lasers, sound or some other form of directed energy to eliminate weeds seemed to be a safe, effective means of weed control that would destroy them in various stages of growth from seeds to maturity, Reinke added. That led to the Air Force call for a small business partnership under the SBIR/STTR program.

STRONG COMMERCIAL POTENTIAL

In addition to delivering a product to meet an Air Force need, Global Neighbor is now selling three models of NatureZap to consumers.

The product lines are being touted as a weed killer that can be used on pavers, sidewalks, gardens and yards - without harming wildlife living in the treated area – and as a way to avoiding the physical strain of manual weeding.

“The user simply points the NatureZap DE at the unwanted vegetation, pushes a button, and the weed dies,” Global Neighbor’s Jackson said. “Having sold many units, to good reviews, Global Neighbor now has a clearer picture of where this unique technology can be used to benefit the owner.”

For example, NatureZap can be used to control weeds around ornamental ponds without the risk of exposing frogs or fish to harmful chemicals. It can also be applied to urban prairies that are intended to be pollinator-friendly spaces, where the bee population would suffer from the use of chemicals.



A customer in Florida uses the NatureZap DE. (Courtesy photo)

Additionally, reducing the use of chemicals to control vegetation might provide long-term benefits to human health as some studies show a link between some herbicide ingredients and cancer.

LOCALIZED IMPACT

Global Neighbor and its partners at nearby Central State University have been collaborating for a decade on research, testing and commercialization of alternative weed control solutions for consumers, farmers and professionals tasked with landscape maintenance.

During that time, the company grew from one contract employee and five student projects to five full-time positions and one contract employee.

“Additionally, our mechanical designer, a veteran who served two tours in Iraq, was able to apply his discipline and Army training to designing and building products that would benefit both the military and commercial markets,” Jackson said.

The company also is evaluating NatureZap’s potential to be sold through traditional retailers, which could provide an even bigger boost to the company’s sales and spur more hiring.



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AIR FORCE SBIR/STTR PROGRAM

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