SB

25

Alaska State Legislature

Senator Kim Elton
State Capitol, Room 115
Juneau, Alaska 99801-1182
465-4947 phone ♦ 465-2108 fax

Senator Gary Stevens
State Capitol, Room 103
Juneau, Alaska 99801-1182
465-4925 phone ♦ 465-3517 fax

SB 25
Sponsor Statement

"An Act relating to labeling and identification of genetically modified fish and fish products."

Transgenic foods are those in which the genetic structure has been altered at the molecular level by means that are not possible under natural conditions or processes. There has been widespread concern throughout the world over the largely unknown effects of transgenic, or genetically modified (GM) products on human and environmental health.

In an effort to address concerns raised by consumer, environmental, health, and Alaska fish marketing groups, SB 25 requires Alaska retailers to identify and label foods containing fish and shellfish, or fish and shellfish products that have been genetically modified.

The message that Alaska seafood is more natural than seafood that has been engineered or bred is a highly important marketing tool. This bill, by requiring a differentiation between GM and wild seafood helps highlight Alaska seafood as distinct from GM seafood, thereby doing away with any vagueness that may exist to the consumer when purchasing seafood without labeling, and reinforcing the natural message.

Many GM agricultural products are currently allowed on the U.S. market, and an application submitted by an aquaculture company for the use of a GM, growth-enhanced salmon is pending before the Food and Drug Administration's Center For Veterinary Medicine. The Pacific Fisheries Legislative Task Force *Fish* Review dated December 2004 reports that Aqua Bounty, a biotechnology company with offices in the United States and Canada, is planning to ask Canadian authorities for approval to use GM fish in Canada's fish farms.

Currently, legislation in the European Union, Japan, New Zealand, and Australia requires labeling on foods made from, or containing GM products. SB 25 is similar to legislation introduced in other states, such as Oregon and California, and it comes with the unanimous support of the Joint Legislative Salmon Industry Task Force, a committee comprised of legislators, seafood harvesters and seafood processors.

IOUSE COMMITTEE REPO

(9)

Date Referred to Committee: April 5, 2005 **FURTHER REFERRALS:**

Date of Committee Action: 4/11/05

The RESOURCES Committee considered: **SB 25**

SENATE BILL NO. 25 **GENETICALLY MODIFIED FISH**

"An Act relating to labeling and identification of genetically modified fish and fish products."

Recommends it be replaced with [ ] HCS *or* [ ] CS *for* _____(_____)
For Senate Bills with new title: [ ] Technical Title [ ] New Title: HCR_____ **[ ] Same Title [ ] New Title**

[ ] attach amendments
[ ] add new referral to _____Committee
[ ] Letter of Intent_____Committee

List of Abbrev for Depts.:
ADM
CED
COR
CRT
EED
DEC
DFG
GOV
HSS
LEG
LAW
LWF
MVA
DNR
DPS
REV
DOT
UA

NEW FISCAL NOTES
*Assigned by Chief Clerk's Office

List by Dept(s):	*FN#	Fiscal	Indet.	Zero

PREVIOUS FISCAL NOTES

List by Dept(s):	FN#	Fiscal	Indet.	Zero
LAW	2			✓
DEC	1			✓

Signing with recommendations	Printed Last Name	DP	DNP	NR	AM
	OLSON			✓	
	Gatto				✓
Paul K. Seaton	SEATON	✓			
	Elkins	✓			
	CRAWFORD	✓			
Chair:	KAUFMAN			X	
Chair:	SAMUELS	X			

FISCAL NOTE

STATE OF ALASKA
2005 LEGISLATIVE SESSION

Fiscal Note Number: 1
Bill Version: SB 25
(S) Publish Date: 2/9/05

Revision Date/Time (Note if correction):
Dept. Affected: Environmental Conservation
Title: Genetically modified fish
RDU: Environmental Health
Component: Food Safety and Sanitation
Sponsor: Senator Elton
Requester: (S) Labor & Commerce
Component No.: 2343

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Personal Services	0.0	0.0	0.0	0.0	0.0	0.0
Travel	0.0	0.0	0.0	0.0	0.0	0.0
Contractual	0.0	0.0	0.0	0.0	0.0	0.0
Supplies	0.0	0.0	0.0	0.0	0.0	0.0
Equipment	0.0	0.0	0.0	0.0	0.0	0.0
Land & Structures	0.0	0.0	0.0	0.0	0.0	0.0
Grants & Claims	0.0	0.0	0.0	0.0	0.0	0.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0
CAPITAL EXPENDITURES						
CHANGE IN REVENUES ( )	0.0	0.0	0.0	0.0	0.0	0.0

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts	0.0	0.0	0.0	0.0	0.0	0.0
1003 GF Match	0.0	0.0	0.0	0.0	0.0	0.0
1004 GF	0.0	0.0	0.0	0.0	0.0	0.0
1005 GF/Program Receipts	0.0	0.0	0.0	0.0	0.0	0.0
1037 GF/Mental Health	0.0	0.0	0.0	0.0	0.0	0.0
Other (Specify Type--Do not abbreviate)	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2005) cost: 0.0
Mark this box (X) if funding for this bill is included in the Governor's FY 2006 budget proposal:

POSITIONS

Full-time	0	0	0	0	0	0
Part-time	0	0	0	0	0	0
Temporary	0	0	0	0	0	0

ANALYSIS: *(Attach a separate page if necessary)*

Under current federal rules, genetically modified fish and fish products cannot be used or sold in the United States. Under the current FDA rules, this bill will have no fiscal impact on the department. Should the FDA allow the sale and use of genetically modified fish and fish products in the future, increased inspection and compliance resources will be required to comply with the provision of this bill.

