2015 AQ Summit: Research Update by Mary Ellen Camire

Mary Ellen Camire

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From Pen to Plate- Food Science and Technology Benefit Aquaculture R & D

Mary Ellen Camire, PhD, CFS
School of Food & Agriculture
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Mary Ellen Camire, PhD, CFS Professor

- Understanding how aquaculture practices, processing, and consumer attitudes influence food acceptability.

- Extrusion cooking:
  - Extruded foods and feeds containing seafood.
  - Healthful aquaculture feeds.

- Analytical capabilities:
  - Fatty acids, including omega-3’s
  - Dietary fiber
  - Total antioxidant, phenolic acids, anthocyanins

- Product development:
  - Creation of new food products with high sensory quality and to meet nutrition labeling guidelines.
UM Sensory Evaluation Center

Facilities

• 12 private booths
• SIMS 2000 sensory software
• Kitchens
• Conference room

Services

• Consumer acceptability
  • Central location tests, home use tests
• Overall or characteristic difference testing
• Focus groups
• On-line surveys
• Training employees to do in-house testing
Expertise: Food processing/ Food Process Engineering

- Sea-vegetable processing:
  - Processing & storage effects on physical & chemical attributes of sea-vegetables.
  - Optimization of retention of bioactive compounds and other quality attributes of processed sea-vegetables.

- Seafood allergens:
  - Improved extraction & detection of crustacean allergens in processed foods.
  - Crustacean allergens in compost.
  - Development of hypoallergenic seafood foods using novel processing technologies.
Denise Skonberg, PhD
Associate Professor

• Assessing effects of aquaculture feeds and production practices on product quality:
  – Nutritional and chemical composition
  – Shelf life analyses
  – Physical attributes (texture, color, …)

• Utilization of seafood processing by-products:
  – New food products and functional ingredients

• Developing and evaluating processing technologies for farm-raised seafood
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Food Safety Programs

• Food industry workshops designed to meet Maine seafood processor needs:
  • General commercial sanitation
  • Food Safety Programs mandated by the FDA:
    • Seafood Hazard Analysis Critical Control Points (HACCP)
Food Science
Personalized Outreach

- One on one consulting (phone, email, meetings)
- Facility design assistance/on site visits
- Sanitation program review/guidance
- HACCP plan review/guidance
- Validation studies (seafood)
- Product and process review
Michael G. Murphy, MS
Pilot Plant Manager

• Trial processing and product development services are available.
• Relevant equipment includes:
  • Large-capacity blast freezer
  • Koch smoke house
  • Vacuum tumbler
  • Hobart combination steam and convection oven
  • Latrim belt-driven steam convection cooker
  • Freeze-dryer
Research Partner Services

• Assistance with preparing research grants
  • Grant panel experience
    • MTI
    • USDA/NIFA SBIR and Post-Harvest Food Safety
  • Institutional review compliance
  • Trial processing (products not intended for sale)
  • Analyses of raw and processed products
• Confidential contract research
• Consultation regarding health and structure-function claims
Contacting Us

- Email is best.
- We need at least a month’s notice before grants are due so that we can comply with UM requirements.