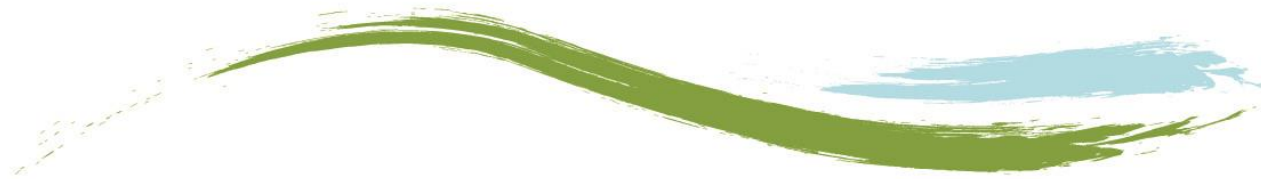


Aquaponics Innovation Center



Chris Hartleb
Department of Biology
Northern Aquaculture Demonstration Facility
Aquaponics Innovation Center



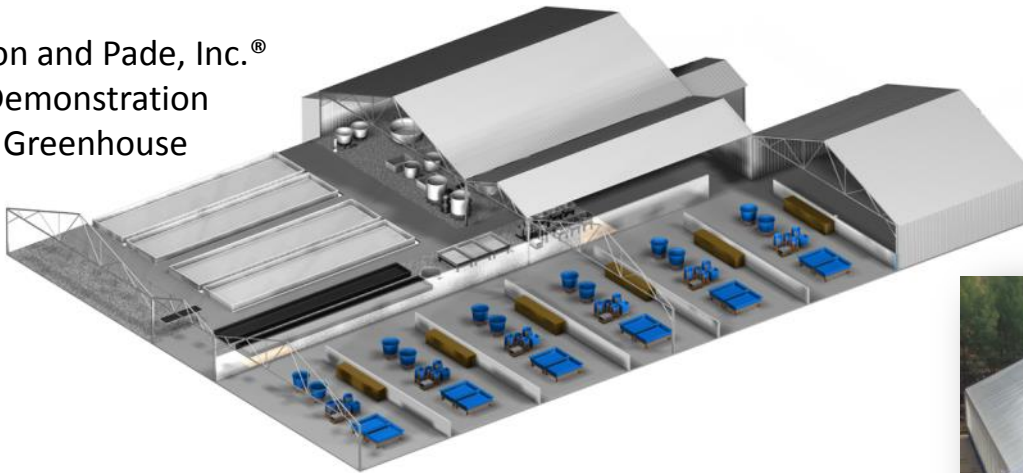
Economic Development Incentive

- Capitalize on the strengths of higher education institutions that serve as engines of economic renewal and talent development.
- Boost workforce development while stimulating job creation.
- Identify and build strong connections that link UW-System talent and research activities with established businesses, entrepreneurs, and economic development agencies.



Aquaponics Innovation Center Montello, WI

Nelson and Pade, Inc.®
Demonstration
Greenhouse



UWSP-Aquaponics Innovation Center



University of Wisconsin-Stevens Point
College of Letters & Science

Review

Challenges of Sustainable and Commercial Aquaponics

Simon Goddek ^{1,5,†,*}, Boris Delaide ^{2,†,*}, Utra Mankasingh ³, Kristin Vala Ragnarsdottir ^{3,4},
Haissam Jijakli ² and Ragnheidur Thorarinsdottir ⁵

¹ Aquaponik Manufaktur GmbH, Gelderner Str. 139, 47661 Issum, Germany

² Integrated and Urban Plant Pathology Laboratory, Université de Liège, Avenue Maréchal Juin 13, 5030 Gembloux, Belgium; E-Mail: mh.jijakli@ulg.ac.be

³ Institute of Earth Sciences, University of Iceland, Sturlugata 6, 101 Reykjavik, Iceland; E-Mails: utra@hi.is (U.M.); vala@hi.is (K.V.R.)

