

Hare, Lynette E AGRI:EX

From: Okrainetz, Glen R ENV:EX
Sent: Wednesday, May 23, 2018 12:07 PM
To: Marty, Gary D AGRI:EX
Subject: RE: PRV RFP

Yes Gary we did receive a report and it will likely be posted in June.

I will send you a copy when it is posted.

Cheers

Glen

From: Marty, Gary D AGRI:EX
Sent: Wednesday, May 23, 2018 10:54 AM
To: Okrainetz, Glen R ENV:EX
Subject: RE: PRV RFP

Hi Glen,

Would you be able to update me on this process? Has a report been received? If so, are you able to send me a copy (or point me to the web site where it is available publicly)?

Thanks.

Best regards,

Gary

Gary D. Marty, Fish Pathologist
Animal Health Centre
Ministry of Agriculture
1767 Angus Campbell Rd.
Abbotsford, BC, V3G 2M3
604-556-3123

From: Okrainetz, Glen R ENV:EX
Sent: Friday, February 2, 2018 2:57 PM
To: Marty, Gary D AGRI:EX
Subject: PRV RFP

As we discussed.

Many Thanks Gary.

Glen

Hare, Lynette E AGRI:EX

From: Bilawchuk, Maureen ENV:EX
Sent: Thursday, May 24, 2018 11:22 AM
To: Marty, Gary D AGRI:EX
Cc: Okrainetz, Glen R ENV:EX
Subject: GARY - thank you and question

Thank you for chatting with me yesterday Gary. It was very helpful.
I appreciate all the time you spent with me.

Glen has asked me to **confirm if you or AGRI will be preparing an IN for your minister** on the either the Chinook paper or fish processing sector?

These were the take away messages from our discussion. Do I have things correct? Couple of key things from the Chinook paper:

- the study presented was not a controlled study
- the prevalence of jaundice is very low
- the study did not show that PRV cause the jaundice (syndrome)
- the paper does not add any additional knowledge to risk assessment

A few general statements which may be helpful to ROB (Authorizations):

- wild fish have more parasites than farmed fish
- there is a greater threat releasing offal from wild fish than farmed fish (in terms of wastewater)
- although all farmed fish have PRV – there is more of a threat releasing untreated wild fish guts in the waste stream
- AGRI support the processing of fish meal by regulation.

Glen will let you know when the Science review paper is posted on ENV's site (going through approval process now).

Thank you again,
Maureen

Hare, Lynette E AGRI:EX

From: Bilawchuk, Maureen ENV:EX
Sent: Thursday, May 24, 2018 12:30 PM
To: Marty, Gary D AGRI:EX
Cc: Okrainetz, Glen R ENV:EX
Subject: RE: GARY - thank you and question

Wow ☺ – that is supper clear Gary. Thank you for the input.
Maureen

From: Marty, Gary D AGRI:EX
Sent: Thursday, May 24, 2018 12:25 PM
To: Bilawchuk, Maureen ENV:EX
Cc: Okrainetz, Glen R ENV:EX
Subject: RE: GARY - thank you and question

Hi Maureen,

Thanks for calling me yesterday. An important part of my job as a fish pathologist is providing government and the public with reliable information about fish health so that they can make informed decisions. I need to clarify that my role is to provide information, but I do not make policy decisions.

See my comments/responses to your summary below (in purple):

From: Bilawchuk, Maureen ENV:EX
Sent: Thursday, May 24, 2018 11:22 AM
To: Marty, Gary D AGRI:EX
Cc: Okrainetz, Glen R ENV:EX
Subject: GARY - thank you and question

Thank you for chatting with me yesterday Gary. It was very helpful.
I appreciate all the time you spent with me.

Glen has asked me to **confirm if you or AGRI will be preparing an IN for your minister** on the either the Chinook paper or fish processing sector?

GDM - I have not been asked to provide a summary; I cannot speak for other ministry personnel.