Prepared by: Kristin Ryan, Director
Phone (907) 269-7644
Division: Environmental Health
Date/Time 1/28/05 4:04 PM
Approved by: Kurt Fredriksson
Date
Agency: Department of Environmental Conservation

FISCAL NOTE

STATE OF ALASKA
2005 LEGISLATIVE SESSION

Fiscal Note Number: 2
Bill Version: SB 25
(S) Publish Date: 2/9/05

Revision Date/Time (Note if correction):
Dept. Affected: LAW
Title "An Act relating to labeling and identification of genetically modified fish and fish products."
RDU CIVIL
Component Environmental
Sponsor Senator Elton
Requester Senate Resources Committee
Component No.

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Personal Services						
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0
CAPITAL EXPENDITURES						
CHANGE IN REVENUES ( )						

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type--Do not abbreviate)						
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2005) cost: 0.0
Mark this box (X) if funding for this bill is included in the Governor's FY 2006 budget proposal:

POSITIONS

Full-time						
Part-time						
Temporary						

ANALYSIS: *(Attach a separate page if necessary)*

This bill amends the Alaska Food, Drug, and Cosmetic Act, AS 17.20.040 by adding genetically modified fish or fish product to the list of misbranded food, unless conspicuously labeled or identified as such. Legislation at the federal level already prohibits the sale of any genetically modified foods.

Passage of this legislation will have no fiscal impact on the Department of Law.

Prepared by: Kathryn Daughhetee, Director
Phone 465-3673
Division Administrative Services Division
Date/Time 2/2/05 3:07 PM
Approved by: Kathryn Daughhetee for Gregg D. Renkes, Attorney General
Date 2/2/2005
Agency Department of Law

Alaska Trollers Association
130 Seward St., No. 211
Juneau, Alaska 99801
(907) 586-9400
(907) 586-4473 Fax

April 4, 2005

Representative Tom Anderson, Chair
House Labor & Commerce
Alaska State Legislature
Juneau, AK 99811

Dear Representative Anderson and Committee Members:

ATA supports SB25 and the labeling of genetically modified (GMO) seafood products.

Cold water fish is rich in Omega-3 fatty acids, vitamins and minerals, and eating it is believed to decrease risk of heart disease, cancer, and other ailments. Nationally, the USDA expects Americans to increase their consumption of seafood roughly 30% in coming years, as part of a growing health trend. Many Alaskans are ahead of the curve and we're known for a consumption of salmon and other seafood which exceeds the national average of 15 pounds per year.

Mad cow disease, E Coli, and a host of other food safety issues have captured media attention in recent years. So it just stands to reason that consumers will increasingly want information about where their food comes from, and assurances with regard to its wholesomeness. Specific GMO labeling requirements will accommodate informational needs and provide for public health and well-being.

Fast expansion of the global aquaculture industry has put a great deal more fish on the market. Production is expected to increase even faster if farmers from around the globe are permitted to raise and sell genetically modified fish.

The U.S. Food and Drug Administration (FDA) is now reviewing a petition to allow transgenic Atlantic salmon for commercialization. If approved, the fish could become the first genetically modified animal product on the market for human consumption. This, despite a near total lack of understanding about the human health and ecological effects of the new technology.

SUPPORT LETTERS

In making genetically modified organisms (GMO), scientists change genetic structures to alter select characteristics. For example, a plant may be given a gene that makes it more tolerant to drought, or resistant to an herbicide that kills other species. It might interest you to know that they've even use the gene of a flounder (the fish) to make corn more tolerant to cold weather.

So how big is GMO? Big - and growing.

The United States has about 100 million acres of biotech crops under cultivation and is the largest producer of biotech foods in the world. Over 75 percent of U.S. soybeans and 34 percent of American corn are genetically modified. And, according to a New York Times report in June 2001, nearly all the available seeds for those crops - worldwide - is genetically modified and has been reduced to just a few strains controlled by a handful of companies.

To give you one example of the impact GMO products can have when raised in open spaces, consider Mexico. Despite that country's moratorium on the use of genetically altered corn, scientists in 2001 detected genetically modified DNA in wild maize in the mountains of the state of Oaxaca. Up to 70% of wild Mexican maize now carries transgenes that could only have come from genetically engineered crops. Scientists regularly borrow transgenes from viruses and bacteria, to engineer GMO crops (Nature, Nov. 29, 2001)

Now, through the wonders of technology, scientists have discovered a way to make Atlantic salmon grow twice as fast by inserting genes of other fish species into them. Do you know what the recipe is? Last I heard, a Canadian company named Aqua Bounty was using an Atlantic salmon and inserting the genes of Chinook salmon and Arctic pout. But broad consumer acceptance for this and other GMO food stuffs might not come easy. At least one Canadian province is considering a GMO-free zone. Several countries in the European Union, Africa, South America and elsewhere have banned genetically modified organisms altogether.

With GMO fish, farmers are likely to cut both production time and costs, because genetically modified salmon convert food to energy more efficiently than wild fish. It could mean better profitability for farmers and/or cheaper prices for consumers. Proponents hail the new technology as a way to feed the growing world population.

But there is a raft of questions.