⁴ Institute of Sustainability Studies, University of Iceland, Sæmundargata 10, 101 Reykjavik, Iceland

⁵ Civil and Environmental Engineering, University of Iceland, Taeknigardur, Dunhagi 5, 107 Reykjavik, Iceland; E-Mail: rith@hi.is

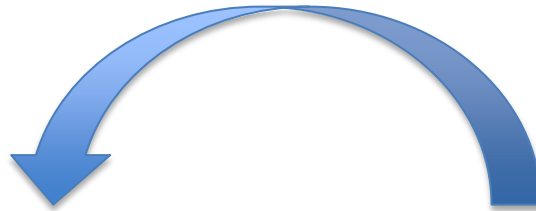
† These authors contributed equally to this work.

* Authors to whom correspondence should be addressed; E-Mails: sig97@hi.is (S.G.); boris.delaide@ulg.ac.be (B.D.); Tel.: +354-780-7346 (S.G.); +32-8162-2431 (B.D.).

Academic Editor: Marc A. Rosen

Received: 9 February 2015 / Accepted: 25 March 2015 / Published: 10 April 2015

Aquaponics Future

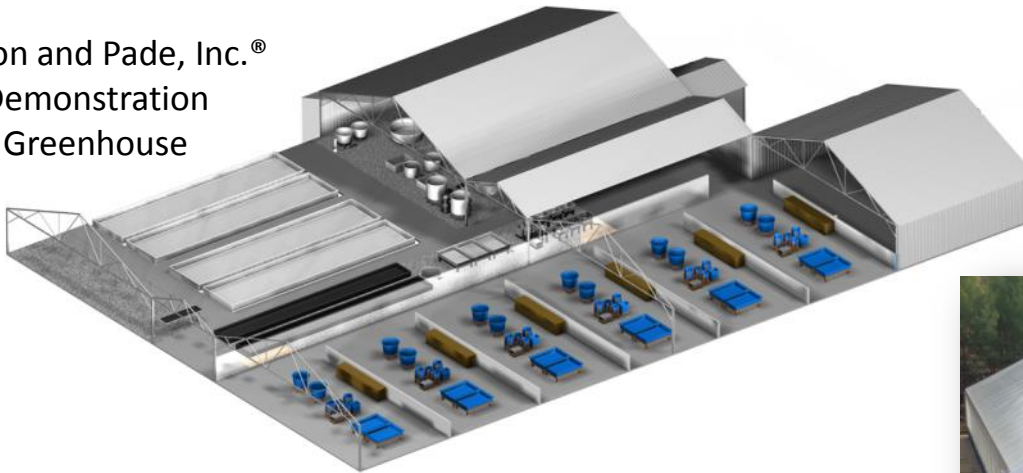


“There is a lack of scientific literature when it comes to aquaponic experiments on large-scale and during long-time sequences. Moreover, many experimental setups published are small-scale without replicates. Experiments covering bigger production systems exist, but they are performed by private research centers or companies, whereby confidential findings are not always made accessible to third parties.”



