From: Zabek, Chris AGRI:EX
To: Hueppelsheuser, Tracy AGRI:EX
Subject: Flies and mink farm
Date: June 13, 2019 1:57:04 PM

Hi Tracy,

I'm visiting a mink farm [s.79] on Monday at 11:00 as the result of a fly complaint. If you're interested in coming along you're very welcome. This is my first opportunity to visit a mink farm.

Regards,
Chris

Chris Zabek | Regional Agrologist
BC Ministry of Agriculture | p: 604-556-3045 | f: 604-556-3030
1-888-221-7141 www.gov.bc.ca/agriservicebc

From: Hueppelsheuser, Tracy AGRI:EX
To: Zabek, Chris AGRI:EX
Subject: flies
Date: August 2, 2019 12:24:13 PM

Some fly information. Lesser house flies go to manure, but also vegetable/organic and food waste.

https://en.wikipedia.org/wiki/Lesser_house_fly

http://ipm.ucanr.edu/PMG/PESTNOTES/pn7457.html

I got the flies s.22 These are definitely lesser house flies.

--Tracy

Tracy Hueppelsheuser
Entomologist, Plant and Animal Health Branch
British Columbia Ministry of Agriculture
1767 Angus Campbell Road,
Abbotsford, British Columbia, V3G 2M3
Ph: 604-556-3031
Tracy.Hueppelsheuser@gov.bc.ca

Smid, Claire AGRI:EX

From: Hueppelsheuser, Tracy AGRI:EX
Sent: September 4, 2019 2:32 PM
To: Sutherland, Kim AGRI:EX; Geesing, Dieter AGRI:EX
Subject: FW: Lesser House Fly
Attachments: Key to Lesser House Fly Survey Map.pdf; Lesser House Fly Number Estimate.xls; Fly-Control-Mink-Fact-Sheet-2013_FINAL.pdf; IMG_0112.jpg; Lesser House Fly Survey Map.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Hello, Kim and Dieter, this is some information about the area (the neighbourhood fly survey) that the complainant has gathered.

--Tracy

From: s.22
Sent: Monday, August 19, 2019 11:42 AM
To: Hueppelsheuser, Tracy AGRI:EX
Subject: Lesser House Fly

Hi Tracy,
s.22

Please note that this is being sent from my gmail address as it is easier for us.

We are looking forward to you visiting the mink barn and we would appreciate a visit to our premises as well.

We have been investigating the situation in the following ways (please refer to attachments):

- neighbourhood lesser house fly survey reflected in the attached map and key
- conservative approximation of lesser house fly numbers at the mink barn based on Chris Zabek's personal observation that fly numbers during his visit to the mink sheds were similar to those observed at our property
- fly numbers on our back porch: fly strip photo: at least 120 flies on the strip after 40 minutes
- we are attempting to determine what defines best practice for pest control in the BC mink industry; Nova Scotia document attached; awaiting further information from Julie Hughes at Plant and Animal Health (Compliance, Operations and Data officer)

As we are sure you are aware, this is a time sensitive issue given that it is currently "fly season". We feel it is imperative the situation is assessed as soon as possible in order to avoid a similar disaster for our neighbourhood next year. We appreciate your assistance.

s.22

From: Hueppelsheuser, Tracy AGRI:EX
To: Zabek, Chris AGRI:EX
Subject: FW: flies
Date: August 2, 2019 10:13:59 AM

Hi Chris, I just received a call from s.22 He has flies. There is a mink farm nearby—he is not blaming the farm at this point. Based on his description of the flies, I suspect lesser housefly. He is bringing a sample today for me. Sounds like they have them every year, from early summer to fall.

I think it would be prudent to connect with the mink farmer asap and see how his fly situation is. I do not have the farm name but we can easily find it in our licensing info.

--Tracy

From: Hueppelsheuser, Tracy AGRI:EX
Sent: Friday, August 2, 2019 9:54 AM
To: s.22
Subject: flies

s.22 thanks for your call. please bring in your fly samples for me to look at. Please submit as a research sample at the Animal Health front desk (use the plant health form as you have done before). There will be no charge. I will let the front desk know you are coming.

--Tracy

Tracy Hueppelsheuser
Entomologist, Plant and Animal Health Branch
British Columbia Ministry of Agriculture
1767 Angus Campbell Road,
Abbotsford, British Columbia, V3G 2M3
Ph: 604-556-3031
Tracy.Hueppelsheuser@gov.bc.ca

From:	Zabek, Chris AGRI:EX
To:	Zabek, Chris AGRI:EX
Subject:	FW: Fly info; complainant site visit
Date:	May 25, 2020 3:44:31 PM

From: Zabek, Chris AGRI:EX
Sent: June 26, 2019 1:44 PM
To: s.79
Subject: Fly info; complainant site visit

s.79

Tracy provided a bit more fly information as follows:

Nuisance flies, California
http://ipm.ucanr.edu/PMG/PESTNOTES/pn7457.html

Wikipedia has a decent quick overview of this fly
https://en.wikipedia.org/wiki/Lesser_house_fly

factsheet from Nova Scotia. 2013.
https://www.perennia.ca/wp-content/uploads/2018/04/Fly-Control-Mink-Fact-Sheet-2013_FINAL.pdf

--Tracy

I visited the homes of two complainants s.22 earlier this week. The predominant fly species observed was also the lesser house fly. I didn't find any hotspots of fly breeding habitat/activity on their properties. I estimated that at any point in time during my visit there were approximately 1 to 2 dozen flies flying within my view as I walked around the properties. While there may be other fly sources in the neighbourhood it is likely that at least some of the flies are coming from your ranch.

I discussed with the complainants our observations on your ranch i.e. No obvious hotspots of fly breeding activity; the control measures you're using; the manure management you employ; keeping grass mowed short; addressing wet spots. I also told them that you are already utilizing the most common fly control practices we might have suggested. Finally, I also discussed the *Farm Practices Protection Act* as well as the formal complaint process to the Farm Industry Review Board, should the complainants choose to go that route.

The only additional measure Tracy and I discussed that you might consider is to plant an evergreen vegetative buffer (cedars) along the edge of your property to help deter fly movement. This, of course, would be a voluntary measure on your part and would not necessarily stop all future

complaints.

Thanks for your cooperation in talking with us and taking us through the ranch. If anything else comes up I'll give you a shout. If you have any questions, don't hesitate.

Regards,
Chris

Chris Zabek | Regional Agrologist
BC Ministry of Agriculture | p: 604-556-3045 | f: 604-556-3030
1-888-221-7141 www.gov.bc.ca/agriservicebc

KEY TO LESSER HOUSE FLY MAP

Lesser house flies PRESENT iIN LARGE NUMBERS at the following addresses:

s.79

1. s.79
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.

Lesser house flies NOT PRESENT at the following locations:

15. s.79
16.
17.
18.