Is this a food product that people want to eat? Will it harm us? Are there hidden costs to the environment and society? How is the public engaged in the

decisions to allow genetically modified foods? Will we be allowed to choose? How will we know them when we see them in the marketplace?

The prospects get particularly worrisome when one considers some of the crops being engineered in the lab. For a worthy medical goal, a U.S. firm is working on corn that includes an anti-spermicidal, but what are the consequences if that ever spreads to food crops?

So, what will be added to GMO salmon? Antibiotics, growth hormones, coloring additives, genes to make them undesirable to nuisance pests? We won't know what's in there unless we ask. And without labeling, it's likely we won't ask, because we won't be able to tell GMO salmon from "real" fish at the seafood counter.

Obviously, the issue of genetically modified organisms, or GMO, has deep and far-reaching implications. The environmental issues surrounding the production of GMO salmon in ocean net pens is of significant concern to Alaska fishermen and has been highlighted by ADFG and groups ranging from environmental watchdogs to the National Academy of Scientists (NAS).

But today we are discussing food labeling, so I will set aside the detailed specifics of those issues and leave you with just a few thoughts about why you should consider supporting GMO labeling here in Alaska.

Credible scientists have stated that human health issues associated with GMO foods are unknown. However, the lack of adequate policy and data is often cited, with the following questions and concerns echoed repeatedly in most reports and articles:

1. There could be an enhanced genetic ability of transgenic fish to absorb environmental toxins, such as mercury which causes nerve damage (Paulson, University of Minnesota).

2. Increased risk of unsafe chemical or biologic agents might enter the food chain through genetically modified organisms (National Academy of Science (NAS), Report to the FDA, 2002).

4. Increased risk of allergic reaction due to ingestion of unknown substances (Food and Agriculture Association (FAO) and World Health Organization (WHO), 2001; NAS, 2002).

5. GMO molecules used to enhance a trait, such as growth or disease resistance, could retain bioactivity after consumption (NAS, 2002).

6. Research suggests strong evidence of antibiotic resistance (New Scientist, Jan. 30 1999).

7. Potential generation of "prions", which are disease producing proteins thought to be responsible for Mad Cow Disease (Commoner, Queens College, City University of New York).

8. GMO foods might violate some religious or cultural dietary rules (NAS, 2002).

9. Regulation and enforcement of animal biotechnology is difficult due to a lack of ethical and regulatory framework for addressing issues unique to GMO foods (NAS, 2002).

10. The responsibilities of federal agencies for regulating animal biotechnology and data collection are unclear, and no established regulatory framework exists for the oversight of scientific research and the commercial application of biotechnology. Nor have the technical capacities of the agencies been identified with respect to addressing potential hazards (NAS, 2002).

The list goes on...

The bottom line is that many scientists, consumers, and even some of our trade partners say not enough is known about genetically modified salmon to OK it for human consumption. ATA agrees.

The FDA is the public body charged with evaluating and approving GMO products. Ironically, because drug laws require secrecy to protect the applicant from competition, the public is excluded from the debate. The FDA does not even reveal what products are being considered for approval, so the public knows about GMO Atlantic salmon only because Canadian firm Aqua Bounty announced it was seeking FDA approval to sell this product in the US.

It's fair to say that genetic modification could be beneficial in some cases, through changed nutritional attributes and improved safety of food products. However, the National Academy of Science has stated that this can only be true IF ...*the changed products [are] labeled in order to appeal to targeted consumers and identifiable to those who might have medical or other reasons to avoid such foods.*

As it stands now, we get more information about what's in a Snicker's bar than what's in farm raised GMO products. Obviously, until recently, most of us didn't even think we needed to ask.

Now we know, and some of us are asking.

I encourage you to support SB 25 and require labeling of all GMO seafood sold in the state.

Thank you for your consideration of this important topic and ATA's point of view. Please feel free to contact me if I can provide additional information or help in any way.

Sincerely,

Dale Kelley

Dale Kelley
Executive Director

THE CENTER FOR
FOOD SAFETY

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January 31, 2005

Senator Kim Elton
State Capitol, Room 115
Juneau, AK 99801-1182

Dear Senator Elton:

The Center for Food Safety is pleased to endorse Senate Bill No. 25 and your efforts for a mandatory labeling requirement to identify genetically engineered (GE) fish and shellfish. Because GE fish are being developed for commercial use, the potential release into the environment and the use of these fish as food is imminent. Therefore, Senate Bill No. 25 would give Alaskan consumers the right-to know whether their seafood is genetically altered.

GE fish present a host of serious risks to humans and the environment. Human health effects include the potential for toxicity, allergenicity, and antibiotic resistance. As for the environmental impacts, the risk of biological contamination from GE fish is particularly acute, since GE fish may be raised in net pens from which they can easily escape and breed with native strains. The harm of such interbreeding would be severe. A Purdue University study concluded that the release of GE fish could cause the extinction of an entire fish species in a matter of a few generations. The National Academy of Sciences also issued a report warning that GE fish that escape could wreck havoc on the environment.

Despite these potentially irreversible human health and environmental risks, there is a profoundly disturbing lack of federal regulation of marine biotechnology. As such, we applaud your leadership on this issue and hope the Alaskan legislature can step into the void by ensuring that consumers are aware of genetically engineered seafood products through a mandatory labeling requirement.