Aquaponics Innovation Center Montello, WI

Nelson and Pade, Inc.®
Demonstration
Greenhouse



UWSP-Aquaponics Innovation Center



University of Wisconsin-Stevens Point
College of Letters & Science

Overview of Systems



Fish Tanks



Clarifier



Mineralization Tank



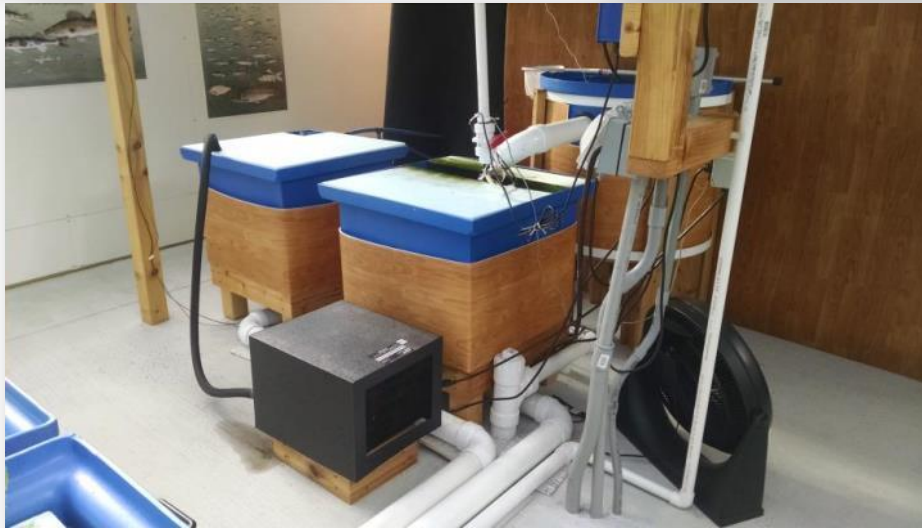
Bioreactor / Degassing



Raft Grow Beds