Withheld pursuant to/removed as

s.79

From: Zabek, Chris AGRI:EX
Sent: November 1, 2019 11:13 AM
To: Geesing, Dieter AGRI:EX
Subject: RE: Mink Farm Composing follow-up

s.22

Cheers,
Z

From: Geesing, Dieter AGRI:EX
Sent: November 1, 2019 11:11 AM
To: Zabek, Chris AGRI:EX
Subject: RE: Mink Farm Composing follow-up

Agreed. I have not seen any other mink farms and no idea what is "normal". They have a second farm and he said they are doing it the same way without complaints there.
Regardless, the more I think about it, the more I believe it should be that big of a thing to remove the droppings daily. Rather than trying to tinker around with chemicals, he may just as well collect the stuff and compost it. Beside that dairy model I described, something like a small street sweeper may already do the job. Since they feed the animals anyways every day using a small vehicle, they may just as well add an implement. it may cost perhaps 100 K but if it ends up with a complaint and a lawyer, that is recouped in six months.

s.22

Regards,

Dieter
604-556-3048

From: Zabek, Chris AGRI:EX
Sent: Friday, November 1, 2019 9:50 AM
To: Geesing, Dieter AGRI:EX
Subject: RE: Mink Farm Composing follow-up

Thanks Dieter. I agree, it's a tricky situation. I, too, didn't find any obvious hot spots/red flags. My thought was that given the volume of manure under pens and in storage a low level of 'background' fly breeding across the operation could be significant. Leaves the producer with the difficult decision of what is a normal mgmt approach in his particular situation.

Cheers,
Z

From: Lussier, Jason AGRI:EX <Jason.Lussier@gov.bc.ca>
Sent: October 31, 2019 12:50 PM
To: Geesing, Dieter AGRI:EX <Dieter.Geesing@gov.bc.ca>
Cc: Mori, Nadia AGRI:EX <Nadia.Mori@gov.bc.ca>; Poon, David AGRI:EX <David.Poon@gov.bc.ca>; Hughes, Marie Julie

AGRI:EX <MarieJulie.Hughes@gov.bc.ca>; Hueppelsheuser, Tracy AGRI:EX <Tracy.Hueppelsheuser@gov.bc.ca>
Subject: RE: Mink Farm Composing follow-up

Thanks for the update Dieter. I've cc'ed Julie who has been speaking with the complainant and Tracy who has also done a site visit to assess the fly situation.

Julie- please keep me updated on how your conversation with the complainant goes and let me know if you have any questions.

An Environmental Farm Plan (EFP) may be a good step to consider.

Regards

Jason M. Lussier, M.Sc. P.Ag | Regional Team Lead (Coast)
B.C. Ministry of Agriculture | Abbotsford
Jason.lussier@gov.bc.ca|Office: 604.556.3144 |Cell: 604.226.7752

From: Geesing, Dieter AGRI:EX <Dieter.Geesing@gov.bc.ca>
Sent: October 30, 2019 5:23 PM
To: Lussier, Jason AGRI:EX <Jason.Lussier@gov.bc.ca>
Cc: Mori, Nadia AGRI:EX <Nadia.Mori@gov.bc.ca>; Poon, David AGRI:EX <David.Poon@gov.bc.ca>
Subject: RE[s.79] Farm Visits availability

Hi Jason,

So I went to the mink farm. An interesting operation. I admit that today (no rain for days, cold) is not the day you would see the manifestation of major environmental issues, and besides, the operation is slowly winding down for the year. So my observations have to be seen in that context. However, I could not identify any major red flags. The place looks clean, well-organized, no rubbish, no signs of spill or puddling, etc. And, of course there were no flies today which was to be expected but I can imagine that it can be a problem there.

The owner is not composting but only storing the mink manure. I discussed the various options he has to compost the material, and he showed interested in particular when I estimated the money he could make from it. However, I do not believe that the manure storage is the dominant source of the flies. Even though composting will effectively destroy flies, the flies have already bred numerous cycles in the mink barns. The mink manure is high in moisture (but not liquid) and nitrogen rich material - so ideal for flies – and it sits in the barns for at least 4 months. The use of lime and insecticides has been tried but does not seem to work effectively. Frequent removal, (that means probably every day since flies can hatch in 12 – 24 hours on warm days) and then composting will probably be the best way - but considering the size of the operation, it will be daunting work. Does not seem to be the best option.

However, the least he needs to do, in my opinion, is to reduce the moisture and abate ammonia in the manure as fast as possible to minimize fly breeding. I proposed to test spreading out the manure thinly and potentially treating it with zeolite. This could be done at the same time the animals are fed. Zeolite is quite successfully used in horse barns but also for other pet litter. He agreed to try it out on a few of his barns.

Next level would be potential technical options like, for example, a self-cleaning gutter – the principle is similar to what is used in dairy barns, but much smaller. This has, of course, major financial implications.

In conclusion, from what I saw and heard today, I suspect that managing the manure immediately after is produced may be the key to substantially reduce the number of flies. A classic case of land-use conflict where residents move into an agricultural area without considering potential nuisances from farming

activities. Another, more immediate neighbor seems to complain more about the odor (but putting up with it) than the flies.

Btw, I also discussed with him the benefits of an EFP and he appears to be quite open to that idea.

Regards,

Dieter
604-556-3048

Smid, Claire AGRI:EX

From: Zabek, Chris AGRI:EX
Sent: August 15, 2019 4:11 PM
To: Hueppelsheuser, Tracy AGRI:EX
Cc: Lussier, Jason AGRI:EX
Subject: s.79

Hi Tracy,

Thanks for the heads-up about the complaint and the fly ID.

Jason and I visited both the farm and the complainant s.22 yesterday. The farm is a larger and newer mink ranch than the one you and I went to earlier this year in s.79 The site is well-drained, no obvious wet spots around the barns. Manure is cleaned out from under the cages every 3 weeks (he doesn't like to do it more frequently as it agitates the mink and he ends up with more mortalities and health issues) and stored in a covered facility. Feed preparation and storage was clean. His fly control program includes contact spraying manure under the pens and in the storage facility as well as fogging within the barns. Some of the water cups were leaking but overall he was reasonably on top of preventing wet spots and dealing with those that arose.

Lesser houseflies were the vast majority of flies observed on the farm. Relative level of flies in the barns was similar to what we observed in the s.79 Flies seemed worst in the manure storage facility, much more than what we saw in the s.79 I used a trowel to scratch around in various spots under the cages and in the storage facility, looking for maggot hot spots. Unfortunately, I never found anything obvious and couldn't think of any management suggestions other than what the farmer is already doing.

The complainants s.79 They had a lot of lesser housefilies congregating in the shady areas (deck etc.). Significantly worse than what I observed at s.79 complainants home. They are understandably quite frustrated.

Both parties agree that this is a particularly bad year.

