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# Standing Committee on Agriculture and Agri-Food

EVIDENCE

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Chair: Mr. Kody Blois





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Wednesday, April 26, 2023

• (1630)

[*Translation*]

**The Chair (Mr. Kody Blois (Kings—Hants, Lib.)):** I call this meeting to order.

Welcome to meeting No. 59 of the House of Commons Standing Committee on Agriculture and Agri-food.

I will start with a few reminders. Today's meeting is taking place in a hybrid format. The proceedings will be made available via the House of Commons website. Just so you are aware, the webcast will always show the person speaking, rather than the entirety of the committee. Screenshots or taking photos of your screen is not permitted.

Pursuant to Standing Order 108(2) and the motions adopted by the committee on Wednesday, October 5, 2022, and Monday April 17, 2023, the committee resumes its study of Environmental Contribution of Agriculture.

This meeting will be on the topic of bee mortality.

[*English*]

I'd like to welcome our witnesses who are joining us both in the room and online.

First, online, we have from the Canadian Association of Professional Apiculturists, Ernesto Guzman, who is a professor.

Welcome to our committee, Mr. Guzman.

From the Alberta Beekeepers Commission we have Jeremy Olthof, the past-president, and Ron Greidanus, a delegate with the Canadian Honey Council.

From the Government of British Columbia we have Paul van Westendorp joining us online.

Thank you so much for tuning in from British Columbia.

To our witnesses, the way this works is that we're going to allow for up to five minutes for opening remarks for each organization or individual who is here and then we'll turn it over to questions.

Colleagues, unfortunately, or fortunately for you, depending on how you view it, I have to run at 5:30. Mr. Barlow and Mr. Parent, unfortunately, are going to have to be absent the second hour, which puts both our first and second vice-chairs unavailable.

I think it's time that Mr. MacGregor, who has done great work on this committee, gets to come to sit up here.

**Some hon. members:** Hear, hear!

**The Chair:** He's no stranger to this committee.

My clerk tells me that I need unanimous consent, but I can tell by the applause in the room that it will not be an issue. I think it's due time that Mr. MacGregor gets to run things from up here.

Seeing no issue with that, we have unanimous consent.

I look forward to having you up here, Alistair. Don't outdo me too much, or people might want to have you up there the whole time.

I'll start with Mr. Guzman online.

You have up to five minutes, please. The floor is yours.

**Dr. Ernesto Guzman (Professor, Canadian Association of Professional Apiculturists):** Thank you very much for the invitation to speak to you today. I was invited to speak about about honeybee mortality.

I'm not going to repeat much of how important bees are for agricultural and ecology, only to say that they play a critical role in the production of food and in sustaining ecosystems and biodiversity.

One-third of the food consumed in western societies is thanks to the contribution of the pollination services by bees. The annual value of honeybee pollination in Canada is estimated to be about \$1.5 billion, and it exceeds \$120 billion globally. The role of honeybees as pollinators is central to life support systems on the planet and, of course, in Canada.

That's why it is worrisome that we have been experiencing high rates of honeybee mortality. I have to say that this is a global issue, mainly in developed countries of the northern hemisphere. It's not only a Canadian issue, but also happens in some European countries and the U.S.

Between 2007 and 2022, we have lost about one-third of honeybee colonies each year, which has strong economic and ecological implications.

In Canada in particular we lost a record number of colonies during the winter of 2021-22. Particularly in some provinces, the national winter loss rate was 45.5%, which is three times higher than the suggested loss threshold and the highest we have had since 2007.

As for the causes of these high mortality rates, most scientists agree on the culprits, but there is some debate as to which of the culprits have more weight. When you analyze the information published in scientific journals about these losses, the frequent suspects are, number one, varroa mites and viruses transmitted by the mite; pesticides; deficient hive management; queen failures; stress caused by transportation or malnutrition, and adverse climatic effects.

In Canada, it seems that varroa mite populations grew more during the 2021 season than in average years. Late mite fall treatments is a commonly cited cause of poor varroa mite control. Also, comments have been made about ineffective control achieved with amitraz—which is one of the parasite chemical products that we use to control the mites, sold as Apivar strips—but to the best of our knowledge we don't have concrete evidence of mite resistance to amitraz so far in Canada.

I have some recommendations to address the problem. It is important to establish multisectoral and interdisciplinary approaches to better understand the causes of winter mortality and to reduce the rate of colony losses. Therefore, the collaboration between beekeepers, scientists and the government is important.

Beekeepers should follow best management practices to keep their bees alive, which include monitoring for mite levels and timely mite control—not just when we can, but timely mite control is important—as well as good fall management.

Scientists and tech transfer technicians should focus on studying more of the impact of the culprits of mortality and develop new strategies to mitigate colony mortality, which may include new formulations of acaricides, novel management practices, efficient methods to produce nucleus colonies and to overwinter queen bees.

Nutrition is important to develop protein supplements that improve honeybee health and colony growth. Additionally, many of our beekeepers are hobbyists and need training and education. Therefore, extension activities at the national level are needed.

In this regard, CAPA researchers are working on new formulations like essential oils and oxalic acid, as well as on breeding programs to develop bees that are more resistant to the varroa mite.