Pump / Chiller / Heater



Lighting



Water Chemistry



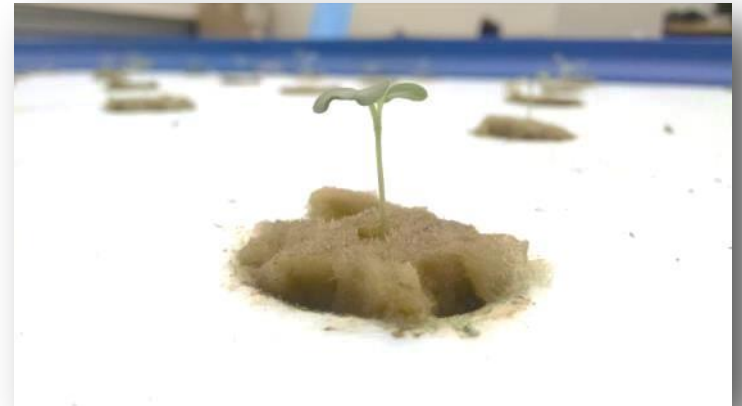
Real-time Monitoring (From water quality to insects)



Plant Growth / Photosynthesis



Seed Germination



Classroom/ Meetings



Tilapia



Walleye



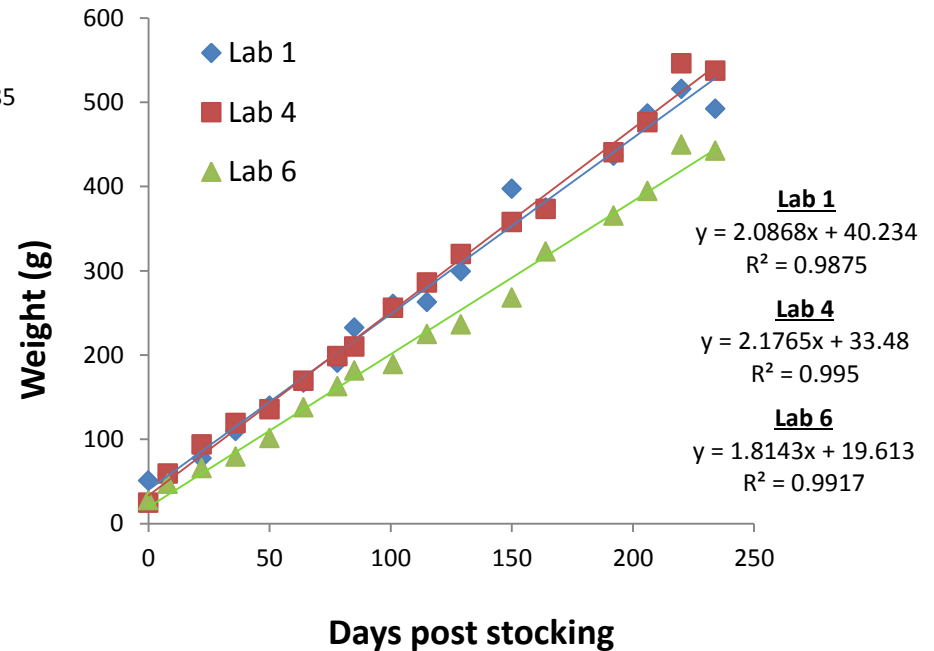
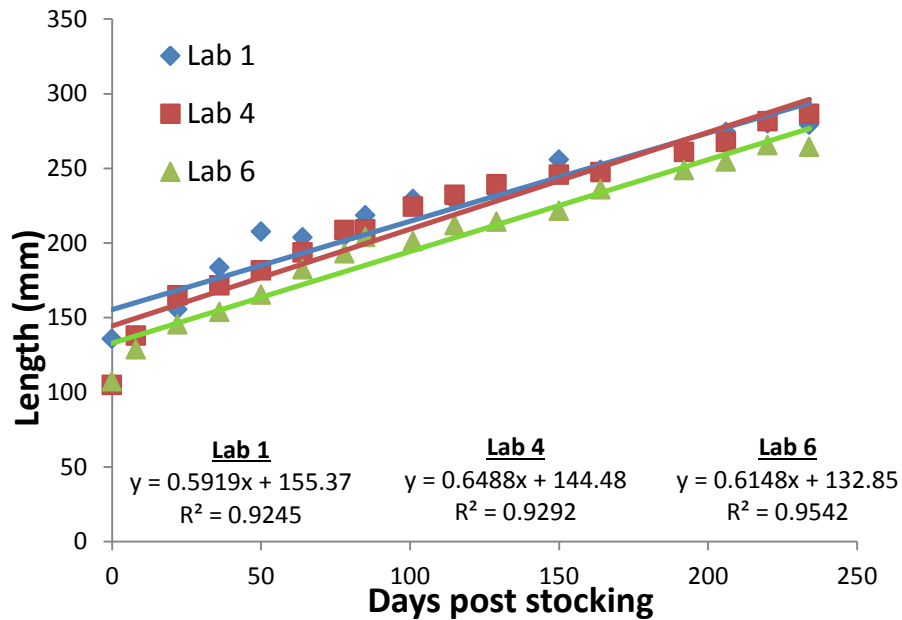
Plants