RE: Di Cicco E, Ferguson, HW, Kaukinen KH, Schulze AD, Li S, Tabata A, Günther OP, Mordecai G, Suttle CA, and KM Miller. Accepted for publication 23 April 2018. The same strain of Piscine orthoreovirus (PRV-1) is involved with the development of different, but related, diseases in Atlantic and Pacific Salmon in British Columbia. FACETS. DOI 10.1139/facets-2018-0008

These were the take away messages from our discussion. Do I have things correct? Couple of key things from the Chinook paper:

- the study presented was not a controlled study. Correct
- the prevalence of jaundice is very low Staff with Creative salmon (a company that farms organic Chinook salmon) tell me that every year about 2 fish per 1,000 die with jaundice; if we expand the definition to also

include fish with anemia but not jaundice, this number might go up to 6 fish per 1,000. Independent government audit data are consistent with this information. This information about low jaundice prevalence on the Chinook salmon farms is not included in Di Cicco et al. (2018).

- the study did not show that PRV cause the jaundice (syndrome) **Correct**
 - the paper does not add any additional knowledge to risk assessment The paper provides evidence that PRV is abundant in some cases of jaundice. However, I have published that PRV can also be abundant in wild Chinook salmon without jaundice (Marty et al. 2015). Also, controlled laboratory study reports transmission of PRV from jaundiced fish, without development of jaundice in the naïve recipient fish Garver et al. 2016). Therefore, the role of PRV in jaundice development is unknown. Di Cicco et al. (2018) does not cite either Marty et al. (2015) or Garver et al. (2016)
1. Garver, K.A., G.D. Marty, S.N. Cockburn, J. Richard, L.M. Hawley, A. Müller, R.L. Thompson, M.K. Purcell, and S. Saksida. 2016. Piscine reovirus, but not jaundice syndrome, was transmissible to Chinook salmon, *Oncorhynchus tshawytscha* (Walbaum), sockeye salmon, *Oncorhynchus nerka* (Walbaum), and Atlantic salmon, *Salmo salar* L. J. Fish Dis. 39:117-128. DOI: 10.1111/jfd.12329
 2. Marty, G.D., D.B. Morrison, J. Bidulka, T. Joseph, and A. Siah. 2015. Piscine reovirus (PRV) in wild and farmed salmonids in British Columbia, Canada: 1974 - 2013. J. Fish Dis. 38:713-728. DOI: 10.1111/jfd.12285

A few general statements which may be helpful to ROB (Authorizations):

- wild fish have more parasites than farmed fish **Correct**
- there is a greater threat releasing offal from wild fish than farmed fish (in terms of wastewater) **Correct for salmon in BC**
- although nearly all farmed fish have become infected with PRV at some point during the marine phase of their growth, by the time they are harvested, they are probably not very infectious; compared to releasing offal from farmed salmon, there is probably more of a threat releasing untreated wild fish guts in the waste stream
- AGRI support the processing of fish meal by regulation. I am not involved in regulation, so I cannot comment specifically on this one. Is what is meant here "harvest waste" rather than "fish meal"? Regardless, untreated animal wastes are a biosecurity hazard, and I recommend that any such wastes be treated to minimize any pathogen load before those wastes are released in the environment.

Glen will let you know when the Science review paper is posted on ENV's site (going through approval process now).

Thank you again,
Maureen

Let me know if I can provide additional information.

Best regards,

Gary

Gary D. Marty, D.V.M., Ph.D., Diplomate, A.C.V.P.
Fish Pathologist
Animal Health Centre
Ministry of Agriculture
1767 Angus Campbell Rd.
Abbotsford, BC, V3G 2M3
604-556-3123

Hare, Lynette E AGRI:EX

From: Carswell, Barron AGRI:EX
Sent: Thursday, June 7, 2018 4:56 PM
To: Marty, Gary D AGRI:EX
Subject: Re: PRV science review

Hi GArY

Thanks for the edits...but I think the document is the final version that will be posted soon.

Cheers
B

From: Marty, Gary D AGRI:EX
Sent: June-07-18 2:20 PM
To: Carswell, Barron AGRI:EX
Subject: Re: PRV science review

Hi Barron,

Thanks for sending this. I had not yet seen it.