The farmer is open to you visiting his operation to provide a government entomologist opinion. He seems genuine about wanting to improve the situation but is not sure how much of the problem he's generating given the lack of obvious hotspots. s.79
s.79 Hopefully you can find a 'smoking gun' that I missed.

Thanks much. s.22 if you can keep Jason and I in the loop that would be great.

Chris

Chris Zabek | Regional Agrologist
BC Ministry of Agriculture | p: 604-556-3045 | f: 604-556-3030
1-888-221-7141 www.gov.bc.ca/agriservicebc

From: Hueppelsheuser, Tracy AGRI:EX
To: Smid, Claire AGRI:EX
Subject: mink
Date: May 26, 2020 1:48:34 PM

Hi Claire, Julie Hughes and I visited a mink farm on August 27, 2019. Here is the report back to the grower after the visit about what we saw and discussed. The grower escorted us around the farm and explained his processes to us. The reason we were there was because a neighbour had complained about flies and suspected they were coming form the mink farm.
Chris Zabek and Jason Lussier had also visited this farm on the same issue in August. Kim Sutherland and/or Dieter Geesing also visited around that time.
--Tracy
Tracy Hueppelsheuser
Entomologist, Plant and Animal Health Branch
British Columbia Ministry of Agriculture
1767 Angus Campbell Road,
Abbotsford, British Columbia, V3G 2M3
Tracy.Hueppelsheuser@gov.bc.ca
Note New Phone Number: 778-666-0519

From: Hueppelsheuser, Tracy AGRI:EX
Sent: September 4, 2019 4:54 PM
To: s.79
Cc: Hughes, Marie Julie AGRI:EX
Subject: RE: our visit on Tuesday

s.79 , based on our visit last week, Julie and I have some suggestions and ideas for your consideration.

Objective: to make the habitat less suitable for the lesser house flies (Less moisture and wet areas) and use fly control tools strategically and optimally.

Manure under cages:

- From an old factsheet we have on hand for Poultry called "Management of Flies in Layer Barns" (link below): *Either avoid removing manure during fly season or increase the rate of removal and remove manure in 10 – 12 day intervals to disrupt fly breeding.*
- From the same publication: *Putting a 10 – 15 cm layer of sawdust under cages after manure removal to absorb moisture, or leave a 15 – 20 cm pad of old dry manure for both moisture absorption and the beneficial insects that live in the old manure that feed on fly maggots.*

Spray records: These should be kept not only for sprays, but also can include other fly management activities, such as dates of cleaning out or lime application. There are several good reasons to do this, including:

- Helping keep track for planning and refining fly control program over the season and in the future.
- Demonstrating to others how flies are effectively being controlled.

Water: High moisture and damp areas are a major reason for fly proliferation. Continue to manage unwanted moisture in all cases diligently. Lesser house flies like it very damp, as is evident in the last barns we observed where the cups had just been shut off.

- Would it be possible to install some type of water catchment on the pens to catch any water overflow from the feeder cups / nipple system, so the water never has a chance to

mix with the manure? (Something like a plastic eavestrough / gutter running the length of the pens and draining outside of the barn area?)

Compost facility:

- I have asked that Kim Sutherland and Dieter Geesing at the Ministry get in touch with you about this. They have experience in this area and can offer practical information for your consideration.
- One possible suggestion - if it is not possible to pile the manure in windrows to facilitate turning, "Integrated Fly Management for Livestock Farms" (see web link below) recommends *"covering the manure with thick black plastic to prevent flies from being able to access the manure and lay their eggs, this will also assist in killing any eggs / larvae already in the manure."*

Terrestrial buffer:

- Hedges or trees about the property boundaries can help prevent movement of flies and dust and odour to neighbours. Consider where this could be practically added around the farm. There is a good buffer on the east end (big trees), but not as much on the other sides.
- I have also asked Kim and Dieter to talk to you about this and provide some suggestions.

Sticky fly tape or string: may help with trapping flies to some extent[s.79] , you had mentioned you wanted to try this in the barns.

Possibility of a feed-through product, such as Larvadex (cyromazine) in the USA or other countries. https://www.elanco.us/products-services/poultry/larvadex . Rabon (tetrachlorvinphos)--this is tick and flea collar or powder).

- There are currently no registered products like this available to Canadian mink producers.
- Caroline Bedard, pesticide regulatory specialist at the Ministry has stated that Newfoundland has been trying to get these types of products registered (cyromazine) in Canada for some time with no success thus far.

s.79 it is worth noting that the complainant stated that flies have been getting worse the last three years, with 2019 being the very worst. Are there any changes in the last three years that you have made that could be contributing to more flies? Increase in numbers of barns, or different practices related to manure management or anything else? I think you told us you were increasing the size of the farm over the last few years so it is likely that as the mink numbers are increasing so are the flies. Let me know if there is anything else you can think of.

Flies seem to have decreased from August 14 to August 27 on neighbouring properties so that is good news.

Some useful links for flies:

- **Flies and minks in Nova Scotia:**
- Two versions of the same factsheet but some different info included in each: https://www.perennia.ca/wp-content/uploads/2018/04/Fly-Control-Mink-Fact-Sheet-2013_FINAL.pdf and http://www.nsfa-fane.ca/efp/wp-content/uploads/2016/08/Fly_Control_IFM_Fact_Sheet.pdf
- University of California IPM: How to Manage Pests of Homes, Structures, People, and Pets; this factsheet has a bit about the Lesser house fly biology: http://ipm.ucanr.edu/PMG/PESTNOTES/pn7457.html
- This is about House flies and chickens, but has some good ideas for fly management in general: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/farm-management/structures-and-mechanization/300-series/384200-10_management_of_flies_in_layer_barns.pdf

Sincerely,

Tracy Tracy Hueppelsheuser Entomologist, Plant and Animal Health Branch British Columbia Ministry of Agriculture 1767 Angus Campbell Road, Abbotsford, British Columbia, V3G 2M3 Ph: 604-556-3031 Tracy.Hueppelsheuser@gov.bc.ca	Julie (Marie) Julie Hughes Compliance, Operations and Data Officer British Columbia Ministry of Agriculture 1767 Angus Campbell Road, Abbotsford, BC V3G 2M3 Tel: 604-556-3093 www.gov.bc.ca/animalhealthcentre

BRITISH COLUMBIA | Ministry of Agriculture

Mink Farm
Inspection Check List

Site Location: s.79

Date: **October 2, 2018**
Inspection Team: **Lynette Hare and Dr. Ann Britton**

✓ Farm meets all applicable federal, provincial and municipal land use regulations

✓ Site has sufficient supply of good quality drinking water to meet the needs of the mink and the on-site needs for cleaning and other farm activities.

Housing

✓ Sheds provide protection from extreme weather conditions.

✓ Sheds are designed to allow adequate space, light and access for stock people to observe and care for the animals.