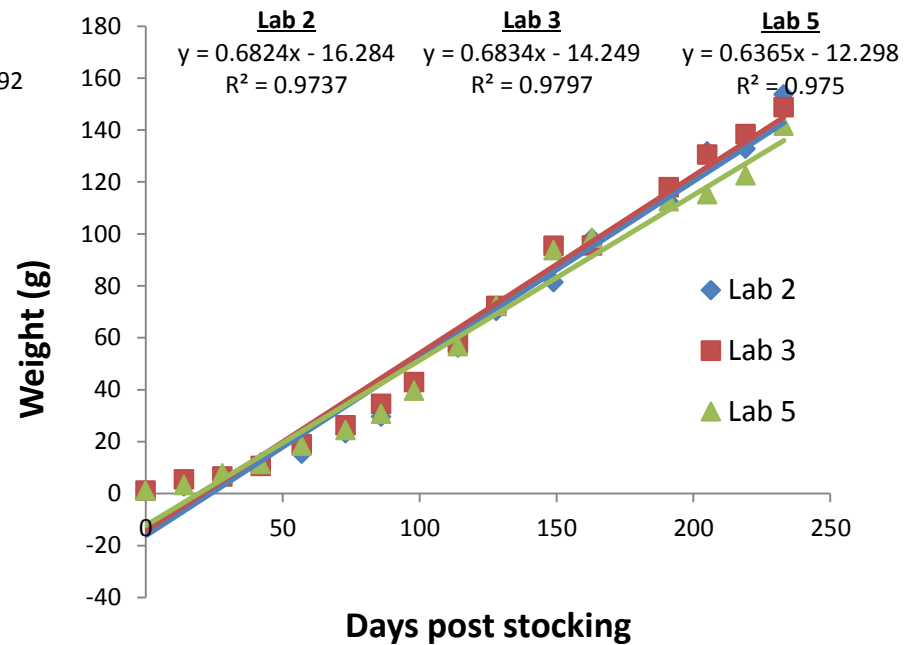
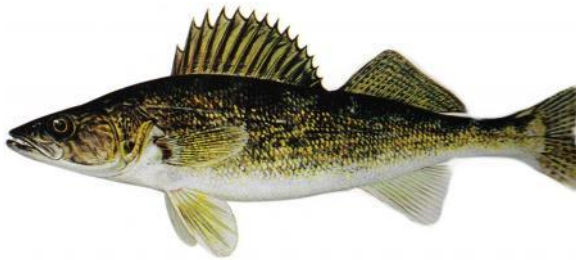
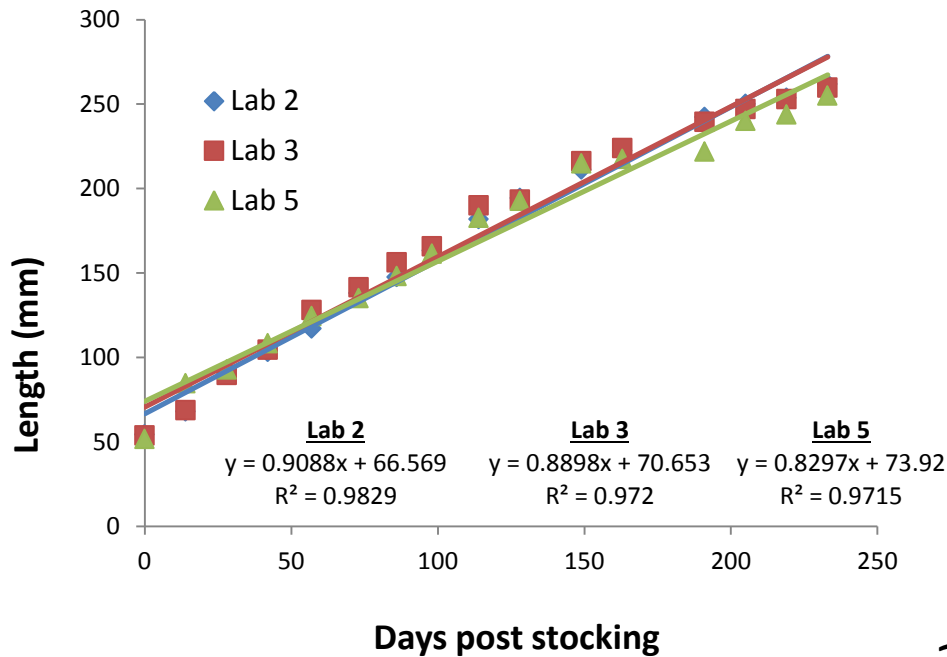
Quarantine and Purge System



