



December 9, 2019

Aquaponics Food Safety Statement

## **Established Science Confirms Aquaponic Fish and Produce are Food Safe**

Aquaponics is a food production method integrating fish and plants in a closed, soil-less system. This symbiotic relationship mimics the biological cycles found in nature. Aquaponics has been used as a farming technique for thousands of years and is now seeing large-scale viability to feed a growing global population.

Benefits of aquaponics include dramatically less water use; no toxic chemical fertilizers or pesticides; no agriculture discharge to air, water or soil; and less food miles when systems are located near consumers where there is no arable soil.

Aquaponics has consistently proven to be a safe method to grow fresh, healthy fish, fruits, and vegetables in any environment. Governments and food safety certifiers must utilize the most current, accurate information to make food safety decisions about aquaponics at this time when our food systems adapt to a growing population and environmental concerns.

### **Food Safety Certification for Aquaponics**

For years, commercial aquaponic farms have obtained food safety certification from certifying bodies such as Global GAP, USDA Harmonized GAP, Primus GFS, and the SQF Food Safety Program. Many aquaponic farms are also certified USDA Organic. These certifying bodies have found aquaponics to be a food safe method for fish, fruits, and vegetables. As far back as 2003, researchers found aquaponic fish and produce to be consistently food safe (Rakocy, 2003; Chalmers, 2004). Aquaponic fish and produce continue to be sold commercially across North America following all appropriate food safety guidelines.

### **Recent Certification Changes Based on Unfounded Concerns**

Recently, Canada GAP, a food safety certifier, announced that it will phase out certification of aquaponic operations in 2020, citing concerns about the potential for leafy greens to uptake contaminants found in aquaponic water.

Correspondence with Canada GAP leadership revealed that the decision to revoke aquaponics certification eligibility was based on research and literature surveys related to the uptake of pharmaceutical and pathogenic contaminants in hydroponic systems. However, these concerns are unfounded based on the established evidence.



First, the Canada GAP decision assumes that aquaponic growers use pharmaceuticals to treat fish, and that these pharmaceuticals would be taken up by plants causing a food safety risk.

In fact, pharmaceuticals are not compatible with aquaponics. Aquaponics represents an ecosystem heavily dependent on a healthy microorganism community (Rinehart, 2019; Aquaponics Association, 2018). The pharmaceuticals and antibiotics referenced by Canada GAP would damage the beneficial microorganisms required for aquaponics to function properly.

Second, the CanadaGAP decision misrepresents the risk of pathogenic contamination. Aquaponic produce – like all produce – is not immune to pathogenic contamination. However, aquaponics is in fact one of the safest agriculture methods against pathogenic risk. Most pathogenic contamination in our modern agriculture system stems from bird droppings, animal infestation, and agriculture ditch or contaminated water sources. In contrast, commercial aquaponic systems are “closed-loop” and usually operated in controlled environments like greenhouses. Almost all operations use filtered municipal or well water and monitor everything that enters and leaves the system.

### **Aquaponics and Food Safety**

If practiced appropriately, aquaponics can be one of the safest methods of food production. The healthy microbes required for aquaponics serve as biological control agents against pathogenic bacteria (Fox, 2012). The healthy biological activity of an aquaponic system competitively inhibits human pathogens, making their chances for survival minimal. This is, in effect, nature’s immune system working to keep our food safe, rather than synthetic chemicals.

The Government of Alberta, Canada, ran extensive food safety tests in aquaponics from 2002 to 2010 at the Crop Diversification Centre South (CDC South) and observed no human pathogenic contamination during this entire eight-year period (Savidov, 2019, Results available upon request). As a result of this study, the pilot-scale aquaponic operation at CDC South was certified as a food safe operation in compliance with Canada GAP standards in May 2011 (GFTC OFFS Certification, May 26, 2011). Similar studies conducted by University of Hawaii in 2012 in a commercial aquaponic farm revealed the same results (Tamaru, 2012).

Current aquaponic farms must be able to continuously prove their food safety. The U.S. Food Safety Modernization Act requires farms to be able to demonstrate appropriate mitigation of potential sources of pathogenic contamination as well as water testing that validates waters shared with plants are free from contamination by zoonotic organisms. So, if there is a food safety concern in aquaponics, food safety certifiers will find and document it.



## **Conclusion**

The recent certification decision from Canada GAP has already set back commercial aquaponic operations in Canada and has the potential to influence other food safety certifiers or create unfounded consumer concerns. At a time when we need more sustainable methods to grow our food, it is essential to work on greater commercial-government collaboration and scientific validation to ensure fact-based food safety standards.

In order to expand the benefits of aquaponics, we need a vibrant commercial sector. And for commercial aquaponics to succeed, we need reliable food safety certification standards based on established science.

Consumers can feel secure knowing that when they purchase aquaponic fish and produce, they are getting fresh food grown in one of the safest, most sustainable methods possible.