• (1635)

CAPA is assisting the Canadian Honey Council to facilitate the registration of an additional oxalic acid formulation with the PM-RA for controlling varroa mites. Also, it is important to test acaricide efficacy. We have done that here in Ontario and have found no evidence of mite resistance to amitraz or flumethrin, but that has to be done in every province.

The tech transfer team committees in CAPA are establishing collaborations between tech transfer teams—

**The Chair:** Mr. Guzman, we're at time, but I want you to be able to finish up your thought, so if you could just wrap it up in 10 or 15 seconds—

**Dr. Ernesto Guzman:** Yes, it's going to be one minute.

**The Chair:** In 30 seconds—

**Dr. Ernesto Guzman:** All right.

These tech transfer teams are trying to establish programs at the national level working on sustainability issues with the Canadian Honey Council. We need to aim at sustainability and self-sufficiency to reduce colony losses. The government could lead this effort and provide economic support for these activities.

**The Chair:** Thank you very much, Mr. Guzman. I know my colleagues will be looking forward to engage with you, but we're going to have to turn it over to the Alberta Beekeepers Commission for up to five minutes.

Mr. Olthof, please.

**Mr. Jeremy Olthof (Past President, Alberta Beekeepers Commission):** My name is Jeremy Olthof, and I am the past-president of the Alberta Beekeepers Commission. The commission submitted a brief providing information in regard to how honeybees benefit the environment, as well as the challenges faced by the commercial industry regarding honeybee health decline and bee mortality. Rather than reiterating that information, I'm going to start by presenting what we believe are valid recommendations to resolve these issues.

The commission recommends that improvements to the regulatory system for beekeeping be a top priority. Based on peer reviews of the 2013 risk assessment, the assessment is based primarily on confirmation bias, not fact. We need a regulatory agency that is willing to meet and work more collaboratively with industry, rely on first-hand knowledge rather than hearsay, acknowledge the industry and their expertise, and respond in a timely manner.

Most critically, CFIA must have staff who are knowledgeable in honeybees and commercial beekeeping. The Canadian Association of Professional Apiculturists, CAPA, is insufficient as a consultant to CFIA. CFIA relies on CAPA, a volunteer organization, when honeybee scientific expertise is needed. CFIA should be taking a more holistic risk-benefit viewpoint that considers the realities that beekeepers are facing. Let me be clear: the issue is not CAPA as an organization, but rather CFIA's complete reliance on them to provide industry reports and to update current risks to the industry. It is long overdue that CFIA gives the beekeeping industry the respect and time it deserves.

Second, we need quick turnaround time within PMRA regarding new treatments to manage varroa. As with CFIA, there's no expertise or recognition of the importance of this industry in PMRA.

The Alberta Beekeepers Commission strongly recommends that Canada reopen the U.S.-Canada border, specifically northern California, to the importation of U.S. packaged honeybees within the existing framework of protocols to mitigate risks.

Finally, the commission strongly recommends federal funding for our provincial tech transfer teams to work on federally beneficial surveillance, applied research and extension services.

This committee needs to understand that beekeeping in Canada is vastly different from coast to coast. What works in B.C. does not necessarily work in Alberta or Nova Scotia. Domestic stock and self-sustainability can work in many areas of Canada if beekeepers are given the tools. Quality imported stock needs to be a reliable source for those beekeepers when self-sustainability fails.

Thank you for your time.

• (1640)

**Mr. Ron Greidanus (Delegate, Canadian Honey Council, Alberta Beekeepers Commission):** My name is Ron Greidanus.

I want to thank you for your invitation to speak today on bee mortality, which has been an industry challenge for the last 30 years.

I'm here today speaking for the Alberta Beekeepers Commission and for all of those beekeepers who, across this country, do not feel heard by their own provincial associations.

The beekeeping industry needs regulatory change to address the high rates of high mortality that beekeepers are consistently experiencing. The Alberta Beekeepers Commission has the following recommendations to break the cycle of excessive rates of bee mortality. It needs prompt and meaningful action.

We have the following recommendations. The ABC recommends that Canada reverse the policy on prohibiting the importation of packaged bees from the mainland United States; that Canada and the U.S. need to develop a North American bee strategy; and that Canada needs to transition away from the mass importation of replacement stock from around the world and focus on what works here.

The reason the ABC recommends that Canada reverse the policy on prohibiting the importation of packaged bees from the mainland of the United States is that 2013 was the last time we had a risk assessment undertaken. Now we have history on our side. We are able to identify what impact the risks that were included in that risk assessment will actually have on the ground. We have history and we now have experience.

As well, we know that there are protocols that could be put in place to mitigate some of the risks that would be associated with importation from the mainland United States. Step one is CFIA completing a new risk assessment.

The second recommendation by the ABC is for Canada and the U.S. to develop a North American bee strategy. It is a fallacy to

think that the 5,000 mile border that we share with the United States is a wall or a force field. It is a figment of human imagination. Pests and pathogens do not see it. They don't know it's there. Varroa, tracheal mite and small hive beetle have all come across that border into Canada.