Pens Appendix E – Canadian Code of Practice

- ❖ All pens with multiple mink must be enhanced with a hammock/shelf/platform **(by June, 2014)** *If a jump up/penthouse or drop in nest box is used, a shelf is not required as an enrichment.*
- **24 mink only on the farm. Will pelt out in November. The mink on the farm have nest boxes, an enrichment.**

Nest Boxes

✓ Nest boxes are designed to hold adequate bedding and allow for good nesting behavior in a comfortable, safe and secluded place.

✓ Nest boxes are appropriate size to accommodate all animals in the pen comfortably at the same time.

✓ If feeding on nest box lid, kits are able to easily access the feed.

Bedding

✓ Bedding is clean and dry.

Environment

✓ Mink are exposed to minimum number of continuous hours of daylight.

✓ Sheds and buildings are consistent and adequate to allow airflow.

Feed

✓ Waste feed is removed before providing fresh feed.

Feed carts used to deliver wet feed are cleaned and sanitized regularly.

Feed provided by Dogwood Farms

Record Keeping

Approved on May 11, 2016

Herd Health Management Plan in place, including:

- Vet-Client-Patient relationship
- Mink Identification System
- Vaccination and treatment records
- Tracking mortalities

❖ Current license and inventory maintained for any provincial/federal/municipal requirements.

BRITISH COLUMBIA | Ministry of Agriculture

Mink Farm
Inspection Check List

Site Location: s.79

Date: **October 31, 2018**
Inspection Team: **Lynette Hare and Dr. Ann Britton**

- ✓ Farm meets all applicable federal, provincial and municipal land use regulations

- ✓ Site has sufficient supply of good quality drinking water to meet the needs of the mink and the on-site needs for cleaning and other farm activities.

Housing

- ✓ Sheds provide protection from extreme weather conditions.

- ✓ Sheds are designed to allow adequate space, light and access for stock people to observe and care for the animals.

Pens Appendix E – Canadian Code of Practice

- ✓ All pens have jump ups, nest boxes and enrichments.

Nest Boxes

- ✓ Nest boxes are designed to hold adequate bedding and allow for good nesting behavior in a comfortable, safe and secluded place.

- ✓ Nest boxes are appropriate size to accommodate all animals in the pen comfortably at the same time.

- ✓ If feeding on nest box lid, kits are able to easily access the feed.

Bedding

✓ Bedding is clean and dry.

Environment

✓ Mink are exposed to minimum number of continuous hours of daylight.

✓ Sheds and buildings are consistent and adequate to allow airflow.

Feed

✓ Waste feed is removed before providing fresh feed.

Record Keeping

Herd Health Management Plan in place, including: -

- Vet-Client-Patient relationship
- Mink Identification System
- Vaccination and treatment records
- Tracking mortalities

✓ Current license and inventory maintained for any provincial/federal/municipal requirements.

BRITISH COLUMBIA | Ministry of Agriculture

Mink Farm
Inspection Check List

Site Location: s.79

Date: **October 31, 2018**
Inspection Team: **Lynette Hare and Dr. Ann Britton**

*This farm has completed the Mink Care Assessment Program audit – October 30, 2018

✓ Farm meets all applicable federal, provincial and municipal land use regulations

✓ Site has sufficient supply of good quality drinking water to meet the needs of the mink and the on-site needs for cleaning and other farm activities.

Housing

✓ Sheds provide protection from extreme weather conditions.

✓ Sheds are designed to allow adequate space, light and access for stock people to observe and care for the animals.

Pens Appendix E – Canadian Code of Practice

✓ All pens have jump ups, nest boxes and enrichments.

Nest Boxes

✓ Nest boxes are designed to hold adequate bedding and allow for good nesting behavior in a comfortable, safe and secluded place.

✓ Nest boxes are appropriate size to accommodate all animals in the pen comfortably at the same time.

✓ If feeding on nest box lid, kits are able to easily access the feed.

Bedding

✓ Bedding is clean and dry.

Environment

✓ Mink are exposed to minimum number of continuous hours of daylight.

✓ Sheds and buildings are consistent and adequate to allow airflow.

Feed

✓ Waste feed is removed before providing fresh feed.

Record Keeping

Herd Health Management Plan in place, including: -

- Vet-Client-Patient relationship
- Mink Identification System
- Vaccination and treatment records
- Tracking mortalities

✓ Current license and inventory maintained for any provincial/federal/municipal requirements.

BRITISH COLUMBIA | Ministry of Agriculture

Mink Farm
Inspection Check List

Site Location: s.79

Date: **September 19, 2018**
Inspection Team: **Lynette Hare and Dr. Ann Britton**

✓ Farm meets all applicable federal, provincial and municipal land use regulations

✓ Site has sufficient supply of good quality drinking water to meet the needs of the mink and the on-site needs for cleaning and other farm activities.

Housing

✓ Sheds provide protection from extreme weather conditions.

✓ Sheds are designed to allow adequate space, light and access for stock people to observe and care for the animals.

Pens Appendix E – Canadian Code of Practice

Farm is working towards compliance with the Mink Care Assessment Program – 2020
Farm is clean and well maintained.

Nest Boxes

✓ Nest boxes are designed to hold adequate bedding and allow for good nesting behavior in a comfortable, safe and secluded place.

✓ Nest boxes are appropriate size to accommodate all animals in the pen comfortably at the same time.

✓ If feeding on nest box lid, kits are able to easily access the feed.

Bedding

✓ Bedding is clean and dry.

Environment

✓ Mink are exposed to minimum number of continuous hours of daylight.

✓ Sheds and buildings are consistent and adequate to allow airflow.

Feed

✓ Waste feed is removed before providing fresh feed.

✓ Feed carts used to deliver wet feed are cleaned and sanitized regularly.

✓ Feed preparation area is cleaned and sanitized daily.

Record Keeping

✓ Herd Health Management Plan in place, including:

- Vet-Client-Patient relationship
- Mink Identification System
- Vaccination and treatment records
- Tracking mortalities

✓ Current license and inventory maintained for any provincial/federal/municipal requirements.

BRITISH COLUMBIA | Ministry of Agriculture

Mink Farm
Inspection Check List

Site Location: s.79

Date: **September 19, 2018**
Inspection Team: **Lynette Hare and Dr. Ann Britton**

✓ Farm meets all applicable federal, provincial and municipal land use regulations

✓ Site has sufficient supply of good quality drinking water to meet the needs of the mink and the on-site needs for cleaning and other farm activities.

Housing

✓ Sheds provide protection from extreme weather conditions.

✓ Sheds are designed to allow adequate space, light and access for stock people to observe and care for the animals.

Pens Appendix E – Canadian Code of Practice

Farm is working towards compliance with the Mink Care Assessment Program – 2020
Farm is clean and well maintained.

Nest Boxes

✓ Nest boxes are designed to hold adequate bedding and allow for good nesting behavior in a comfortable, safe and secluded place.