Sincerely,

Tracie Letterman

Tracie Letterman
Fish Program Director

United Southeast Alaska Gillnetters
P.O. Box 23378, Ketchikan, AK 99901 Phone & Fax (907) 247 2471 Email: usa_gillnetters@att.net

January 29, 2005

The Honorable Gary Stevens
The State Senate
State Capitol, Room 103
Juneau, Alaska 99801 Send Via Fax to: 465-3517

Dear Senator Stevens,

The United Southeast Alaska Gillnetters (USAG) is an association of about 150 small business owners who catch salmon by drift gillnetting in Southeast Alaska and market salmon throughout the United States. Many of our members also participate in other fisheries such as crab, shrimp, longline, and dive fisheries. USAG strongly supports SB 25 which requires the labeling of genetically modified (GM) fish and fish products sold in the State of Alaska. We believe the Alaskan consumer wants to know and has the right to know if the fish and seafood products they are considering buying for their families have been genetically modified. This is in part a marketing issue as we believe that Alaska wild-caught seafood is the best and most healthy in the world and the Alaska consumer will choose it over a genetically modified product if they are given that information about the respective products. More than that, some GM fish may have attributes that allow those fish to be raised and brought to market at a price point with which quality wild fish cannot compete. If these GM fish are not labeled, the cost conscious consumer may choose the GM product on the basis of price, whereas if that consumer knew it was a GM product, they may not purchase it.

Thank you for introducing this legislation and for your continuing support for our seafood industry.

Yours truly,

Kenneth Duckett
Executive Director

cc: Senator Elton Via Fax to: 465-2108
Senator Bunde, Chair Senate Labor & Commerce Via Fax to: 465-3871

Southeast Alaska Fishermen's Alliance
9369 North Douglas Highway
Juneau, AK 99801

Phone 907-586-6652 Fax 907-523-1168 E-mail: seafa@gci.net

January 31, 2005

Senate Labor & Commerce Committee
Senator Con Bunde, Chair
Alaska State Legislature, State Capitol
Juneau, AK 99801-1182

RE: Support for SB 25

The Southeast Alaska Fishermen's Alliance supports SB 25, which would require genetically modified fish or fish products to be labeled. The Joint Legislative Salmon Industry Task Force offered unanimous support for this legislation last year although it failed to make it through the process.

It is important that Alaska have this type of labeling law in place prior to the advent of genetically modified fish or fish products make it into the marketplace. Aqua Bounty has already applied to the United States FDA and Canadian officials for the permits to grow genetically modified fish in fish farms. By being proactive on labeling requirements you help differentiation between genetically altered fish or fish products and our natural wild Alaskan fish in the marketplace. This allows us the use of an important marketing tool.

The Southeast Alaska Fishermen's Alliance is a non-profit membership organization located in Juneau representing our members involved in salmon, crab, shrimp and longline fisheries of Southeast Alaska.

Respectfully,

Kathy Hansen
Executive Director

UNITED FISHERMEN OF ALASKA

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January 28, 2005

Senator Thomas Wagoner, Chair
Senate Resources Committee
Alaska State Legislature
State Capitol (Mail stop 3100)
Juneau, AK 99801-1182

Dear Senator Wagoner,

United Fishermen of Alaska supports bill SB 25 relating to the labeling and identification of genetically modified fish and fish products. We believe in proper labeling for all farmed, genetically modified, and wild salmon to provide consumers an informed choice in the marketplace. The foundation for proper labeling practices will greatly benefit Alaska's Commercial Fishing Industry and help promote the finest seafood in the world to Alaskans and visitors.

United Fishermen of Alaska represents 31 Alaska Commercial fishing organizations, and hundreds of individual fishermen and related businesses. We support SB 25 and are strongly against all genetically modified seafood and seafood products. Thank you for your attention to this matter

Sincerely,

Mark D. Vinsel

Mark D. Vinsel
Executive Director

CC: Senator Kim Elton

HOUSE COMMITTEE REPORT

(7)
Date Referred to Committee: March 17, 2005 — FURTHER REFERRALS: Resources

Date of Committee Action: April 4, 2005

The LABOR AND COMMERCE Committee considered: SB 25

SENATE BILL NO. 25 — GENETICALLY MODIFIED FISH

"An Act relating to labeling and identification of genetically modified fish and fish products."

Recommends it be replaced with [ ] HCS or [ ] CS for ______________________ (________)
For Senate Bills with new title: [ ] Technical Title [ ] New Title: HCR_______ [ ] Same Title [ ] New Title

[ ] attach amendments
[ ] add new referral to ___________Committee
[ ] Letter of Intent___________Committee

List of Abbrev for Depts.: ADM, CED, COR, CRT, EED, DEC, DFG, GOV, HSS, LEG, LAW, LWF, MVA, DNR, DPS, REV, DOT, UA

NEW FISCAL NOTES *Assigned by Chief Clerk's Office

List by Dept(s):	*FN#	Fiscal	Indet.	Zero

PREVIOUS FISCAL NOTES

List by Dept(s):	FN#	Fiscal	Indet.	Zero
DEC	1			X
LAW	2			X

Signing with recommendations	Printed Last Name	DP	DNP	NR	AM
[signature]	CRAWFORD	✓			
[signature]	Kott			✓	
[signature]	LeDoux	✓			
[signature]	Rokeberg			✓	
Chair: [signature]	ANDERSON	X			
Chair:					

L&C COMMITTEE REPORT

BIO

BIOTECHNOLOGY
INDUSTRY
ORGANIZATION

Testimony Opposing Senate Bill 25
"An Act relating to labeling and identification of genetically modified fish and fish products"

Submitted by the Biotechnology Industry Organization to the Alaska House Labor & Commerce Committee

April 4, 2005

On behalf of the Biotechnology Industry Organization (BIO), we appreciate the opportunity to submit testimony in opposition to Senate Bill 25, "An Act relating to labeling and identification of genetically modified fish and fish products." BIO strongly supports existing federal requirements for accurate and informative food labels. These labeling requirements communicate information that is relevant to health, safety and nutrition of all food products sold in the United States. State-based labeling requirements that differ from previously established, stringently enforced federal guidelines, provide no value for consumers and only serve to disparage biotechnology foods. In addition, Senate Bill 25 is contrary to existing Alaska state law that calls for conformity with federal food labeling guidelines.