The world is a big place and there are new threats showing up on the horizon. What comes into one country is going to eventually make its way into another country. We don't want to be the country that gives the U.S. something that keeps on giving. We need a policy in which both Canada and the U.S. will collaborate for a mutually symbiotic betterment of our industry.

The third recommendation by the ABC is that Canada needs to transition away from mass importation of replacement stock from around the world and focus on what works here. We're not asking to have the borders to the current legal sub-species of bees shut down immediately. We want to do a slow transition so that all of the players in the industry can transition thoughtfully and carefully. Knee-jerk reactions have hurt this industry significantly over the last number of years.

This year, there are 70,000 packages that will be imported into Canada to make up and fill the deficit that was incurred over the last number of years.

Access to a reliable source of replacement bee stock is key to growing a stable, vibrant honeybee pollination industry that lies at the crossroads of Canadian food security, and ensuring environmental biodiversity and sustainability. The Canadian commercial beekeeping industry needs to grow to meet the needs of what Canada can be.

My complete statement has been submitted to the committee prior to this meeting here. If you wish to read it in full, I can forward it to any of the members as they see fit.

Thank you so much for your time.

**The Chair:** Thank you very much, Mr. Greidanus and Mr. Olthof.

We'll now turn to Mr. van Westendorp, please, for up to five minutes.

**Mr. Paul van Westendorp (Provincial Apiculturist, Government of British Columbia):** Thank you very much. Thank you for the invitation.

I had submitted my speaking notes, which I hope can be distributed. They're only a two-pager, short and sweet.

I'd like to really switch a little bit to the academic discussion about the risks associated with some of the causes that have led to the high mortality rate. There is a table that I included. Prior to 1987, the average winter mortality that Canadian beekeepers experienced was roughly 10%. Over the last few decades it has been increasing. Today, we have persistent winter mortality rates of over 30%. That is not sustainable. I think we are collectively going to run into serious problems with crop pollination and things of that kind, as we have these kinds of losses. I don't speak on behalf of any beekeeper; I'm just looking at the larger picture.

Here in British Columbia, the blueberry industry is worth \$400 million. It is absolutely and completely dependent on the presence of honeybee colonies for pollination services. British Columbia doesn't even have enough honeybee colonies to service that industry. We rely on the seasonal presence of prairie beekeepers to come down and bring their bees for pollination services.

• (1645)

**The Chair:** Mr. van Westendorp, I apologize.

Our interpretation team is asking if you could bring your microphone up a bit closer to your mouth. That might help with the interpretation.

I've stopped the clock. I'm sorry to interrupt you.

It's back to you.

**Mr. Paul van Westendorp:** It is also important to recognize the context in which we talk here in Canada. There are about 750,000 to 800,000 colonies in Canada, but the real bulk of the beekeeping industry resides in the prairie provinces. They operate over 550,000 colonies. British Columbia and eastern Canada operate a total of about 220,000 colonies. I'm not trying to minimize that. I'm not trying to sound dismissive toward B.C. beekeepers or eastern Canadian beekeepers at all, but you have to see it within the context of what drives this industry at the national level.

As my esteemed colleagues have already mentioned, there is a whole host of causes that have led to these high losses, and there are certainly remedial actions we can take in order to minimize them. Among them—and I'm not shying away from them—are some of the industrial management practices that large commercial beekeepers employ. They certainly place great stresses on these bees and, therefore, jeopardize their survivability on a year-to-year basis.

However, as it was mentioned earlier, there are some serious difficulties in addressing the losses and having them replaced. Clearly, the United States seemed to be offering an opportunity for the commercial sector to address these shortages on an annual basis.

In May 2015—eight years ago—the Senate released its report, “The Importance of Bee Health to Sustainable Food Production in Canada.” Its first recommendation was to have Health Canada and the Canadian Food Inspection Agency amend the honeybee importation prohibition regulations in order to allow the import of bee packages from the United States. Unfortunately, nothing has happened since that time.

I can only say that I urge the CFIA to revisit this issue. As it was reported earlier, the last risk assessment was done 2018, and it would be appropriate for another risk assessment to be done 10 years later—this year or perhaps next year—so that we can at least have a pragmatic, professionally based or scientifically based assessment on the risks associated with the resumption of packages from the United States.

I think that just about concludes my comments.

**The Chair:** Thank you very much, Mr. van Westendorp.

We'll now turn it over to questions by colleagues. Colleagues, we'll shoot for six minutes for each of the parties and then have a

second round. It should be tight. I might have to ask you to keep it very tight, but I'm not going to go over time. At six minutes, I'll be stopping you.

Mr. Viersen, it's over to you.

**Mr. Arnold Viersen (Peace River—Westlock, CPC):** Thank you.

Mr. Greidanus, you were talking a bit earlier this week about how honeybees are imported into Canada and make up the bulk of pollination activity in Canada. However, they have to be managed by farmers or brought in by farmers.

Can you explain a bit more the percentages of pollination that honeybees are doing versus by natural pollinators? How do the honeybee and honeybee management, and them being brought into Canada, work for your farm?

• (1650)

**Mr. Ron Greidanus:** Thank you very much for that, Mr. Viersen.

I provide hives for hybrid canola seed pollination. Those hybrid canola seed pollination hives that I bring down represent 80% of the yield that will come off that field.