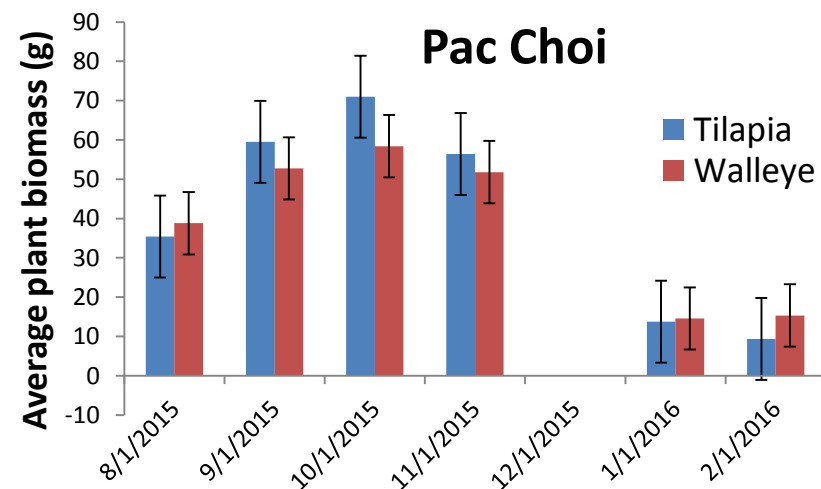
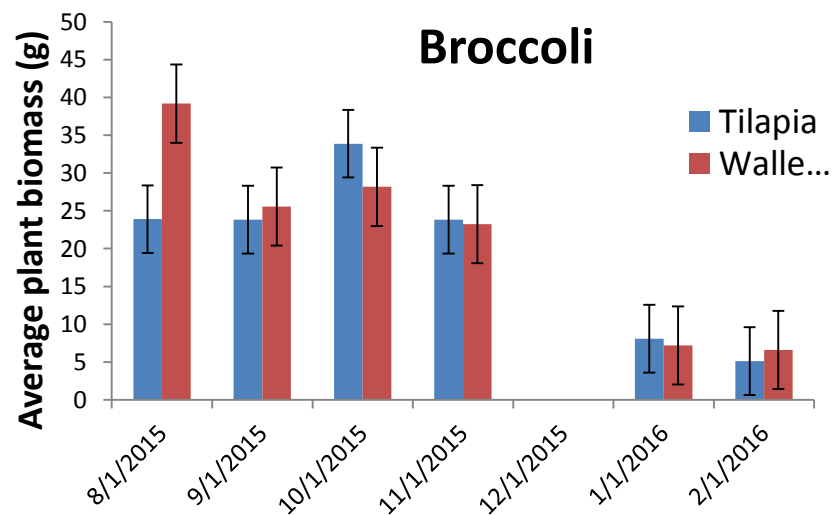
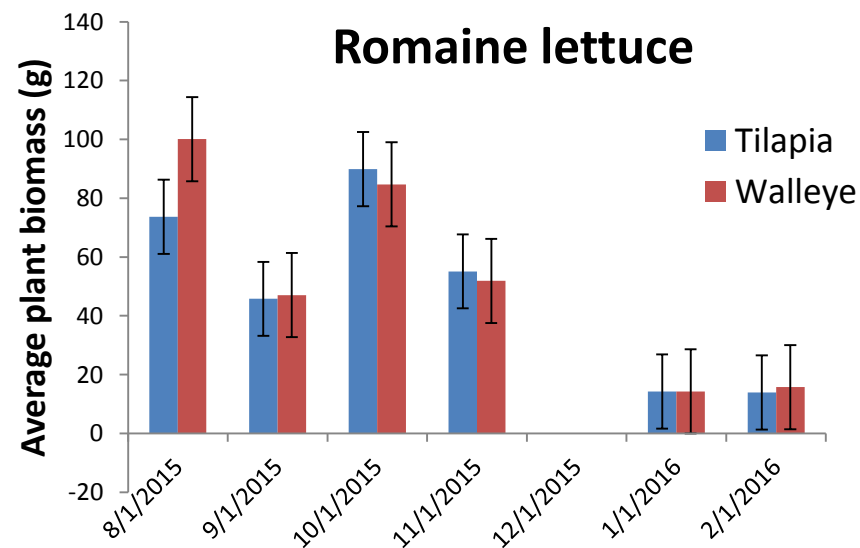
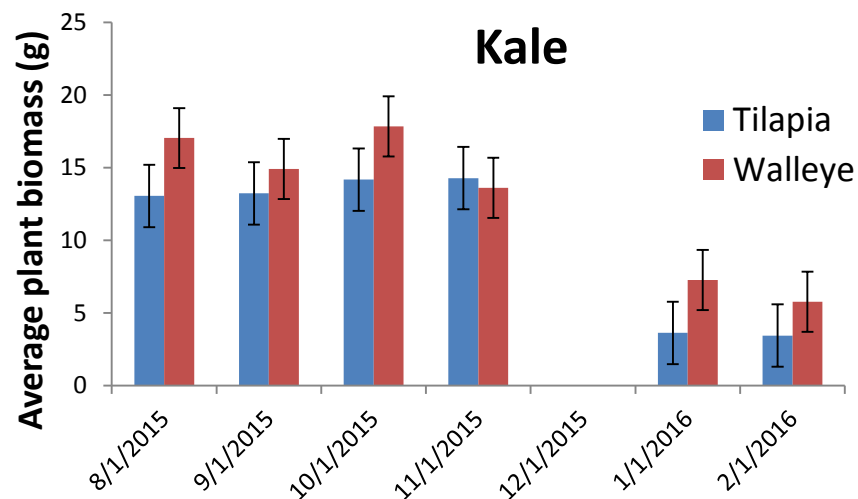
Tilapia Growth