✓ Nest boxes are appropriate size to accommodate all animals in the pen comfortably at the same time.

✓ If feeding on nest box lid, kits are able to easily access the feed.

Bedding

✓ Bedding is clean and dry.

Environment

✓ Mink are exposed to minimum number of continuous hours of daylight.

✓ Sheds and buildings are consistent and adequate to allow airflow.

Feed

✓ Waste feed is removed before providing fresh feed.

✓ Feed carts used to deliver wet feed are cleaned and sanitized regularly.

✓ Feed preparation area is cleaned and sanitized daily.

Record Keeping

✓ Herd Health Management Plan in place, including:

- Vet-Client-Patient relationship
- Mink Identification System
- Vaccination and treatment records
- Tracking mortalities

✓ Current license and inventory maintained for any provincial/federal/municipal requirements.

BRITISH COLUMBIA | Ministry of Agriculture

Mink Farm
Inspection Check List

Site Location: s.79

Date: **September 17, 2018**
Inspection Team: **Lynette Hare and Dr. Ann Britton**

✓ Farm meets all applicable federal, provincial and municipal land use regulations

✓ Site has sufficient supply of good quality drinking water to meet the needs of the mink and the on-site needs for cleaning and other farm activities.

Housing

✓ Sheds provide protection from extreme weather conditions.

✓ Sheds are designed to allow adequate space, light and access for stock people to observe and care for the animals.

Pens Appendix E – Canadian Code of Practice

Farm is working towards compliance with the Mink Care Assessment Program – 2020

Excessive manure under cages attracting flies. Very high ammonia odour.
Excessive standing water and swampy areas throughout and between the sheds.
Many cages missing hammocks, nest boxes and toys – noted different times of year require nest boxes and/or hammocks to be removed.

Nest Boxes

___ Nest boxes are designed to hold adequate bedding and allow for good nesting behavior in a comfortable, safe and secluded place.

✓ Nest boxes are appropriate size to accommodate all animals in the pen comfortably at the same time.

✓ If feeding on nest box lid, kits are able to easily access the feed.

Bedding

___ Bedding is clean and dry – Not a lot of bedding was noted.

Environment

✓ Mink are exposed to minimum number of continuous hours of daylight.

✓ Sheds and buildings are consistent and adequate to allow airflow.

Feed

✓ Waste feed is removed before providing fresh feed.

✓ Feed carts used to deliver wet feed are cleaned and sanitized regularly.

✓ Feed preparation area is cleaned and sanitized daily.

Record Keeping

✓ Herd Health Management Plan in place, including:

- Vet-Client-Patient relationship
- Mink Identification System
- Vaccination and treatment records
- Tracking mortalities

✓ Current license and inventory maintained for any provincial/federal/municipal requirements.

BRITISH COLUMBIA | Ministry of Agriculture

Mink Farm
Inspection Check List

Site Location: s.79
Date:
Inspection Team: **Lynette Hare and Dr. Ann Britton**

✓ Farm meets all applicable federal, provincial and municipal land use regulations

✓ Site has sufficient supply of good quality drinking water to meet the needs of the mink and the on-site needs for cleaning and other farm activities.

Housing

✓ Sheds provide protection from extreme weather conditions.

✓ Sheds are designed to allow adequate space, light and access for stock people to observe and care for the animals.

Pens **Appendix E – Canadian Code of Practice** – will be in line with MCAP

most ✓ All pens with multiple mink must be enhanced with a hammock/shelf/platform **(by June, 2014)**
If a jump up/penthouse or drop in nest box is used, a shelf is not required as an enrichment.

✓ *All pens must include a minimum of one manipulative enrichment* **(by December 31, 2013)**

Nest Boxes

✓ Nest boxes are designed to hold adequate bedding and allow for good nesting behavior in a comfortable, safe and secluded place.

✓ Nest boxes are appropriate size to accommodate all animals in the pen comfortably at the same time.

✓ If feeding on nest box lid, kits are able to easily access the feed.

Very nice farm.

Bedding

✓ Bedding is clean and dry.

Environment

✓ Mink are exposed to minimum number of continuous hours of daylight.

✓ Sheds and buildings are consistent and adequate to allow airflow.

Feed

✓ Waste feed is removed before providing fresh feed.

✓ Feed carts used to deliver wet feed are cleaned and sanitized regularly.

✓ Feed preparation area is cleaned and sanitized daily.

Record Keeping

✓ Herd Health Management Plan in place, including:

- Vet-Client-Patient relationship
- Mink Identification System
- Vaccination and treatment records
- Tracking mortalities

✓ Current license and inventory maintained for any provincial/federal/municipal requirements.

BRITISH COLUMBIA | Ministry of Agriculture

Mink Farm
Inspection Check List

Site Location: s.79

Date: **October 2, 2018**
Inspection Team: **Lynette Hare and Dr. Ann Britton**

- ✓ Farm meets all applicable federal, provincial and municipal land use regulations
- ✓ Site has sufficient supply of good quality drinking water to meet the needs of the mink and the on-site needs for cleaning and other farm activities.

Housing

- ✓ Sheds provide protection from extreme weather conditions.
- ✓ Sheds are designed to allow adequate space, light and access for stock people to observe and care for the animals.

Pens Appendix E – Canadian Code of Practice

All pens meet minimum standards in Table 2, 4/19 pens meet standards in Table 3

All pens have enrichments, nest boxes and hammocks.

Farm is exceptionally clean and well maintained.

Nest Boxes

- ✓ Nest boxes are designed to hold adequate bedding and allow for good nesting behavior in a comfortable, safe and secluded place.
- ✓ Nest boxes are appropriate size to accommodate all animals in the pen comfortably at the same time.
- ✓ If feeding on nest box lid, kits are able to easily access the feed.

Bedding

✓ Bedding is clean and dry.

Environment

✓ Mink are exposed to minimum number of continuous hours of daylight.

✓ Sheds and buildings are consistent and adequate to allow airflow.

Feed

✓ Waste feed is removed before providing fresh feed.

✓ Feed carts used to deliver wet feed are cleaned and sanitized regularly.

✓ Feed preparation area is cleaned and sanitized daily.

Record Keeping approved by Dr. Pritchard Feb 4, 2016

✓ Herd Health Management Plan in place, including:

- Vet-Client-Patient relationship
- Mink Identification System
- Vaccination and treatment records
- Tracking mortalities

✓ Current license and inventory maintained for any provincial/federal/municipal requirements.

BRITISH COLUMBIA | Ministry of Agriculture

Mink Farm
Inspection Check List

Site Location: s.79
Date: **September 18, 2018**
MAG: **Lynette Hare**

✓ Farm meets all applicable federal, provincial and municipal land use regulations

✓ Site has sufficient supply of good quality drinking water to meet the needs of the mink and the on-site needs for cleaning and other farm activities.