Now, if you go to blueberry pollination, the number of times a honeybee visits that blossom is going to dictate how big that berry is going to be. It represents a significant portion of the yield as well. It will be somewhere between 70% to 90% of the yield that comes from that honeybee pollination.

The challenges are in trying to maintain the numbers. When I put the bees into blueberry pollination, or when I put the bees into canola pollination, the hives are stressed. There's an overpopulation of bees in that particular area, and they're looking for food wherever they can get it. They are going to fly to the biggest source of honey, nectar and pollen that they can get.

When they come out, they're usually hungry. They're usually stressed, because they've been stuck on one diet. Imagine, if you will, the only thing you can eat is McDonald's happy meals. You can do that for a little while, but after the second week, you're going to break out, you're going to get sick and it's not going to be all that healthy for you.

Our effort is to try to get the bees in as quickly as we can and get them out as quickly as we can, but this is something that stresses the bees.

Keeping the hive numbers up, so that we can have enough hives to be able to do this year after year, becomes a challenge. Importing packaged bees from offshore, which is the only available source that we have right now, is one step and one tool that we have in our tool box to maintain the numbers so that we can provide effective pollination services to both the canola and the blueberry commodity groups. There's a total of 21 commodity groups that bees pollinate for. I could list some of them for you, but for time, I'm not going to.

I could submit them to the committee at a later time in an email.

**Mr. Arnold Viersen:** Around the fact that honeybees don't appear in Canada by themselves—farmers brought them here originally—my understanding is that a honeybee dies at about -11°C or -12°C, and many parts of Canada will get a lot colder than that.

How do these bees survive the winters in Canada?

**Mr. Ron Greidanus:** Bees survive the winter by having a massive group hug. I get asked the question, “Do they hibernate?” No, they don't hibernate. What bees do when it gets cold is cluster together and form a tight ball. They form a CO<sub>2</sub> bubble that they live in, which lowers their metabolism rate, and they are able to keep the temperature inside that cluster.

Before we have our shortest days, it doesn't matter what the outside temperature is; they will keep it at +20°C one bee depth into that cluster. Once we go past the shortest day and the light changes from the sun—so after December 21, when the days start to get longer—they raise that temperature to about 36°C and they keep it inside there.

In some of the comments that I've made is “critical mass population.” If bees do not have enough bees in that cluster, they cannot generate that heat. Imagine, if you will, we're a bunch of bees. If I were to stand by myself in the middle of the room, I would freeze and die, but if all of us were to get together in a group hug and stand there together, we'd have to take our jackets off, because we'd be pretty sweaty and hot. That's what happens inside the hive. If they don't have enough feed and if they don't have enough of a population inside the hive, they can't survive the winter. However, if they're healthy and they have that substantial population, they will.

Natural pollinators don't have that. If we were to rely on natural pollinators, we wouldn't get the pollination effect, simply because natural pollinators don't start pollinating until much later in the season. Because bees are a social insect, they can start here right now.

Right now at my farm, I have bees flying on all the poplar trees, making sure that there's going to be good cross-pollination for all the poplars that are out there. They're then going to go to the pussy willows, then they're going to the crocuses, then they're going to go to the dandelions and then they're going to go off to the clovers, the caraganas, the lilacs and to everything else. In the fall, the last thing they pollinate is pine trees.

**Mr. Arnold Viersen:** I have one more thing. When we're talking about cattle, we think of individual cows. When we talk about bees, I like to think about individual bees, but people have been telling me that when you're thinking about bees, you should be thinking about the entire hive or an entire group. It's that ball that you're talking about and the health of that ball, or the size of it.

Can you explain that a bit better than I could?

• (1655)

**The Chair:** You have about 20 seconds.

**Mr. Ron Greidanus:** It's a bit of a misnomer.

Everyone likes to equate a bee to a cow or a chicken—not so.

It is that colony, the cluster of bees living on that comb, that is the living organism. That is the revenue unit, and that's how you need to be seeing it.

It is more akin to a gopher that comes up in the spring, walks around in your yard and then goes back into dormancy in the winter time, or a bear.

It is the hive that is the living organism.

**The Chair:** Thank you very much, gentlemen.

Mr. Drouin, you have six minutes.

**Mr. Francis Drouin (Glengarry—Prescott—Russell, Lib.):** Thank you, Mr. Chair.

I want to thank the witnesses who are before us today.

Mr. Greidanus, I want to thank you personally. We've had the opportunity to meet a few times, and I know you're from multiple generations of bee farmers and have contributed significantly to the economy in Alberta. I want to thank you for that.

Canada has a 5,000 or 6,000 kilometre border, and the likelihood that... I want to touch on the packaged bees that are not coming into Canada from the U.S. because the science has not been updated, and to talk about the risk factors, according to your expertise.

The likelihood of U.S. bees coming into Canada, in border towns where there are two farmlands very close together...and I've been in B.C. recently. You have East Boundary Road and 0 Avenue that are about three metres apart with a small fence. Since the pandemic they put that fence up, but it certainly doesn't stop bees from crossing the border. I don't think they go through border control before they cross the Canadian border.