The requirements of Senate Bill 25 contradict existing Alaska state and federal laws. Title 17 of Alaska Statute Law (Sec. 17.20.010) states, "the definitions and standards adopted [by the State] shall conform as far as practicable to the definitions and standards adopted under authority of the Federal Food Drug and Cosmetic Act (FDCA)." The U.S. Food and Drug Administration (FDA) does not require labeling of foods derived from biotechnology (genetically modified food) unless that food differs significantly in terms of safety, nutrition, how the food is used, or the consequences of its use. Senate Bill 25 would establish a threshold for labeling that does not exist in federal statute.

OPPOSITION

The U.S. Food & Drug Administration's labeling guidance requires that a food label must reveal all ***material*** facts about that food. For instance, the FDCA requires that if a biotech food differs significantly from a conventional food in its nutritional or allergenic properties that fact must be disclosed on the label. The FDA has taken a science-based approach in developing this guidance and decided biotech foods do not inherently "present any different or greater safety concern than foods developed by [conventional methods]." FDA uses the principal of "substantial equivalence"—focusing on the final product, not the process used to develop a food product, to determine how it should be labeled. In addition, mandatory labeling requirements that vary from state-to-state would not only conflict with FDA guidelines, but would be costly and confusing to consumers.

Proposals similar to Senate Bill 25 have been struck-down in federal court. In 1996, the Second Circuit Court of Appeals overturned a Vermont law requiring the labeling of milk products from cows treated with biotechnology-derived growth hormone. The Court ruled mandatory labeling of this kind to be unconstitutional forced speech. Following that decision, a number of states, including Alaska (Alaska Stat. § 17.20.013), adopted laws to regulate the voluntary labeling for milk from cows that were not treated with growth hormones. Consistent with FDA policy, these voluntary labeling guidelines require that such labels clearly state that no significant difference has been shown between milk derived from cows that are treated with the growth hormone and those that are not.

Senate Bill 25 proposes a solution to a situation that does not yet exist in Alaska, or in any state. There has yet to be single biotech fish product approved for human consumption by the FDA. Therefore, this legislation proposes to regulate a food product that does not yet exist. Alaska should not preempt federal decision-making on this issue. Rather, if sellers of conventionally-bred fish wish to label their products as such, they are free to do so in a truthful and non-misleading way according to FDA guidelines (www.cfsan.fda.gov/~lrd/biotechm.html#label). Alaska should not force fish breeders to make disclosures that FDA has deemed are not relevant to the health and safety of consumers.

We strongly encourage the House Labor and Commerce Committee members to oppose Senate Bill 25. If you have any questions or would like additional information on this topic, please feel free to contact Patrick Kelly at 202-962-9503 pkelly@bio.org or Dr. Barbara Glenn, Director of Animal Biotechnology at 202-962-6697 bglenn@bio.org. Thank you for your consideration of this important matter.

Respectfully submitted,

Patrick M. Kelly
Vice President
State Government Relations
Biotechnology Industry Organization

The Biotechnology Industry Organization (BIO) represents more than 1,000 biotechnology companies, academic institutions, state biotechnology centers and related organizations in 46 U.S. states and 33 other nations.

BIO members are involved in the research and development of health care, agricultural, industrial, and environmental biotechnology products.

The Seattle Times
seattletimes.com

Tuesday, June 08, 2004, 12:37 A.M. Pacific

Research fuels fear of gene-altered fish

By Sandi Doughton
Seattle Times staff reporter

In a head-to-head battle for food, normal coho salmon lose out to their genetically engineered cousins, says a new study that adds to the controversy over what critics call "frankenfish."

Not only did the aggressive, gene-modified salmon gobble up most of the feed when raised in tanks with ordinary salmon, but they also gobbled up their weaker competitors — including their own type, British Columbia scientists reported in yesterday's online edition of the Proceedings of the National Academy of Sciences.

The results were often dramatic population crashes, with only one or two of the genetically modified fish surviving in tanks that originally held 50 animals, said lead author Robert Devlin of Fisheries and Oceans Canada.

"When food supplies are low, transgenic (genetically modified) fish have a very significant effect on the population," he said, adding the caveat that laboratory experiments may not predict what would happen if bioengineered salmon escaped into the environment.

But that's a question that needs to be answered soon.

Massachusetts-based Aqua Bounty Farms has asked the U.S. Food and Drug Administration for approval to market what could be the first transgenic food fish: Atlantic salmon that grow twice as fast as normal fish. Aqua Bounty hopes to raise its transgenic salmon in coastal net pens in the United States and market the eggs around the world, said Joseph McGonigle, vice president for external affairs. "We are constantly hearing from companies that are interested in it," he said.

Faster-growing salmon would cut costs dramatically for fish farmers and lead to lower prices in the supermarket, McGonigle said.