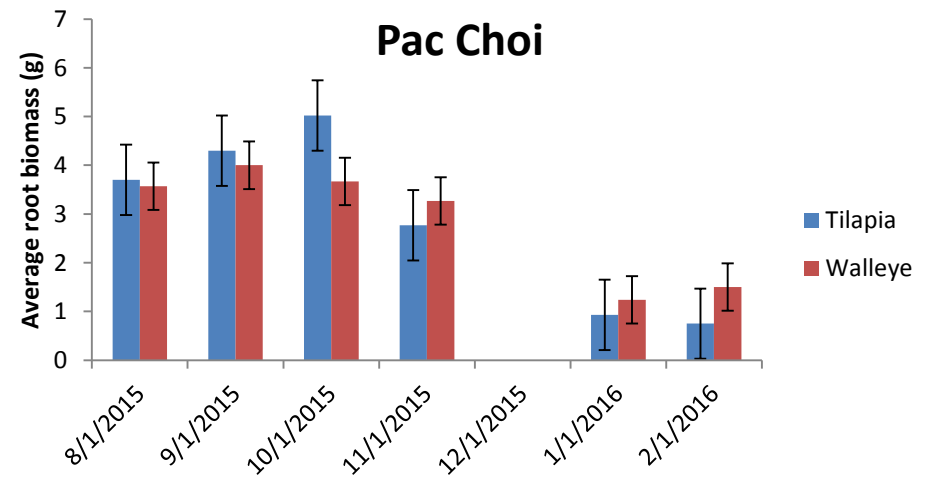
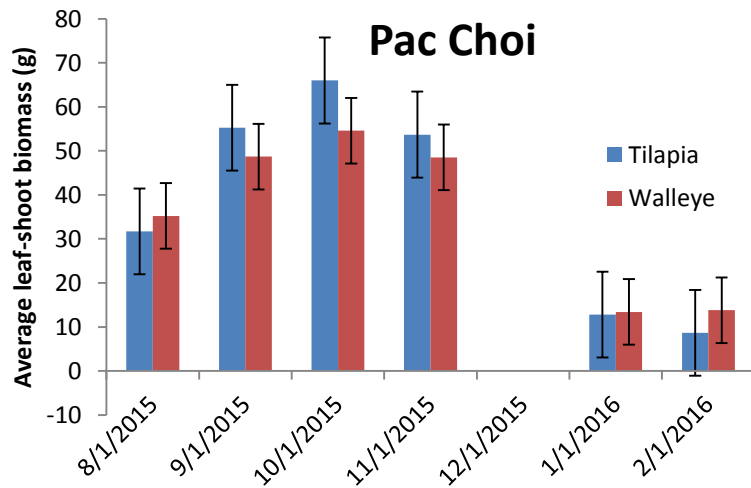
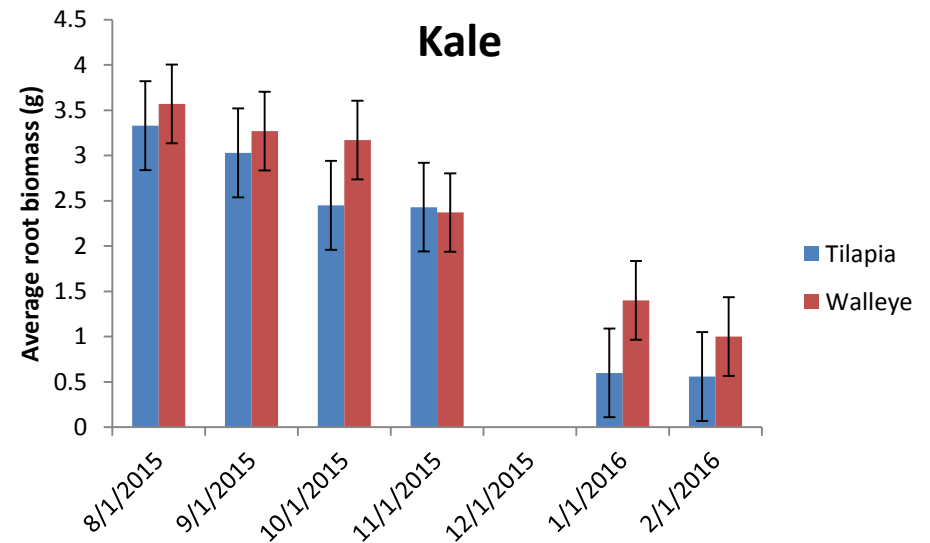
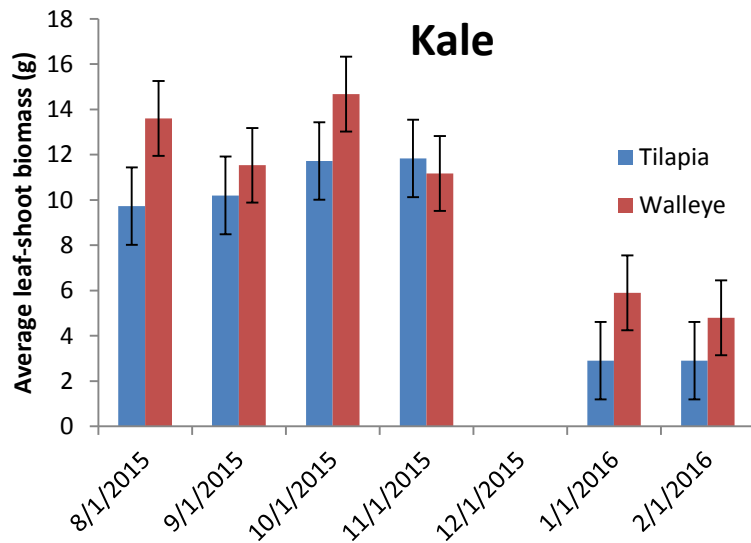
Walleye Growth