According to your expertise, how could we safely import U.S. packaged bees into Canada?

**Mr. Ron Greidanus:** That's a very good question, and it deserves a lot longer answer than what I can give.

I will give a short answer here, but if you would like, I could follow that up with an e-mail after we've had the meeting here.

There are four risks that are identified in the 2013 risk assessment. Those risks are varroa resistance to amitraz, resistant American foulbrood, small hive beetles and Africanized honeybees.

The amitraz-resistant varroa is something that we have in both countries right now. It is in the United States. The tech teams have been doing some initial research to find out whether we have it here in Canada, and it appears that we do have resistance here in Canada, as well.

One thing we need to be very careful of is whether it is resistance or efficacy. The likely answer to that question is that it's a little bit of both. It's already here. We've already been using amitraz for a number of years. There is already resistance in Canada. I think it's a moot point.

We have had resistant American foulbrood in Canada since the early 1990s. I remember bringing in palettes of bees from Australia and shaking them into our hives, and then the hives crashed. We lost hundreds of thousands of dollars because there was resistance to American foulbrood in our own operations here in Canada.

The other pest risk that's been identified there is the small hive beetle. This is an economic threat, especially in the southern states. However, it is endemic in parts of Canada here already. If you talk to Paul Kozak, the provincial apiculturist for the Province of Ontario, he will testify that it is endemic in southern parts of Ontario, around the Niagara, Niagara-on-the-Lake, Hamilton and London area. It's also found in New Brunswick. It's found in Quebec. We have also had findings of small hive beetle in Alberta and in Manitoba, and just recently, this fall, in British Columbia, which Paul van Westendorp can testify to.

The reality of small hive beetle is that it fails to establish or thrive in Canada, and the economic losses that are associated with it just have not materialized. They have not materialized here in Canada, and they have not materialized in the northern United States either—the northern states that border Canada.

One of the things that needs to be done is a reassessment of what it really entails. It might be a reportable pest, but is it a pest that actually causes any economic harm in Canada? My assertion is no, it's not going to cause economic harm here in Canada.

That leaves the last pest, which is Africanized honeybees. There has been a mountain of research that has started to come forward and evidence from the last 30 years in the United States suggesting that it is not able to survive north of a climatic wall that we have in North America. I talked about how bees survive winter. With Africanized genetics, what we're worried about is the aggressive, protective behaviour and the propensity to swarm. That also comes with a failure to be able to cluster at cold temperatures. Those hives die in the first season they're here.

We don't have enough time here for me to get into all the details of that, but protocols can easily be developed to address some of these risks. For Africanized honeybees, ship the bees on a pheromone strip, and get a queen from some other part of the world that doesn't have Africanized genetics. It's not an issue; it dies right there in your yard.

• (1700)

**Mr. Francis Drouin:** If we were to start importing packaged bees from the U.S., are there certain regions you wouldn't touch, or would you implement stricter protocols to ensure that the risk factors you've mentioned wouldn't be present?

**Mr. Ron Greidanus:** At present, the Alberta Beekeepers Commission is advocating for importing packaged bees from northern California. Simply, we've historically imported queens from northern California since 2005 into Canada without any incident of any failure of any sort. We would like to start there. I don't know how regionalization would all work; I can't speak to that. What we're advocating for is starting with northern California.

**The Chair:** Thank you, both.

[Translation]

I will now turn the floor over to Mr. Savard-Tremblay for six minutes.

**Mr. Simon-Pierre Savard-Tremblay (Saint-Hyacinthe—Bagot, BQ):** Thank you, Mr. Chair.

I also want to thank all the witnesses for their testimony and for being here today.

My first question is for Mr. Guzman.

On Monday, the committee heard from a number of beekeepers, who confirmed that we import a lot of queen bees in Quebec and Canada.

You can to confirm or deny that information. If it is true, of course, can importing foreign queens and drones alter the genetics of the bees we have locally, which are adapted to our climate?

[English]

**Dr. Ernesto Guzman:** I understood only part of what you asked because I don't speak French—

**The Chair:** Dr. Guzman—I will stop the clock quickly—there is on your Zoom call an ability to toggle between interpretations. We have interpretation here in the room, so maybe what I would ask is that we let Mr. Savard-Tremblay ask his question again. You can make sure that you toggle over to English, and then you'll be able to hear the translation clearly, and we don't have to worry about your maybe not understanding the whole premise of the question. How does that sound?

**Dr. Ernesto Guzman:** It sounds good, but I need help from a technician to set up the system.

**The Chair:** At the bottom of your screen, I believe, Madam Clerk, unless I'm wrong, there is an ability to click on interpretation and hit English.

[Translation]

**Mr. Simon-Pierre Savard-Tremblay:** Mr. Guzman, let's do a test. Can you hear in English what I'm saying to you through the interpreters?

[English]

**Dr. Ernesto Guzman:** I don't have that option here.

I'm working with a Mac, so that's probably the issue. I don't have that option of translation.

**The Chair:** Okay, we'll suspend for a second.

• (1700)

(Pause)

• (1705)

**The Chair:** We're back.

Mr. Savard-Tremblay, I'm going to let you ask questions of people other than Dr. Guzman, and I'll keep an eye on the time.