Consumer groups, commercial fishermen and some scientists say studies such as Devlin's show the potential ecological consequences of unleashing man-made breeds of fish.

PRESS COVERAGE

"We should not be taking a risk like this at a time when native salmon stocks are already in trouble," said Doug Gunan-Sherman, senior scientist at the Center for Food Safety, a consumer group based in Washington, D.C.

enlarge STEVE RINGMAN / THE SEATTLE TIMES

Although gene-modified fish grow much faster than normal coho salmon, they don't get much bigger at maturity, researchers say.

A 2002 National Academy of Sciences report expressed moderate concern that genetically engineered fish might pose risks to consumers if, for example, a person who was allergic to scallops ate fish with a scallop gene spliced into its DNA. But experts agreed that the biggest danger is that some of the gene-modified fish would inevitably escape into the environment.

Hundreds of thousands of Atlantic salmon have escaped into Northwest waters from salmon farms over the past several years when floating pens were ripped apart by storms or marauding sea lions.

The worst-case scenario involving transgenic fish is the "Trojan gene" hypothesis proposed by Purdue University geneticist William Muir: Genetically engineered salmon outcompete normal fish for food and mates, leading to less-hardy hybrids and the eventual extinction of the entire wild population.

McGonigle says the net pens would hold only sterile females, eliminating the possibility that escapees could breed in the wild. Several other studies, including some in Devlin's lab, have shown that the genetically engineered fish aren't likely to survive well outside of captivity because they're more susceptible to disease and oblivious to predators.

"We realize we have no chance of getting approval unless we can clearly demonstrate these fish are completely sterile, and they represent no genetic threat and no behavioral threat, in terms of competition for resources," he said.

Washington's Fish and Wildlife Commission banned genetically engineered fish from marine net pens, but the state has no rules that bar them from land-based tanks or fresh water, said John Kerwin, who manages the state's hatchery program. Oregon has similar restrictions, while California bans the creatures entirely — including the fluorescent Glo Fish, a genetically engineered aquarium fish that went on sale last year.

Devlin's research for the Canadian government is attempting to unravel the possible impacts of genetically engineered food fish before they're approved.

"We're just starting to gather the kinds of laboratory information which we hope will provide us with understanding about these animals," he said.

He works with coho salmon that overproduce growth hormone as a result of genetic tinkering. Aqua Bounty's Atlantic salmon were engineered in a similar way, using genes from chinook salmon and a species called ocean pout.

In both cases, the genetically engineered fish grow much faster than ordinary fish but don't get much bigger at maturity.

At 1 year of age, Devlin's gene-engineered fish are 10 times the size of ordinary coho.

For the study reported yesterday, Devlin and his colleagues manipulated the amount of food available to the fish. When food was abundant, normal and genetically modified fish coexisted well. It was only when

food was scarce that competition turned deadly for the normal fish.

While populations made up only of normal fish were able to ride out food shortages, mixed populations invariably crashed.

But the experiments also revealed another wrinkle: Populations made up of only genetically engineered fish also crashed when food supplies were low.

Does that mean transgenic fish might pose little risk if they escaped into the environment because they would die out when food supplies drop?

It's possible, Devlin said.

"If you had a small population, where the fish couldn't migrate out of the area, transgenic fish might eat themselves out of house and home and there would be no risks," he said.

But on the other hand, if numbers boomed when food was plentiful, the bioengineered fish could devastate normal fish in the cutthroat competition that would ensue.

McGonigle says he hopes to have an FDA ruling within the next two years, but the target date has been pushed back repeatedly.

Because of regulations to protect businesses, the agency's evaluation process is largely secret, leading critics to call for a new system that is open and gives more authority to environmental and wildlife agencies.

"FDA has absolutely no experience with these kinds of issues," said Gurnan-Sherman, the Center for Food Safety scientist. "And we know nothing about what they're doing."

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washingtonpost.com

Salmon Spawn Rainbow Trout

Scientists in Japan have engineered Asian salmon to produce the eggs and sperm of North American trout, an unprecedented bit of reproductive manipulation that may someday allow researchers to recruit common critters to replenish dwindling endangered species.

The team dissected newly hatched embryos of rainbow trout and removed small batches of "primordial germ cells." Those eventually become eggs or sperm in response to signals they receive from the developing fish.

The researchers, from the Tokyo University of Marine Science and Technology, injected those germ cells into newly hatched Pacific salmon embryos. Some of the cells made their way into the developing ovaries and testes of the recipient salmon, where they matured into rainbow trout eggs and sperm.

A year later, the team collected the milt – the could of sperm that make fish release into the water at maturity – of one of those salmon and mixed it with trout eggs. The result was a crop of purebred baby trout, sired by a salmon. (That salmon also produced salmon sperm, which when mixed with trout eggs created hybrid fish that did not survive.)

Other scientists have transplanted primordial germ cells from one fly species to another and from one bird species to another, resulting in the growth of sperm and eggs of one species inside the sex organs of the other. But the new experiment, described in the Aug. 5 issue of the journal Nature, marks the first such success in fish and the first to create progeny in any species.

Rainbow trout are plentiful but the technique could help rare species. For example, salmon take one year to become sexually mature while trout take two, suggesting endangered species may be aided through reproductive by faster-breeding species.