I am in the process of reading through the document. I notice several sections that could benefit from editing for clarity, and some information that is incorrect; for example:

p. 10 of 51, top "This practice involves trained and certified professionals (in Canada accreditation is through the American Society for Clinical Pathology; ASCP) to distinguish HSMI from similar indications such as pancreatic disease or salmon rickettsia (Kongtorp et al., 2004a)."

Suggested edit: "... (in Canada, veterinary pathologists can be certified through the American College of Veterinary Pathologists; ACVP)..."

ASCP is for human pathologists, not veterinary pathologists.

This document might be scrutinized by the press. Is there an option for corrections before it is released?

Best regards,

Gary

From: Carswell, Barron AGRI:EX
Sent: June-07-18 12:16 PM

To: Marty, Gary D AGRI:EX
Subject: Fw: PRV science review

Hi Gary,

I don't know if you have seen this yet , if not here it is. Note Glen's comment on confidentiality ..I imagine it will be released publically soon.

Cheers
B

From: Okrainetz, Glen R ENV:EX
Sent: June-07-18 8:10 AM
To: Carswell, Barron AGRI:EX
Subject: RE: PRV science review

And here is the report. Please treat as confidential and internal to government for now.

Thanks.

Glen

From: Okrainetz, Glen R ENV:EX
Sent: Friday, June 1, 2018 10:55 AM
To: Carswell, Barron AGRI:EX
Subject: PRV science review

Barron

Here is the IN we prepared. I am told that I should be able to share the full report with you early next week.

Cheers
Glen

Glen Okrainetz
Director, Clean Air
A/Director, Integrated Pest Management and Industry

Phone: 778-698-4903

Hare, Lynette E AGRI:EX

From: Jim Powell <jim.powell@cahs-bc.ca>
Sent: Wednesday, July 4, 2018 4:45 PM
To: Marty, Gary D AGRI:EX; Ahmed Siah
Subject: Re: board certification for veterinary pathologists

Thanks Gary. Is it worthy of an erratum?

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On Wed, Jul 4, 2018 at 2:50 PM -0700, "Marty, Gary D AGRI:EX" <Gary.Marty@gov.bc.ca> wrote:

Hi Ahmed and Jim,

I see that the report "Piscine Orthoreovirus (PRV) in Processing Plant Wastewater: A Review of Risk Factors for Wild Pacific Salmon" is now available to the public:

https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/reporting/reporting-documents/environmental-enforcement-docs/fish-processing-compliance-audit/prv_in_wastewater_bc_cahs.pdf

I can see that preparing this report took a lot of work to put together in a short time frame. I noticed one thing in the report that I could point out that might help in the future: veterinary pathologists are certified by the **American College of Veterinary Pathologists (ACVP)**, not the American Society for Clinical Pathology (ASCP).

I am not sure, but I think that ASCP certifies medical pathologists.

Best regards,

Gary

Gary D. Marty, D.V.M., Ph.D., Diplomate, A.C.V.P.

Fish Pathologist

Animal Health Centre

Ministry of Agriculture

1767 Angus Campbell Rd.

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Hare, Lynette E AGRI:EX

From: Marty, Gary D AGRI:EX
Sent: Thursday, July 5, 2018 8:34 AM
To: 'Jim Powell'; 'Ahmed Siah'
Subject: RE: board certification for veterinary pathologists

Hi Jim,

I had an opportunity to preview the report before it was released to the public, and I pointed out this (and a few other things that would benefit from correction), but the folks in charge were not interested in any changes to the report. Whether you pursue an erratum is up to you (it might be more confusing than helpful at this point).

Best regards,

Gary

From: Jim Powell [mailto:jim.powell@cahs-bc.ca]
Sent: Wednesday, July 4, 2018 4:45 PM
To: Marty, Gary D AGRI:EX; Ahmed Siah
Subject: Re: board certification for veterinary pathologists

Thanks Gary. Is it worthy of an erratum?

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Best regards,

Gary

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Fish Pathologist
Animal Health Centre
Ministry of Agriculture

Hare, Lynette E AGRI:EX

From: Marty, Gary D AGRI:EX
Sent: Wednesday, July 4, 2018 2:50 PM
To: 'Ahmed Siah'; 'Jim Powell'
Subject: board certification for veterinary pathologists

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Best regards,

Gary

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