[Translation]

**Mr. Simon-Pierre Savard-Tremblay:** I have several questions for Mr. Guzman, but I also have one for Mr. van Westendorp.



According to some beekeepers, at present, a number of them lack basic training and tools that are acquired through teaching for fully performing their work. We were told on Monday—I was also replacing someone on this committee—that new beekeepers did not have access to any special training.

Do you think that could have an impact on losses during winter management, for example?

[*English*]

**Mr. Paul van Westendorp:** I cannot speak for other provinces, but here in British Columbia, to address this issue of so many people being interested in bees and beekeeping, the ministry offers a free beekeeping course every year, which has an enrolment of 700, 800 or 900 people. We are trying to do our best to convey the best management practices to as many beekeepers as possible.

The losses I was referring to earlier are universal. They are not merely among new beekeepers, and I'm not suggesting that all commercial beekeepers do not necessarily always apply the best management practices. There is always room for improvement, but many of them are certainly adhering to practices that fall into the category of being good beekeepers. It's not merely ignorance or lack of training that has contributed to high losses.

**The Chair:** Mr. Savard-Tremblay, you have approximately four minutes and 15 seconds left.

[*Translation*]

**Mr. Simon-Pierre Savard-Tremblay:** So that is what is left of my six minutes of speaking time.

[*English*]

**The Chair:** Yes.

[*Translation*]

**Mr. Simon-Pierre Savard-Tremblay:** I don't know where we are in working with Mr. Guzman, but...

[*English*]

**The Chair:** We're still working on that. I can go to Mr. MacGregor if you'd like, and we can reserve your time. You have about four minutes left.

Mr. MacGregor, why don't you go ahead now?

**Mr. Alistair MacGregor (Cowichan—Malahat—Langford, NDP):** Thank you, Chair.

If Mr. Guzman is in fact listening, I can start with him.

Mr. Guzman, are you hearing me right now?

**The Chair:** It doesn't sound like that's the case, Mr. MacGregor. Why don't you proceed with your questions without Mr. Guzman and we can come back to you?

**Mr. Alistair MacGregor:** Maybe I will turn instead to the B.C. government.

Mr. van Westendorp, I was noticing on the Government of B.C. website that you have a food for bees program in place. I know that it focuses mainly on wild pollinators. We have many different species.

I'm not going to discount the hugely important role that commercial bees play in sustaining our commercial crops. You mentioned our \$400-million blueberry industry in British Columbia.

I'm just wondering, in tackling native pollinators, what have the efforts been like? Has there been any corresponding value in those programs, like seeing an increase in their population that could maybe help to alleviate a small fraction of the issues we're seeing with commercial operations?

**Mr. Paul van Westendorp:** Wow. Look, in order to substantiate claims about the decline or the upsurge of native pollinator populations, you would require a fair bit of field trials and studies. It is well known that the world of native pollinators is poorly researched. There is generally not enough money available.

Ironically, honeybees are the most researched insect in the world, I would think, because so much of our agriculture economies are dependent on them.

You referred to our web page on food for bees. That was largely designed to assist greater diversification, shall we say, and sustainability of local environments. I'm not talking about gardeners so much, but farm practices, reclamation projects and mines. Things of that kind are really all benefiting from a greater flow of diversity that provides food sources for native pollinators.

As well, in my outline that I provided in my speaking notes, I think it's important to recognize that one of the contributing causes to the decline of honeybees but also of many of the other pollinators is that if we really examine the landscape of North America, this has transformed drastically in the last 50 years.

From a great diversity of floral sources and undisturbed habitat, we have gone wild on producing all kinds of monoculture crops and on the removal of undisturbed habitat. We have failed to recognize as a society the intrinsic value of many of these habitats that contribute to sustaining wild pollinators, as well as other small creatures in this world—

• (1710)

**Mr. Alistair MacGregor:** I'm sorry to interrupt. I appreciate your outlining the problem.

What would you like to see in our committee's report in terms of a recommendation that would maybe help provincial government efforts in trying to reverse that particular problem?

**Mr. Paul van Westendorp:** Oh boy, you've put me on the spot.

**Mr. Alistair MacGregor:** You have about a minute.

**Mr. Paul van Westendorp:** All I can say is that we could certainly learn something from the European Union, where they have had subsidies offered to farmers to preserve hedgerows, riparian zones and undisturbed habitat to facilitate the presence of wild pollinators and a lot of other creatures, not just merely those pollinators—

**Mr. Alistair MacGregor:** Thank you very much for your answer. I'm really sorry to interrupt, but my time is limited.

Mr. Greidanus, I would like to turn to you. You have outlined very clearly the kinds of recommendations you'd like to see in our report, and I think you'll see agreement amongst the members here to try to honour those.

I would like to know a little more about honeybee breeding. I understand the challenges that face them. Within the main class of honeybee we have and that's prevalent around North America, are there any sub-variations? Has there ever been any success or do you foresee any success in trying to breed particular traits that might alleviate some of these issues?

**Mr. Ron Greidanus:** Yes, there's a whole pile of different subspecies. The general species is *Apis mellifera*. There are subspecies of *Apis mellifera*.