Housing

✓ Sheds provide protection from extreme weather conditions.

✓ Sheds are designed to allow adequate space, light and access for stock people to observe and care for the animals.

Pens

** Many pens missing either the nest box or the hammock and enrichment. Noted that at different times of the year this is necessary for handling and separating mink. Pens are sufficient size for number of mink being kept.

Nest Boxes

✓ Nest boxes are designed to hold adequate bedding and allow for good nesting behavior in a comfortable, safe and secluded place.

✓ Nest boxes are appropriate size to accommodate all animals in the pen comfortably at the same time.

✓ If feeding on nest box lid, kits are able to easily access the feed.

Bedding

✓ Bedding is clean and dry.

Environment

✓ Mink are exposed to minimum number of continuous hours of daylight.

✓ Sheds and buildings are consistent and adequate to allow airflow.

Feed

✓ Waste feed is removed before providing fresh feed.

Feed carts used to deliver wet feed are cleaned and sanitized regularly.

Feed preparation area is cleaned and sanitized daily.

Record Keeping

✓ Herd Health Management Plan in place, including:

- Vet-Client-Patient relationship
- Mink Identification System
- Vaccination and treatment records
- Tracking mortalities

✓ Current license and inventory maintained for any provincial/federal/municipal requirements.

*PERIMETER FENCING IS BROKEN DOWN IN SEVERAL AREAS SURROUNDING THE SHEDS. FENCING MUST BE REPAIRED IF HE INTENDS TO CONTINUE FARMING AFTER PELTING IN DECEMBER.

BRITISH COLUMBIA | Ministry of Agriculture

Mink Farm
Inspection Check List

Site Location: s.79

Date: **September 19, 2018**
Inspection Team: **Lynette Hare and Dr. Ann Britton**

✓ Farm meets all applicable federal, provincial and municipal land use regulations

✓ Site has sufficient supply of good quality drinking water to meet the needs of the mink and the on-site needs for cleaning and other farm activities.

Housing

✓ Sheds provide protection from extreme weather conditions.

✓ Sheds are designed to allow adequate space, light and access for stock people to observe and care for the animals.

Pens Appendix E – Canadian Code of Practice

Farm is working towards compliance with the Mink Care Assessment Program – 2020
Farm is clean and well maintained.

Nest Boxes

✓ Nest boxes are designed to hold adequate bedding and allow for good nesting behavior in a comfortable, safe and secluded place.

✓ Nest boxes are appropriate size to accommodate all animals in the pen comfortably at the same time.

✓ If feeding on nest box lid, kits are able to easily access the feed.

Bedding

✓ Bedding is clean and dry.

Environment

✓ Mink are exposed to minimum number of continuous hours of daylight.

✓ Sheds and buildings are consistent and adequate to allow airflow.

Feed

✓ Waste feed is removed before providing fresh feed.

✓ Feed carts used to deliver wet feed are cleaned and sanitized regularly.

✓ Feed preparation area is cleaned and sanitized daily.

Record Keeping

✓ Herd Health Management Plan in place, including:

- Vet-Client-Patient relationship
- Mink Identification System
- Vaccination and treatment records
- Tracking mortalities

✓ Current license and inventory maintained for any provincial/federal/municipal requirements.

BRITISH COLUMBIA | Ministry of Agriculture

Mink Farm
Inspection Check List

Site Location: s.79

Date: **September 4, 2018**
Inspection Team: **Lynette Hare and Dr. Ann Britton**

✓ Farm meets all applicable federal, provincial and municipal land use regulations

✓ Site has sufficient supply of good quality drinking water to meet the needs of the mink and the on-site needs for cleaning and other farm activities.

Housing

✓ Sheds provide protection from extreme weather conditions.

✓ Sheds are designed to allow adequate space, light and access for stock people to observe and care for the animals. Manure is cleared out monthly and limed under sheds.

Pens Appendix E – Canadian Code of Practice

X All pens with multiple mink must be enhanced with a hammock/shelf/platform **(by June, 2014)**
If a jump up/penthouse or drop in nest box is used, a shelf is not required as an enrichment.

Many cages with multiple mink did not have a hammock/shelf or nest box. Farm is now enrolling in the Mink Care Assessment Program with third party auditing. Requirements for jump ups or hammocks are used at different times of the breeding season. These requirements will be completed by the spring of 2019.

X Many cages missing enrichments.

Nest Boxes

✓ Nest boxes are designed to hold adequate bedding and allow for good nesting behavior in a comfortable, safe and secluded place.

- ✓ Nest boxes are appropriate size to accommodate all animals in the pen comfortably at the same time.

- ✓ If feeding on nest box lid, kits are able to easily access the feed.

Bedding

- ✓ Bedding is clean and dry.

Environment

- ✓ Mink are exposed to minimum number of continuous hours of daylight.

- ✓ Sheds and buildings are consistent and adequate to allow airflow.

Feed

- ✓ Waste feed is removed before providing fresh feed.

Record Keeping

Herd Health Management Plan in place, including: -

- Vet-Client-Patient relationship
- Mink Identification System
- Vaccination and treatment records
- Tracking mortalities

No mink being treated in hospital area at time of inspection. One vial of Metacam was expired, and disposed of. Single-use euthanasia tube was installed in hospital area.

- ✓ Current license and inventory maintained for any provincial/federal/municipal requirements.

BRITISH COLUMBIA | Ministry of Agriculture

Mink Farm
Inspection Check List

Site Location: s.79

Date: **September 4, 2018**
Inspection Team: **Lynette Hare and Dr. Ann Britton**

✓ Farm meets all applicable federal, provincial and municipal land use regulations

✓ Site has sufficient supply of good quality drinking water to meet the needs of the mink and the on-site needs for cleaning and other farm activities.

Housing

✓ Sheds provide protection from extreme weather conditions.

✓ Sheds are designed to allow adequate space, light and access for stock people to observe and care for the animals.

Pens Appendix E – Canadian Code of Practice

X All pens with multiple mink must be enhanced with a hammock/shelf/platform **(by June, 2014)**
If a jump up/penthouse or drop in nest box is used, a shelf is not required as an enrichment.

Many cages with multiple mink did not have a hammock/shelf or nest box. Farm is now enrolling in the Mink Care Assessment Program with third party auditing. Requirements for jump ups or hammocks are used at different times of the breeding season. These requirements will be completed by the spring of 2019.

X Many cages missing enrichments.

Nest Boxes

✓ Nest boxes are designed to hold adequate bedding and allow for good nesting behavior in a comfortable, safe and secluded place.

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Bedding

✓ Bedding is clean and dry.

Environment

✓ Mink are exposed to minimum number of continuous hours of daylight.

✓ Sheds and buildings are consistent and adequate to allow airflow.

Feed

✓ Waste feed is removed before providing fresh feed.

