

FW: Questions Re: Rendering of Salmon Byproduct (TRRi)

**This material is part of a collection that documents the harassment, discrimination, and retaliation perpetrated against Alaska's women research scientists by their supervisor, with full knowledge (and arguably, "tacit approval") of their federal employer, the USDA Agricultural Research Service (ARS)**

From: "Bower, Cindy" <Cindy.Bower@ars.usda.gov>  
Subject: FW: Questions Re: Rendering of Salmon Byproduct (TRRi)  
Date: Thu, May 6, 2010 7:57 am  
To: bower@sfos.uaf.edu

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From: Pantoja, Alberto  
Sent: Thursday, May 06, 2010 7:27 AM  
To: Heather Hardcastle  
Cc: Bower, Cindy; Bechtel, Peter; Contento, Janis; Kirsten Walker; Kirk Hardcastle; Len Peterson; Orts, Bill; McHugh, Tara  
Subject: RE: Questions Re: Rendering of Salmon Byproduct (TRRi)

Heather

I understand that Peter provided some information on UAF efforts in this direction. Bill/Tara feel free to jump into the conversation.

alberto

From: Heather Hardcastle [<mailto:salmongal@mac.com>]  
Sent: Monday, May 03, 2010 12:57 AM  
To: Pantoja, Alberto  
Cc: Bower, Cindy; Bechtel, Peter; Contento, Janis; Kirsten Walker; Kirk Hardcastle; Len Peterson; Heather Hardcastle  
Subject: Questions Re: Rendering of Salmon Byproduct (TRRi)

Hi All,

Thank you, Alberto, for introducing all of us. We look forward to collaborating with USDA ARS in the future, especially with regard to salmon byproduct utilization.

Peter and Cindy, as Alberto (and Kirk) may have mentioned to you, myself and another Juneau "fisherman's daughter," Kirsten Walker, are completing our AEA-funded research focused on the feasibility of biodiesel production from Juneau area waste vegetable oil and salmon byproduct. As part of this feasibility study, we've experimented with byproduct stabilization and oil extraction ourselves, as well as asked our consultants at Pacific Biodiesel Technologies to help us test several aspects of salmon oil-based biodiesel. We're also currently

completing cost analyses aimed at determining the economic and energetic costs associated with various fisheries byproduct collection and stabilization methods--and would like to understand the costs involved with rendering salmon byproduct, as well.

We've read about your past work with salmon oil as a biodiesel feedstock, Peter, as well as the research of Professors Sathivel and others. We've found your insights helpful, and we're wondering if you or Cindy (or someone else you know) can help us with the questions below. We're having a tough time getting a handle on several aspects of the salmon byproduct rendering process.

--We understand that it may only make sense to render when one has access to a very large amount of salmon byproduct. However, can the rendering process be scaled down dramatically when a plant will only render 12-25 million pounds of salmon "waste" annually (with over 80% of this byproduct generated June-August)?

--We're trying to estimate the capital and operating costs of a [small] rendering facility that would process the above approximate byproduct poundage and wonder if you know how we might calculate/estimate such costs? Related to this question, we're also wondering how long it might take to render salmon heads/skin/frames/viscera (and especially the heating portion of the process)?

--Finally, with our rather rudimentary oil extraction methods, we achieved a ~3% oil yield from the above salmon parts. We've read that this yield may be as high as almost 7% with the use of classic rendering equipment, including a centrifuge. What approximate oil yield from salmon heads/skin/frames/viscera do you think we can expect with traditional high-heat rendering practices?

We thank you for your time and help!

Best regards,

Heather and Kirk (and Kirsten)

On May 1, 2010, at 10:28 AM, Pantoja, Alberto wrote:

Peter/Cindy

Heather/Kirk Hardcastle run an operation in Juneau and have interest in fish by-products research, they have expressed interest in fish composting/fermentation/preservation/ecofuels. Kirk is the one that visited us last Friday. They are conducting interesting research projects in their area and are open for collaboration. Below their info.

Heather Hardcastle

TAKU RENEWABLE RESOURCES, INC.

Wild Alaska Salmon as Works of Art

DBA: Taku River Reds

DBA: Fishermen's Daughters Ecofuels

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Thanks

alberto

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**Attachments:**

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