From Africa, there are four subspecies. Paul van Westendorp can probably name them better than I can. I can name three of them. There are *Apis mellifera lamarckii*, *scutellata* and *monticola*. I think there is one more.

Paul, you might have to jump in there and help me out.

As far as what we have for European honeybees is concerned, there are the Italian subspecies. There is a Caucasian subspecies and a Carniolan subspecies.

What we do is breed for winter survivability. We breed for how much honey they are going to produce. We breed for how aggressive and how mean they are to work with, because it's not pleasant when you go out and get stung 100 times a day, working with the bees or whatnot.

These are specific traits. One of the next witnesses I see in the back of the room, who is going to be testifying, is Maggie Boudreau. She is a queen breeder here in Quebec, and yes, we breed specifically for that.

It takes a long time here in Canada to breed bees. Typically, if you are a queen breeder, you would use artificial insemination and you would be able to ramp up the process. As commercial beekeepers, we use an open mating system whereby we choose hives that have drones with traits that we like, and we make queen cells from hives that we think would be good. They seem to survive winter well, are not too mean and produced a lot of honey last year. We make queen cells from them. When they hatch out, we make sure that they go and mate with drones from that bee location over there. We get one season, so it's a long, drawn-out process.

• (1715)

**The Chair:** Thank you.

We're going to have to leave it at that. I gave a bit of extra time.

[Translation]

Mr. Guzman, are you hearing me?

[English]

Can you hear me?

Great, okay—

**Dr. Ernesto Guzman:** I can. I hear you in English.

[Translation]

**The Chair:** Perfect.

Mr. Savard-Tremblay, the floor is yours for four minutes.

**Mr. Simon-Pierre Savard-Tremblay:** Thank you, Mr. Chair.

Mr. Guzman, the committee has heard a number of beekeepers, in particular this past Monday. They told us that a lot of queen bees were imported to Quebec and Canada. Correct me if I am wrong.

Does importing foreign queens and drones risk altering the genetics of our local bees, which are adapted to our climate?

[English]

**Dr. Ernesto Guzman:** Yes, if bees develop in a particular environment, they are more adapted to that particular environment. If we raise bees here in Canada, they will be more adapted to our conditions. If bees are imported from other regions of the world and raised in those regions of the world, they will be adapted to those regions of the world, so what's important is that we import bees from locations that have similar conditions to ours.

However, I have to also say there is genetic plasticity in bees, so bees that are raised in a particular environment can adapt to another environment, but it's just a proportion of them.

[Translation]

**Mr. Simon-Pierre Savard-Tremblay:** In that case, why not produce our own bees here?

Are there barriers to doing that?

At present, are we seeing a lack of will, resources or training for that purpose, given the real risk of importing varroa at the same time as the bees that are ordered by beekeepers as well as the costs of importing?

Why could we not simply expand the production of queens and become autonomous?

How would that not benefit us?

[English]

**Dr. Ernesto Guzman:** I'm totally in favour of that option of being self-sustainable. I'm totally in favour of promoting the strengthening of our bee breeding industry.

There are obstacles, of course, that we must consider. We have a short season for queen breeding here in Canada compared to the U.S. or other countries. We can produce fewer queens here than beekeepers in more temperate climate regions can produce, because we cannot work all year long, so that limits the number of queens that we can produce.

Also, when we produce queens here, it happens to be late in the season and then many beekeepers don't want those queens, so what we need to develop is new technology to overwinter those queens that were produced in one particular year to be used the following year. However, we don't have that technology in place and it has to be developed.

We also need to develop more efficient methods of nucleus colony production to be self-sufficient.

[*Translation*]

**Mr. Simon-Pierre Savard-Tremblay:** Since I have only 45 seconds left, I'm going to go back to Mr. Westendorp, whose answer was that there was this kind of training in British Columbia.

I'm going to ask the question I asked before in a different way: how does that amount to unbelievable added value? We might well hope it would snowball, but how is having adequate training a model to follow?

[*English*]

**Mr. Paul van Westendorp:** I don't know how to answer that question exactly other than to tie into what Dr. Guzman just mentioned. The difficulty that we have, since the border was closed to the import of bees from the United States, which was occurring in 1987, is that since that time, 35 years later, we still do not have a very large increase in the ability of British Columbia beekeepers to produce stock sufficient to meet the requirements in the prairie provinces. There are some excellent producers, but they are not sufficient to produce that number, regardless of the training these beekeepers have.

• (1720)

**The Chair:** Okay, we're going to leave it at that. I'm going to have to take a little bit of time off your second round because we went overtime.

Colleagues, I'm going to turn to Mr. Barlow. Normally, it would be for five minutes. I'm going to ask you to do that good work in four, if you can, so we can keep this thing on track.

**Mr. John Barlow (Foothills, CPC):** Thanks, Mr. Chair. I'll do my best.

To Mr. Greidanus and Mr. Olthof, the Conservative members wrote a letter to Minister of Agriculture and Agri-Food more than a year ago asking her a couple of very succinct things. One was to do another risk assessment of importing bees from the United States, and another to continue to invest in research and technology, and also for her to bring up this issue at the next provincial-territorial ministerial meeting.