Record Keeping

Herd Health Management Plan in place, including: -

- Vet-Client-Patient relationship
- Mink Identification System
- Vaccination and treatment records
- Tracking mortalities

No mink being treated in hospital area at time of inspection. No expired drugs noted.

✓ Current license and inventory maintained for any provincial/federal/municipal requirements.

From:	Hughes, Marie Julie AGRI:EX
To:	Lussier, Jason AGRI:EX; Geesing, Dieter AGRI:EX
Cc:	Mori, Nadia AGRI:EX; Poon, David AGRI:EX; Hueppelsheuser, Tracy AGRI:EX
Subject:	RE: Mink Farm Composing follow-up
Date:	November 15, 2019 9:08:19 AM
Attachments:	image001.jpg

Good morning Jason,
I spoke with s.22 this morning and let them know that the Ministry Soil Specialist visited farms in the area s.13 and made recommendations for handling manure / compost to hopefully reduce next years fly populations. I also suggested that if s.22 start seeing lesser house flies next year to let us know and we can follow up with nearby farms in a proactive manner. They were very grateful that we have followed up and will continue to monitor the situation.

Julie

(Marie) Julie Hughes
Compliance, Operations and Data Officer
British Columbia Ministry of Agriculture
1767 Angus Campbell Road, Abbotsford, BC V3G 2M3
Tel: 604-556-3093
Mariejulie.hughes@gov.bc.ca
www.gov.bc.ca/animalhealthcentre

From: Lussier, Jason AGRI:EX
Sent: October 31, 2019 12:50 PM
To: Geesing, Dieter AGRI:EX
Cc: Mori, Nadia AGRI:EX ; Poon, David AGRI:EX ; Hughes, Marie Julie AGRI:EX ; Hueppelsheuser, Tracy AGRI:EX
Subject: RE: Mink Farm Composing follow-up

Thanks for the update Dieter. I've cc'ed Julie who has been speaking with the complainant and Tracy who has also done a site visit to assess the fly situation.
Julie- please keep me updated on how your conversation with the complainant goes and let me know if you have any questions.
An Environmental Farm Plan (EFP) may be a good step to consider.
Regards

Jason M. Lussier, M.Sc. P.Ag | Regional Team Lead (Coast)
B.C. Ministry of Agriculture | Abbotsford
Jason.lussier@gov.bc.ca|Office: 604.556.3144 |Cell: 604.226.7752

From: Geesing, Dieter AGRI:EX <Dieter.Geesing@gov.bc.ca>
Sent: October 30, 2019 5:23 PM
To: Lussier, Jason AGRI:EX <Jason.Lussier@gov.bc.ca>
Cc: Mori, Nadia AGRI:EX <Nadia.Mori@gov.bc.ca>; Poon, David AGRI:EX <David.Poon@gov.bc.ca>
Subject: RE: s.79 Farm Visits availability

Hi Jason,

So I went to the mink farm. An interesting operation. I admit that today (no rain for days, cold) is not the day you would see the manifestation of major environmental issues, and besides, the operation is slowly winding down for the year. So my observations have to be seen in that context. However, I could not identify any major red flags. The place looks clean, well-organized, no rubbish, no signs of spill or puddling, etc. And, of course there were no flies today which was to be expected but I can imagine that it can be a problem there.

The owner is not composting but only storing the mink manure. I discussed the various options he has to compost the material, and he showed interested in particular when I estimated the money he could make from it. However, I do not believe that the manure storage is the dominant source of the flies. Even though composting will effectively destroy flies, the flies have already bred numerous cycles in the mink barns. The mink manure is high in moisture (but not liquid) and nitrogen rich material - so ideal for flies – and it sits in the barns for at least 4 months. The use of lime and insecticides has been tried but does not seem to work effectively. Frequent removal, (that means probably every day since flies can hatch in 12 – 24 hours on warm days) and then composting will probably be the best way - but considering the size of the operation, it will be daunting work. Does not seem to be the best option.

However, the least he needs to do, in my opinion, is to reduce the moisture and abate ammonia in the manure as fast as possible to minimize fly breeding. I proposed to test spreading out the manure thinly and potentially treating it with zeolite. This could be done at the same time the animals are fed. Zeolite is quite successfully used in horse barns but also for other pet litter. He agreed to try it out on a few of his barns.

Next level would be potential technical options like, for example, a self-cleaning gutter – the principle is similar to what is used in dairy barns, but much smaller. This has, of course, major financial implications.

In conclusion, from what I saw and heard today, I suspect that managing the manure immediately after is produced may be the key to substantially reduce the number of flies. A classic case of land-use conflict where residents move into an agricultural area without considering potential nuisances from farming activities. Another, more immediate neighbor seems to complain more about the odor (but putting up with it) than the flies.

Btw, I also discussed with him the benefits of an EFP and he appears to be quite open to that idea.

Regards,

Dieter
604-556-3048

From: Hueppelsheuser, Tracy AGRI:EX
To: Zabek, Chris AGRI:EX
Subject: RE: our visit on Tuesday
Date: September 17, 2019 4:06:21 PM

Hi Chris, sorry for the delay in responding. I think there are some hotspots, and also just background levels to be expected on this type of livestock farm.

I think the compost can be managed better. And , I think it is a 'hotspot' even though it has some attributes, like it is covered and in a nice building so that does help keeping the moisture level down. He really doesn't turn it or manage it. he just piles it up there.

I think the moisture level in the manure in the barns on the west end of the farm was too high (from the watering cups and inadequate sawdust or other absorbent material) and that is another hotspot. We found that manure to be loaded with lesser house fly larvae and pupae. He could manage this better, and anticipate that anywhere he uses cups he will have more risk of flies due to moisture.

Also, the lack of vegetative buffers on all sides (except the east) likely contributes to flies moving around the neighbourhood.

--Tracy

From: Zabek, Chris AGRI:EX
Sent: Wednesday, September 11, 2019 8:51 AM
To: Hueppelsheuser, Tracy AGRI:EX
Subject: RE: our visit on Tuesday

Thanks Tracy.

Do you think that the compost pile (or any place else) was a hot spot of fly breeding or is it some background level of breeding over the whole farm?

Cheers,
Chris

Chris Zabek | Regional Agrologist
p: 604-556-3045

From: Hueppelsheuser, Tracy AGRI:EX
Sent: Friday, September 6, 2019 5:19 PM
To: Lussier, Jason AGRI:EX; Zabek, Chris AGRI:EX; Geesing, Dieter AGRI:EX; Sutherland, Kim AGRI:EX
Cc: Hughes, Marie Julie AGRI:EX
Subject: FW: our visit on Tuesday

Hello Chris and Jason, below please find the notes we sent back to s.79

after our farm visit due to a neighbour complaint of flies. Our visit was 2 weeks after yours.

