Ohio Farm Bureau Young Ag Winter Conference 2015

Dr. Dave Smith, Ph.D.
Freshwater Farms of Ohio, Inc.
"Imagine an agricultural endeavor that grows a product that does not need to be introduced to the consuming public. Now imagine that this product is more than 90% imported to the U.S. and is failing to meet demand more and more. Now imagine raising an animal that gets a feed:gain ratio of 1:1, and uses less water to raise than beef. This animal product is also the healthiest source of protein for humans, and according to scientific consensus, the more people eat, the better their health... intrigued?..."
...let me welcome you to the world of aquaculture."
Seafood Trends 2015:

Seafood is perhaps the largest international commodity with fish trade exceeding **US$60 billion per year**. Almost 200 countries supply fish and seafood products to the global marketplace consisting of more than **800 commercially important species of fish, crustaceans and mollusks**. In the latest report by FAO (Food & Agriculture Organization) rising demand for seafood spurs growth in the global aquaculture and fisheries market.

Aquaculture – seafood supplied through aquaculture has increased from about 10 million tons in 1984 to 47 million tons in 2003 representing an **annual rate of growth of 8.5 percent**. To put this in a different perspective, in 1984 aquaculture represented 12 percent of world fisheries production while in 2003 it has risen to 38 percent. According to FAO, **aquaculture is expected to exceed 50 percent of the world’s edible seafood supply by 2025**.
Farmed fish, cauliflower top food trends for 2015

Look for healthy dining and Israeli food in 2016, says CBC Radio’s On the Coast food columnist, Anya Levykh

By On the Coast, CBC News  Posted: Jan 05, 2015 10:45 AM PT  |  Last Updated: Jan 06, 2015 11:18 AM PT

The Acorn’s mouth watering vegetarian dishes are part of a veggie-friendly trend that will continue this year. (theacornrestaurant.ca)

As the new year takes root, it brings new food trends for 2015, and CBC’s On the Coast food columnist Anya Levykh explains why fresh vegetables and farmed salmon will be big this year.
Health Risks -vs- Benefits

- (1) Salmon, Atlantic, farmed*
- (1) Salmon, Atlantic, wild*
- (2) Oysters, Pacific**
- (13) Rainbow trout, farmed*
- (2) Oysters, eastern, wild***
- (1) Salmon, Pacific***
- (13) Rainbow trout, wild*
- (122) Tilapia* (1)
- (29) Tuna, white, canned
- (81) Swordfish*
- (112) Shark
- (5) Pollock, Atlantic*
- (8) Flounder/sole*
- (21) Halibut, Atlantic and Pacific*
- (2) Oysters, eastern, farmed*
- (4) Scallops, bay and sea (100g)
- (6) Crab, king**
- (61) King mackerel*
- (10) Ocean perch, Atlantic*
- (4) Shrimp, mixed*
- (2) Clams, mixed*
- (10) Cod, Pacific*
- (10) Tuna, light canned
- (8) Haddock*
- (8) Catfish, wild*
- (8) Catfish, farmed*
- (10) Cod, Atlantic*
- (26) Lobster, northern**

Mercury (µg) | Omega-3 Fatty Acids: EPA/DHA (grams)
Attributes of Fish as Food Source

Evidence of beneficial effects of fish consumption in relation to:

- coronary heart disease
- stroke
- age-related macular degeneration
- mental health
- growth and development, in particular for women and children during gestation and infancy for optimal brain development of children.
FAO 2006:
Not enough fish in the sea
Levels of wild fish captures have remained roughly stable since the mid-1980s, (~ 90-93 million tonnes)

“There is little chance of any significant increases in catches beyond these levels” (FAO).

Global assessment of wild fish stocks 600 species group
52 % are fully exploited
17% overexploited
7% depleted
1% recovering from depletion
20% moderately exploited,
3 % underexploited.

77%

1980: 9 percent of fish consumed from aquaculture,
2010: 47 percent = 57.2 million tonnes
2010 Value Aquaculture Worldwide

- China: 49%
- Asia (w/o China): 32%
- Europe: 8%
- Africa: 2%
- Americas (-US): 7%
- US: 1%
- Oceania: 1%

Total $119 Billion USD

Source: FAO 2013 database
Groundwater Resources in Ohio (gal./min.)
Outdoor Pond Culture in High Clay Soils of NW Ohio
Conversion of Hog Barn to Solar-Heated Fish Barn
WaterSmith Raceway RAS in converted hog barn
Hog Barn conversion to Trout & Perch Barn
Aerial view of Freshwater Farms
Freshwater Farms of Ohio (1983)
Indoor Nursery Tanks with Young Trout
(Freshwater Farms of Ohio)
Aerated Ponds for rearing Yellow Perch Fry
First Grain-Fed Freshwater Shrimp Harvest in Ohio
(Freshwater Farms, 2001)
BIG FISH

Aquaculture flourishes as freshwater farms increase production

The Smith family of Urbana lures 5,000 people to their fish farm for the Ohio Fish & Shrimp Festival every September.

Certainly, it’s a novel way to spend a weekend in Ohio. More importantly, the event showcases aquaculture, which in the last decade ranks among the fastest-growing sectors of Ohio’s agriculture industry.

In fact, aquaculture sales more than tripled in 16 years. The state recorded sales at $6.6 million in 2007, the most recent census data available. In 1997, sales reached just $1.9 million. In recent years, the economic downturn and high feed costs have reduced profitability and decelerated growth for this industry. A slow recovery continues, but the future offers great potential, says Dr. Tony Forney, state veterinarian for the Ohio Department of Agriculture.

"In Ohio, we are a great state for..."
Recirculating WaterSmith module with conical bottom tanks on gravel biofilter
Trout Ranching in Spring-Fed Ponds
WaterSmith Recirculating Retail Display
Young Koi in Outdoor Holding Tank
Filter Mats and Nettings for Custom Biofilter Installations
WaterSmith Pond Fountains & Light Kits
"New Opportunities in Ohio Aquaculture and Aquaponics".
Plant Bed Filtration for Nutrient Removal
Large Scale Aquaponics (sand beds)
Net Pen Culture in Ohio Quarry Lakes
OHIO FISH & SHRIMP FESTIVAL

Sept. 18-20, 2015
10am-10pm
Freshwater Farms of Ohio, one mile north of Urbana
COME SEE US AT THE FARM
www.fwfarms.com