

EVALUATING DEMAND FOR OMEGA-3 ENHANCED BROOK TROUT

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The experiment

- Brook trout raised by WVU Aquaculture Farm were fed 2 diets
- 1) Regular commercial fish feed
 - 2) Commercial feed with flax oil shown to increase omega-3 fatty acids in rainbow trout

Marketing study objectives

- 1) How did the flavor of the omega-3 enhanced fish compare to those fed the regular diet?
- 2) Did restaurants prefer brook over rainbow trout?
- 3) Were restaurants willing to pay a premium for brook trout?
- 4) Were restaurants willing to pay a premium for omega-3 enhanced fish?

Why restaurants?

An earlier analysis of WV aquaculture found that "restaurants are considered the number one location where end consumers purchase fish and try new fish and fish products for the first time"

*Logar, C.M., T.G. Ponzurick, K.J. Semmens, and A. Matthews. *Marketing Processed Fish and Fish Products in the Aquaculture Industry: A Supply Chain Analysis*. West Virginia University Extension Service, College of Business and Economics, and Agricultural and Forestry Experiment Station, October 2003.



Vacuum packed brook trout (marked as "red" fish)

Surveys

- Both Omega fish and the control were processed into fillets (pin bones out) at a commercial facility, vacuum packed, and shipped UPS overnight
- Surveys and fish samples were sent to 73 WV and Washington DC area restaurants
 - Names came from WV Collaborative for 21st Century Appalachia and DC seafood distributor
 - Reminder post card, and follow-up survey were mailed
 - 24 returned for 33% response rate
- Surveys (no fish) were sent to 1,892 restaurants in OH, PA, MD, VA, WDC, & WV
 - Names came from mailing list purchased from Dun and Bradstreet
 - Reminder post card, and follow-up survey were mailed
 - 104 returned for 5.5% response rate
- Incentive was a chance to win 1 of 25 \$50 gift certificates for WV products from Gourmet Central in Romney, WV



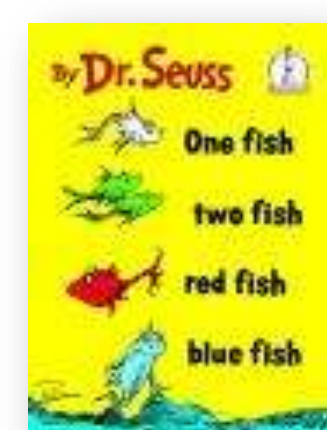
Shipping fish via UPS

Restaurants receiving fish (n=24)

Restaurants did not know which sample was omega-3 enhanced

- Fish sample preference
- 43% picked omega-3 enhanced (red)
 - 24% picked control (blue)
 - 33% no preference

- Flavor and acceptability rankings
- Omega brook trout (red)
 - Flavor 6.625 out of 8
 - Acceptability 6.95 out of 8
 - Control brook trout (blue)
 - Flavor 6.5 out of 8
 - Acceptability 6.85 out of 8



Comments from restaurants receiving fish

- When I hear the word "enhanced" my first reaction is usually not a positive one.
- Red: No question!! Texture softer, more flavorful, sweeter, delicate. Love it – **will buy it!**
- Blue: Fishier, oilier, texture a bit rubberier than "red".
- The red was moist, sautéed and baked. Also retained better flavor. The blue was dry. **I would purchase brook trout if I could find a place that carried the product.**
- I would like to know as soon as possible if this is a product I will be able to purchase.** I am extremely interested in 8-10 oz. Brook Trout fillets.
- Much better than rainbow I'm currently getting in texture, taste, appearance, and overall quality.
- I thought both samples were delicious. I could not tell much difference in either. **I would love to use this product (brook trout).** It would make an interesting menu item! Please keep in touch and tell me how to purchase your product!!! (Madeleine's Restaurant in Morgantown)

Locations of responding restaurants

88% of the responding restaurants that received fish (targeted) were in WV
 43% of those were state park resorts/lodges

- Non-fish-receiving restaurants (large sample)
- 29% WV (22% response rate)
 - 27% VA (4% response rate)
 - 24% MD (4% response rate)
 - 7% WDC (5% response rate)
 - 6% PA (4% response rate)
 - 6% OH (9% response rate)



Differences between targeted restaurants & larger sample

Include brand name info on menu	Menu changes seasonally
63% targeted	67% targeted
32% large sample	34% large sample
Provide production location information on menu	Menu rarely changes
63% targeted	8% targeted
52% large sample	42% large sample
Currently buy from aquaculture farmer	Serve(d) rainbow trout
29% targeted	92% targeted
11% large sample	51% large sample
Willing to buy from aquaculture farmer	Serve(d) brook trout
71% targeted	21% targeted
47% large sample	17% large sample

Average Price of Dinner Entrée



Restaurants were asked to pick products in a choice experiment similar to a purchase decision

Each product in the next eight questions is approximately a 4 to 6 ounce, West Virginia farm-raised, fresh, fillet with pin bones out (PBO). *Please answer each question by putting a "✓" in the box of your preferred choice. It is important that you answer all 8 questions.*

1. Please choose only one of the following (If you would not purchase any of these check here)

<input type="checkbox"/> Brook trout	<input type="checkbox"/> Brook trout	<input type="checkbox"/> Rainbow trout	<input type="checkbox"/> Rainbow trout
	Omega-3 Enhanced		Omega-3 Enhanced
Price: \$6.80 / pound	Price: \$7.30 / pound	Price: \$6.80 / pound	Price: \$7.30 / pound

- 4 prices ranging from \$5.80/pound to \$7.30/pound
Increased in \$0.50 increments
- 5 choices
Brook trout
Brook trout omega-3 enhanced
Rainbow trout
Rainbow trout omega-3 enhanced
No purchase
- Restricted so that omega-3 enhanced always had a higher price than non-omega of the same type fish

Preliminary examination of choice responses

- As expected, omega-3 enhanced preferred to non-enhanced at the same price
- Brook trout preferred to rainbow trout at the same price for the targeted sample of mostly WV restaurants
- Rainbow preferred over brook (at the same price) for the larger group

Is there a market for omega-3 enhanced brook trout that will cover growers' costs?

- Restaurants do not appear to be willing to pay more for omega-enhanced trout

Is there a market for brook trout?

- WV restaurants seem to be interested in a WV-grown brook trout
Especially WV State Park Resorts



Conclusion

Contact WV restaurants and state park lodges to discuss selling them brook trout