-- Rick Weiss

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Both sides in fight over genetically modified fish are hoping this big one does not get away

By MARK HUME

UPDATED AT 2:21 PM EST

Friday, Dec 10, 2004

VANCOUVER – They are swimming lazily in a few fish tanks right now, but Atlantic salmon that were developed in Canada may soon be the focus of the next big fight over genetically modified food.

To critics, the salmon designed to grow up to six times as fast as ordinary farmed salmon, are freaks of nature – Frankenfish that shouldn't be allowed out of the lab.

Proponents say they're a remarkable creation that will help feed an increasingly hungry world and can reduce the environmental impact of fish farming by producing bigger fish, in less time, with less food.

"There's no question that this is the way things will go ... this is the way salmon and many other fish will be grown in the future," Joseph McGonigle, the vice-president of Aqua Bounty Technologies, said yesterday.

His company, which has offices in the United States and Canada, has developed a fish that has trademark protection. Aqua Bounty has applied to the U.S. Food and Drug Administration for approval to market the salmon and is preparing to make a similar application in Canada, perhaps next year.

The first genetically modified fish approved in North America appeared on the market last year. The GloFishtm, a pet that glows in the dark, was cleared for sale in the United States with little opposition. Some shipments were made to Canada but have stopped pending a review by Environment Canada.

But the AquAdvantage salmon is a more complicated product; it is meant for human consumption, and it could survive in the wild.

"If these salmon get into fish farms, it will only be a matter of time before they get out," the Sierra Club's Vicky Husband said. "All you need is to have one escape and then they are interbreeding with the wild populations. It's horrific. We say absolutely no way to these fish."

Theresa Rothenbush of the Raincoast Conservation Society, said "consumers would be in shock if this fish was to ever get to market."

Mr. McGonigle said much of the criticism he hears is unfair and the Frankenfish label makes him bristle. "It's just silly. This is professional spin-doctoring going on."

AquAdvantage salmon are like any other Atlantic salmon, except for the genetic change that allows them to grow more rapidly, he said.

Has he ever eaten one?

"I have. I've had them smoked. They are absolutely indistinguishable from any other farmed fish. . . They are perfectly good-looking fish. I mean they are normal."

The AquAdvantage salmon were developed by Canadian scientists trying to help farmed Atlantic salmon survive winter. Those experiments, which involved introducing fish anti-freeze protein genes into Atlantic salmon from flounders, led to a growth breakthrough when genes from Chinook salmon (a Pacific species) and pout (a type of cod) were introduced.

In the early stages of life, the AquAdvantage salmon grow four to six times as fast as unaltered fish. They then slow down and approach the normal rate of growth. The early growth spurt could allow fish farmers to get fish to market size in 18 months rather than 36 months.

AquAdvantage salmon are found only in experimental fish tanks in the company hatchery in Prince Edward Island and at Memorial University in Newfoundland. A similar type of genetically modified salmon is also under study in a federal government lab in Vancouver.

Industry leery of genetically altered fish

■ **SALMON:** Would fast-growing "Frankenfish" imperil wild stocks?

By MATT VOLZ
The Associated Press

JUNEAU — Producers of a genetically modified salmon that would speed the fish's growth to maturity expect their nine-year federal application to sell the fish in the United States to be decided within a year.

That has renewed concern among commercial fishermen who, competition aside, wonder what would happen if the genetically modified fish escaped their pens and mingled with wild salmon.

"They show up in rivers in Alaska, they show up in our fishing nets and already we fear Atlantic salmon as an invasive species in our productive salmon spawning waters," said Mark Vinsel of the United Fishermen of Alaska. "When you add in the genetically modified fish, I think the concerns are multiplied."

Genetically modified, or transgenic, fish are already being denounced by fishermen and anti-fish-farming states such as Alaska as unhealthy, uneconomic and dangerous to native species of salmon.

See Page B-2, DESIGNER FISH

DESIGNER FISH: *Altered salmon*

Continued from B-1

"I'd prefer if you'd call it Frankenfish," said Alaska Sen. Kim Elton, a Democrat from Juneau. "We don't know what additional challenges might accrue because people are changing the genetics of fish."

A transgenic fish's genetic structure is changed at the molecular level, in this case to allow a mature salmon to grow from an egg in 14-16 months instead of the 22-30 months it takes wild salmon to grow. If approved, it would be the first genetically modified animal allowed for food consumption in the United States.

The earliest that genetically modified salmon could hit U.S. and Canada markets would be the next decade, after permits for selling and raising the fish in both countries are approved.

Aqua Bounty Technologies, based in Waltham, Mass., is nine years into the application process with the Food and Drug Administration, and spokesman Joe McGonigle said he expects a decision within a year.

FDA spokeswoman Rae Jones acknowledged by e-mail Aqua Bounty's pending application, but said: "We cannot provide any information about if or when it will be approved, nor can we provide any information about where it is in the approval process."

Aqua Bounty plans to sell genetically modified fish eggs to fish farms. McGonigle said the concerns of interbreeding with wild salmon are unfounded — sterilized transgenic fish could actually reduce the chance of an invasive species hurting the wild salmon populations of the Pacific Northwest.

"You're sitting at the epicenter of hostility to salmon farming," McGonigle said of Alaska. "The single most significant issue is the risk of interbreeding. The only way you can control that is to sterilize the fish."

Sterile or not, Vinsel said, an escaped transgenic fish would still be competing with wild fish for food and to mate.

"I can't honestly take that seriously," McGonigle said, saying the number of wild salmon that return to native streams outnumber the farmed fish many times over.