Plant Production (Yield)



Plant Growth



Education/Outreach



Education/Outreach



Summary / Contacts

- Aquaponics Innovation Center
 - Professional aquaponics certificate
 - Three college courses (semester long)
 - Internship opportunities
 - Collaborative research
 - <http://www.uwsp.edu/aquaponics>
- Northern Aquaculture Demonstration Facility
 - Aquaculture minor
 - Internship opportunities
 - Collaborative research
 - <http://aquaculture.uwsp.edu>

industry news



Students gained hands-on experience growing fresh plants and fish in an integrated, soilless system.

UWSP Students Complete First University Aquaponics Course

Aquaponics leader Nelson and Pade, Inc., of Montello, Wisconsin, USA, recently hosted three days of hands-on aquaponics learning labs with 30 college students presenting aquaponics business and marketing plans on sustainable ways to grow fish and vegetables.

In a public/private partnership with University of Wisconsin – Stevens Point, Nelson and Pade taught students from across the U.S. about new ways to grow fresh food. Students experienced the company's new state-of-the-art aquaponic greenhouse with tilapia swimming in tanks with floating rafts full of lettuce, herbs, vegetables and fruits.

"Students experienced firsthand a new level of education in aquaponics by enrolling in this first-of-its-kind university course," said Rebecca Nelson, co-founder of Nelson and Pade. "Students are discovering sustainable ways to grow fresh fish and produce to feed a world population that is projected to be 9 billion by 2050."

The course culminated with students presenting their aquaponics business plans and tasting recipes featuring their freshly grown fish and vegetables. On hand were university dignitaries as well as Wisconsin Secretary of Agriculture, Trade and Consumer Protection Ben Brancel and State Senator Luther Olsen.

Nelson and Pade, Inc. regularly offers aquaponics and controlled-environment agriculture training. For more information about aquaponics course contact Nelson and Pade at +1-608-297-8708.

global aquaculture
the alliance



University of Wisconsin-Stevens Point
College of Letters & Science