Sincerely,

The Aquaponics Association, along with the undersigned entities

## **UNITED STATES**

### *Alabama*

Gardens on Air – A Local Farm, Inc.  
Southern Organics

### *California*

AONE Aquaponics  
Fresh Farm Aquaponics  
Go Fish Farm  
SchoolGrown Aquaponics  
Seouchae Natural Farming  
Shwava, Inc.  
University of California, Davis

### *Colorado*

The Aquaponic Source  
Bountyhaus School Farms  
Colorado Aquaponics  
Dahlia Campus for Health and Wellness Aquaponic Farm  
EcoPONEX Systems International LLC  
Emerge Aquaponics  
Flourish Farms @ The GrowHaus  
Grand Valley Greens, LLC  
GroFresh Farms 365  
Northsider Farms LLC



<i>Connecticut</i>	Marine Bait Wholesale
<i>Delaware</i>	Aquaponics AI
<i>Florida</i>	The Aquaponics Doctors, Inc. Aquaponic Lynx LLC The Family Farm GreenView Aquaponics, LLC Sahib Aquaponics Traders Hill Farm
<i>Georgia</i>	FM Aquaponic Farm Georgia Aquaponic Produce LLC TRC Aquaponics Teachaman.fish Ula Farms
<i>Hawaii</i>	Friendly Aquaponics, LLC
<i>Idaho</i>	FoodOlogy
<i>Illinois</i>	Central Illinois Aquaponics
<i>Kentucky</i>	Janelle Hager, Kentucky State University K&L Organics Purple Thumb Farms West KY Aquaponics
<i>Louisiana</i>	Small Scale Aquaponics
<i>Massachusetts</i>	Aquaponics Academy Lesley University O'Maley Innovation Middle School
<i>Maryland</i>	Anne Arundel Community College Greenway Farms, LLC
<i>Missouri</i>	<a href="http://www.PlentyCare.Org">Www.PlentyCare.Org</a>
<i>Minnesota</i>	Menagerie Greens Inc.
<i>North Carolina</i>	Grace Goodness Aquaponics Farm, LLC 100 Gardens



<i>New Hampshire</i>	University of New Hampshire
<i>New York</i>	iGrow News Oko Farms
<i>New Mexico</i>	Desert Verde Farm Growing the Greens High Desert Aquaponics Howling Coyote Farms Lettuce, Etc. LLC Openponics Project Urban Greenhouse Sanctuary at ABQ Santa Fe Community College
<i>Ohio</i>	Berean Aquaponic Farms and Organics LLC CHCA Eagle Farms Wildest Farms Williams Dairy Farms
<i>Oklahoma</i>	Freedom FFA Greener Grounds LLC
<i>Oregon</i>	Alternative Youth Activity Ingenuity Innovation Center Live Local Organic Triskelee Farm
<i>Pennsylvania</i>	Aquaponics at State High Yehudah Enterprises LLC
<i>Puerto Rico</i>	Fusion Farms Granja Ecologica Pescavida
<i>Rhode Island</i>	The Cascadia Bay Company
<i>Tennessee</i>	Great Head LLC



<i>Texas</i>	BioDiverse Technologies LLC BnE Enterprises East Texas Aquaponics, LLC Gentlesoll Farm HannaLeigh Farm K&E Texan Landscaping King's Farm Tarleton State University, Aquaponics Hydrotron West Texas Organic Gardening
<i>Utah</i>	Aquaponics Olio Wasatch High School
<i>Virginia</i>	Grace Aquaponics INMED Partnerships for Children Return to Roots Farm
<i>Vermont</i>	The Mill ART Garden, LLP
<i>Washington</i>	The Farm Plan Impact Horizon, Co. Life Tastes Good LLC Northwest Aquaponics LLC Wind River Produce
<i>Washington, DC</i>	Anacostia Aquaponics DC LLC P.R. Harris Food Hub
<b>AUSTRALIA</b>	
<i>New South Wales</i>	Wirrallee Pastoral Solum Farm
<b>BHUTAN</b>	
<i>Thimphu</i>	Chhuyang - Aquaponics in Bhutan
<b>BRAZIL</b>	
<i>Rio Grande do Norte</i>	Habitat Marte
<i>Santa Catarina</i>	Pedra Viva Aquicultura



## **BULGARIA**

*Burgas* Via Pontica Foundation

## **CANADA**

*Alberta* Agro Resiliency Kit (ARK) Ltd.  
Fresh Flavor Ltd  
Lethbridge College  
W.G. Guzman Technical Services

*British Colombia* Garden City Aquaponics Inc.  
Green Oasis Foods Ltd.  
Pontus Water Lentils Ltd.

*Ontario* Aquatic Growers  
University of Guelph  
Power From Within Clean Energy Society  
GREEN RELIEF

*Quebec* ML Aquaponics Inc

*Yukon Territory* North Star Agriculture

## **EGYPT**

*Cairo* Central Laboratory for Aquaculture Research

## **FRANCE**

*Paca* Vegetal Grow Development

## **INDIA**

*Delhi* Prof Brahma Singh Horticulture Foundation, New Delhi

*Karnataka* Blue's and Green's  
Spacos Innovations Private Limited

## **ITALY**

*Turin* Grow Up







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