McGonigle said he does not expect the genetically modified salmon to compete directly with wild salmon in the market, but contends the products can coexist. Consumer and price tiers will likely be established, with wild salmon at the top and the less expensive and more plentiful transgenic fish at the bottom.

The genetically modified salmon would make it easier for fish farmers to have better control of their stocks and even out periods of gluts and scarcity, McGonigle said.

"Nobody wants to see the prices fall, not to where it becomes difficult for people to make a living," he said.

In Alaska, lawmakers are already preparing for the introduction of genetically modified fish to the market. A bill by Elton and state Sen. Gary Stevens, a Republican from the fishing community of Kodiak, would require labeling genetically modified fish.

Elton says his proposal is complementary to past legislation that required farmed fish to be labeled in Alaska restaurants and shops. Those bills were products of a legislative salmon task force for which the goal was to protect one of the state's biggest industries.

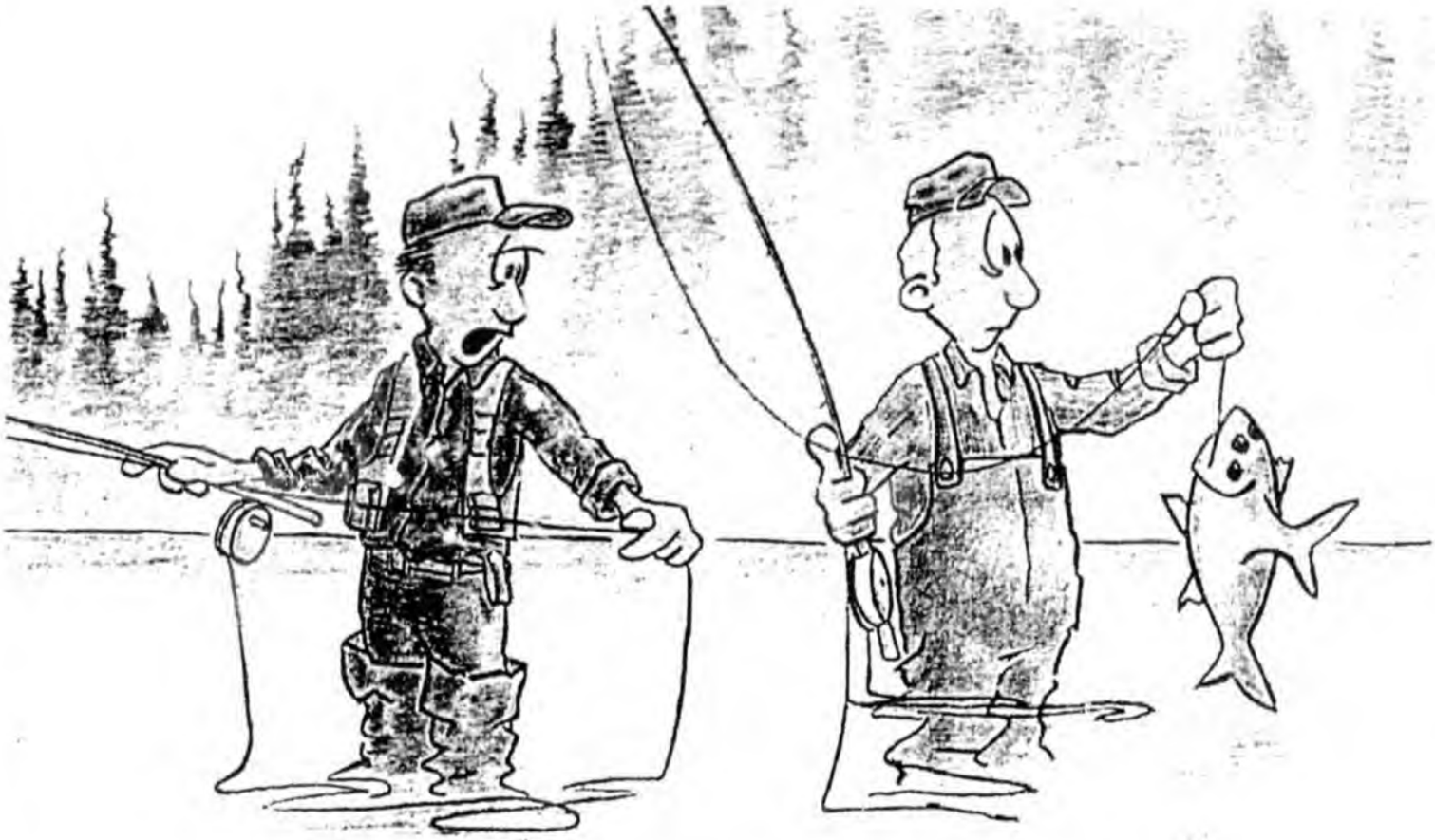
"Hopefully, it sets a pattern," Elton said. "As frequently happens, if one state does something, another state says, 'That's a good model.'"

Elton and Stevens' bill has passed the state Senate and is being considered by the state House.

Aqua Bounty says foods produced through biotechnology are not required to be labeled unless an allergen is introduced, the nutritional content is altered or the result of modification is a new food item.

But the company plans to require its licensees to label their fish, saying consumers are more likely to accept the fish if they have the facts, and for brand recognition.

"Branding is essential for our fish, or for Alaska or for anyone else," McGonigle said.



"THAT MUST BE ONE OF THOSE FARMED SALMON
WE'VE BEEN HEARING ABOUT."

A SMILE