Julie and I have completed our reporting to s.79 now, but I think there would be great value in Dieter and Kim following up with s.79 on a couple of points.

So we turn this back over to your Branch now for more follow up.

--Tracy

From: Hueppelsheuser, Tracy AGRI:EX
Sent: Wednesday, September 4, 2019 4:54 PM
To: s.79
Cc: Hughes, Marie Julie AGRI:EX
Subject: RE: our visit on Tuesday

s.79 based on our visit last week, Julie and I have some suggestions and ideas for your consideration.

Objective: to make the habitat less suitable for the lesser house flies (Less moisture and wet areas) and use fly control tools strategically and optimally.

Manure under cages:

- From an old factsheet we have on hand for Poultry called "Management of Flies in Layer Barns" (link below): *Either avoid removing manure during fly season or increase the rate of removal and remove manure in 10 – 12 day intervals to disrupt fly breeding.*
- From the same publication: *Putting a 10 – 15 cm layer of sawdust under cages after manure removal to absorb moisture, or leave a 15 – 20 cm pad of old dry manure for both moisture absorption and the beneficial insects that live in the old manure that feed on fly maggots.*

Spray records: These should be kept not only for sprays, but also can include other fly management activities, such as dates of cleaning out or lime application. There are several good reasons to do this, including:

- Helping keep track for planning and refining fly control program over the season and in the future.
- Demonstrating to others how flies are effectively being controlled.

Water: High moisture and damp areas are a major reason for fly proliferation. Continue to manage unwanted moisture in all cases diligently. Lesser house flies like it very damp, as is evident in the last barns we observed where the cups had just been shut off.

- Would it be possible to install some type of water catchment on the pens to catch any water overflow from the feeder cups / nipple system, so the water never has a chance to mix with the manure? (Something like a plastic eavestrough / gutter running the length of the pens and draining outside of the barn area?)

Compost facility:

- I have asked that Kim Sutherland and Dieter Geesing at the Ministry get in touch with you about this. They have experience in this area and can offer practical information for your consideration.
- One possible suggestion - if it is not possible to pile the manure in windrows to facilitate turning, "Integrated Fly Management for Livestock Farms" (see web link below) recommends *"covering the manure with thick black plastic to prevent flies from being able to access the manure and lay their eggs, this will also assist in killing any eggs / larvae already in the manure."*

Terrestrial buffer:

- Hedges or trees about the property boundaries can help prevent movement of flies and dust and odour to neighbours. Consider where this could be practically added around the farm. There is a good buffer on the east end (big trees), but not as much on the other sides.
- I have also asked Kim and Dieter to talk to you about this and provide some suggestions.

Sticky fly tape or string: may help with trapping flies to some extent. s.79 you had mentioned you wanted to try this in the barns.

Possibility of a feed-through product, such as Larvadex (cyromazine) in the USA or other countries. https://www.elanco.us/products-services/poultry/larvadex . Rabon (tetrachlorvinphos)--this is tick and flea collar or powder).

- There are currently no registered products like this available to Canadian mink producers.
- Caroline Bedard, pesticide regulatory specialist at the Ministry has stated that Newfoundland has been trying to get these types of products registered (cyromazine) in Canada for some time with no success thus far.

s.79 it is worth noting that the complainant stated that flies have been getting worse the last three years, with 2019 being the very worst. Are there any changes in the last three years that you have made that could be contributing to more flies? Increase in numbers of barns, or different practices related to manure management or anything else? I think you told us you were increasing the size of the farm over the last few years so it is likely that as the mink numbers are increasing so are the flies. Let me know if there is anything else you can think of.

Flies seem to have decreased from August 14 to August 27 on neighbouring properties so that is good news.

Some useful links for flies:

- **Flies and minks in Nova Scotia:**
- Two versions of the same factsheet but some different info included in each: https://www.perennia.ca/wp-content/uploads/2018/04/Fly-Control-Mink-Fact-Sheet-2013_FINAL.pdf and http://www.nsfa-fane.ca/efp/wp-content/uploads/2016/08/Fly_Control_IFM_Fact_Sheet.pdf
- University of California IPM: How to Manage Pests of Homes, Structures, People, and Pets;

this factsheet has a bit about the Lesser house fly biology: http://ipm.ucanr.edu/PMG/PESTNOTES/pn7457.html

- This is about House flies and chickens, but has some good ideas for fly management in general: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/farm-management/structures-and-mechanization/300-series/384200-10_management_of_flies_in_layer_barns.pdf

Sincerely,

Tracy Tracy Hueppelsheuser Entomologist, Plant and Animal Health Branch British Columbia Ministry of Agriculture 1767 Angus Campbell Road, Abbotsford, British Columbia, V3G 2M3 Ph: 604-556-3031 Tracy.Hueppelsheuser@gov.bc.ca	Julie (Marie) Julie Hughes Compliance, Operations and Data Officer British Columbia Ministry of Agriculture 1767 Angus Campbell Road, Abbotsford, BC V3G 2M3 Tel: 604-556-3093 www.gov.bc.ca/animalhealthcentre

From: s.79
To: Zabek, Chris AGRI:EX
Cc: s.79
Subject: Re: Site visit Wednesday, Aug 14, 11:30
Date: August 9, 2019 4:30:24 PM

That's correct. Come to office, when you arrive.

s.79

On Aug 9, 2019, at 16:23, Zabek, Chris AGRI:EX <Chris.Zabek@gov.bc.ca> wrote:

> Hi s.79
>
> Thanks for this. I look forward to seeing you next Wednesday at 11:30 s.79 s.79
>
> Regards,
> Chris
>
> Chris Zabek | Regional Agrologist
> BC Ministry of Agriculture | p: 604-556-3045 | f: 604-556-3030
> 1-888-221-7141 www.gov.bc.ca/agriservicebc

Preamble

Chris Zabek and Jason(?) visited our house after visiting the mink barn on August 14 2019. During our conversat
of flies on the north side of my barn are the same as what they saw in the mink sheds. They answered "yes" to th
an approximate number of lesser house flies in the mink sheds I opened up a work room on the north side of my
the end of the day I closed the doors and sprayed the room with Konk and left. The next day s.22 counted th

room size	width(m)	length(m)	height(m)	volume(cu.m.)
	3.35	4.6	2.54	39

# dead lesser house flies collected	1000
lesser house flies per cu.m.	26

Approximate Mink Shed Footprint(sq.m.)	width(m)	length(m)	# sheds	sq.m.
	5.49	78.3	45	19344
	5.49	51	4	1120
				20464

Approximate Mink Shed Volume(cu.m.)

width(m)	height(m)	end area(sq.m)	total length(m)
5.49	5.49	23	3728

Approximate number lesser house flies in the mink sheds
on any given time.

ion I asked them if the numbers
is question **twice**. To calaculate
barn and let it fill with flies. At
e number of dead flies.

total volume under cover(cu.m.)
84260

2152719

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