

Innovative Agriculture Technology For a World in Transition

www.newleaftechnologies.com

Food Security Challenges in the Caribbean

Numerous challenges to food self-sufficiency and food security in the Caribbean include:

Key Challenges

- Climate change
- Natural disasters
- Land scarcity
- Water scarcity
- Food inflation
- Disrupted supply chains
- Poverty
- Economic disparities

Climate Change Challenges

- Extreme weather events
- Rising temperatures & sea levels
- Shifting precipitation patterns

Small-holder Farmers' Challenges

- Water scarcity
- High fertilizer costs
- Limited space and difficult terrain
- Labor costs
- Expensive adaptations
- Revenue enhancement barriers



The Solution

New Leaf Technologies offers "green technology" solutions for a world in transition. Agtech solutions, like resource-smart agriculture, nature-based designs and innovative crop management practices, can help small-holder farmers adapt to these changing conditions.

The Crop Circle Farm and Garden system is a unique agtech solution that uses spiral design principles to optimize crop yield and minimize consumption of vital resources like arable land, water and fertilzer. The spiral design allows for a closed irrigation system, which reduces water waste and pathogen contamination. By corralling water around the roots of plants, plant growth and yield are maximized. In addition, this system can be used for a wide range of crops, locations and growing conditions, making it entirely suitable for small-holder farmers.

The Tomato Volcano is another innovative agtech solution from New Leaf Technologies. This system uses nature-based design principles to create an optimal environment for tomato production. The Tomato Volcano is a raised trellis system that utilizes composting and soil regeneration techniques to create a nutrient-rich environment for tomato plants. The raised trellis design improves air flow around tomato plants reducing leaf and fruit disease. It also reduces water consumption by as much as 90% because of the Crop Circle irrigator, making the Tomato Volcano sustainable and resource-efficient.

By implementing these agtech solutions, small-holder farmers in the Caribbean can improve their crop yields, reduce their reliance on high-cost fertilizer, and increase their resilience to the effects of climate change. These technologies can help farmers overcome the challenges they face and ensure a food secure future for agriculture in the region.





Crop Circle Farms®

It's time to change the shape of agriculture to meet the needs of a word in transition. Patented and trademarked, Crop Circle specific benefits include:

- Low water use irrigation specifically designed to target the roots with no water waste
- Increase crop yield 2 to 4 times that of traditional row farming
- Soil regeneration
- Targeted nutrient delivery
- Provides a pesticide free zone to attract pollinators
- Dramatic reduction in fertilizer use
- Virtually no weeding
- Creates a food safe environment
- Adaptable to climate and location
- Off the grid farming
- Improved farm revenues
- Reduced input costs
- Reduced carbon footprint
- Small space farms & gardens
- Versatile farm and food habitat settings
- Improved community health and wellness
- Gender equity and better work-life balance
- Food security for communities







Crop Circle Irrigators

- Crop Circle Irrigators are the backbone all the Crop Circle designs and systems
- Unlike spray, drip, and soak irrigation systems, the Crop Circle irrigator creates a water reservoir that holds water at the roots, eliminating water runoff and waste, which reduces costs and environmental impact on land and at sea
- The cavity allows for a drill don't till method of agriculture that reduces soil degradation.
- The irrigators water plants in spirals, cultivated rows, backyard gardens, on sloped land, rooftops, parking lots, and containers.
- They can be automated for a more plant-and-forget approach to farming.



Tomato Volcano®

an explosive new way to grow tomatoes

Typically, tomatoes are trellised and tied up as they grow, limiting production by as much as half. Tomatoes are vine plants and as such prefer to grow along the ground where they are prolific producers of flower and fruit. However, vining over the ground at grade can be fraught with problems some of which include food safety, pest control, fruit quality, weeds, water management, disease management, and access for harvest.

The patented trellis design of a Tomato Volcano encourages a tomato plant's natural vining habit, which will maximize fruit production. The design allows air circulation to ward off waterborne disease, ease of harvest, water conservation, and provides a full leaf canopy to shade tomatoes from sun scald. As the vines grow up and spread out in all directions over the surface of the Tomato Volcano, new growth rises from the center. This volcanic growth continues until frost or for 2 years in a tropical, sub-tropical setting.



Tomato Volcano®

- Go anywhere raised trellis systems
- 3 sizes farm, community garden and container
- Conserves water, fertilizer, and soil
- Marine grade stainless steel, heavy-duty construction, lasts for decades
- Utilizes the Crop Circle irrigator for minimalist watering
- Volcanoes can be outfitted with a renewable power pole
- Reduces produce loss from inferior trellis design, leaf diseases and pathogens
- Produce can be grown chemical-free
- No weeding
- Easy, convenient waist height harvesting
- Grow 10 times the tomatoes
- Grow other vine crops including cucumbers and trailing squash



In the Caribbean, tomatoes are a staple and an important ingredient in island cuisine. Today however, tomato inflation has spread across the islands where the cost of tomatoes has risen beyond the affordability for most islanders. Growing tomatoes locally in Tomato Volcanoes will make tomatoes affordable again.





Social Impact

New Leaf Technologies is partnered with Growing to Give®, a 501c3 non-profit registered in the US and in South Africa to provide farm and garden systems to vulnerable communities. Learn more, www.growingtogive.org



With the Caricom nations commitment to reducing food imports by 25% by 2025 this means the role of innovative agriculture systems plays is vital for helping increase local food production. By providing efficient farm systems to farmers at little or no cost, we we quickly build local food systems that are sustainable and resilient and help small holder farmers improve revenues with the gift of innovation from New Leaf Technologies, Growing To Give, Governments and Island collaborators. We are committed to food security for all of the islands in the Caribbean.





Pilot Project Development

Pictures can be worth a thousand words but touring one of our food security sites is truly aweinspiring. Visitors immediately recognize the vibrant health and size of plants as well as the quality of the produce. Frequent visitors see the rapid growth from one week to the next.

Each island food security site presents an opportunity to introduce these environmentally smart ag technologies to locals for use in their backyards or on small holder farms.

Partnering with a community organization, such as Growing to Give, can be an effective way to garner support for our food security projects. With their involvement, donors may be more inclined to contribute, knowing that their resources will be used to provide these systems to islanders at little or no cost.

This collaborative approach not only encourages innovation and adoption of sustainable farming practices, but also fosters a sense of community engagement and shared learning. Ultimately, it can lead to the growth of more resilient, eco-friendly, and productive agricultural systems that would benefit everyone throughout the Caribbean.

The concept of seeing is believing through inperson tours is an important part of introducing innovative agricultural systems to the region.



Two 1/4 acre sized Crop Circles, growing yellow beans and paste tomatoes



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