In more than a year, we still have not had any response from the minister as to why a new risk assessment couldn't be done. We certainly understand, as you have all articulated, the important role played by these pollinators not only in the bee industry but also certainly for every commodity that we grow.

I'm assuming that your groups have made a similar request of the minister. Have you had a response, and what was that response?

**Mr. Jeremy Olthof:** I'll take that one.

It goes back to my comment about the ineffectiveness of the CFIA, as it stands right now, in not having a bee expert in house, not willing to meet with industry and not communicating what is going on. We just recently got a reply that they would not communicate with us because of the lawsuit. It's unacceptable. These are time-sensitive issues and we're getting a non-answer.

**Mr. John Barlow:** Have you asked for another risk assessment by CFIA?

**Mr. Jeremy Olthof:** Yes.

**Mr. John Barlow:** Have they given you a reason they will not do that?

**Mr. Jeremy Olthof:** No, and I have no faith that it will get done before this lawsuit goes through—zero.

**Mr. John Barlow:** Okay. Just on the same wavelength then, I'll go to Mr. van Westendorp.

You mentioned that the last time there was a risk assessment was 2018. What were the reasons—

**Mr. Paul van Westendorp:** No, it was 2013.

**Mr. John Barlow:** Okay, thank you. It was 2013.

Were the reasons that the border was not open? Were there still some concern with some of the viruses or pests that could be brought across? In your opinion, with the mitigating factors that have now been addressed today or changes in protocols, is another risk assessment worthwhile?

**Mr. Paul van Westendorp:** Absolutely, a lot of things can change in 10 years. The 2013 risk assessment was not universally supported by everyone, and I'm not talking here from a commercial perspective; I'm talking here from a scientific assessment. Some of these arguments that were raised were somewhat moot. For example, it was identified that the resistant American foulbrood disease was a serious threat. Ironically, we in British Columbia—and I'm proud of it—confirmed the presence of resistant American foulbrood disease 16 years prior in 1997. Even then, the risk assessment was not entirely universally supported.

**Mr. John Barlow:** Thank you very much.

The last question is for Mr. Greidanus. In your submission, you had a really interesting comment. You said that by importing or relying almost solely on importing bee packages from New Zealand and Australia, "They buy us time, but they don't get us out of debt. I strongly suspect we have bought ourselves a problem."

What do you mean by that? Can you elaborate on that? I'm assuming that, if we do not expand the sources of our pollinators, our yields on canola and all of these other products might be in jeopardy.

**Mr. Ron Greidanus:** I want to give an anecdote from my own operation. For years and years, I tried to build up my operation and expand the number of hives that I had. I was buying packages from New Zealand. I would take those packages and shake the contents into my hives. In the first spring, they would do all right. It would take a long time to build up, because we're getting bees that are ready to go into winter and then putting them into spring, hoping that they're going to behave like spring bees. It takes a little while for that to happen.

They would go into winter not too badly. The next spring they would come out. They would be some of the best bees that I had. I would find by the third spring that when they come out of winter there was a 50% to 80% winter loss among them. I was scratching my head trying to figure out why that was happening. The one hypothesis I have regarding that is that New Zealand has varroa mites. They have been using Apivar there for an awful lot longer... Perhaps the varroa mites that are coming in with these packages have a degree of resistance, and I'm bringing that into my operation. I've been importing that in there.

Furthermore, if I buy packages from Australia or New Zealand, and I have them with queens from there, most of those bees will not make it through that first winter, because they are not genetically adapted to being able to survive this winter. I need to buy them on pheromone strips, and I need to introduce queens where there's been a partnership—like Albert Robertson, from Saskatchewan, has with Olivarez queens in California—and with genetics that work here in Canada.

• (1725)

**The Chair:** Thank you.

Ms. Valdez.

**Mrs. Rechie Valdez (Mississauga—Streetsville, Lib.):** Thank you, Mr. Chair.

Thank you to the witnesses who have joined us for this committee.

Through you, Mr. Chair, I'll direct my first questions to Mr. van Westendorp.

I read in an article that some beekeeping best practices include natural and non-toxic pest control methods that are critical for ensuring the health of bee colonies and promoting the sustainability of the industry. These best practices are to help protect the environment and promote biodiversity.

Do you agree with this, and do you have anything else you'd like to add?

**Mr. Paul van Westendorp:** Everybody agrees to the principle of natural beekeeping and the wonderful things we can do with the bees, but the reality is as follows. With the severity and the sheer virulence of many of the pests that our honeybees face today, they cannot survive without the serious help and assistance of beekeepers. Natural beekeeping is wonderful. You can put your spearmint oil into a hive, and yes, you may get 10% control over your mites. I'm not worried about the 10%. I'm worried about the non-efficacy of the 90%.

It has been proven over and over again that, for better or worse—and again, I don't want to sound too negative—beekeepers who tend to follow that strategy generally lose their bees fairly quickly. It's not just that. When these bees are harbouring all these diseases, it's not that they die from one day to the next. They basically die slowly, and they export all these diseases to other colonies.

On Vancouver Island, I've heard so many times commercial beekeepers being utterly frustrated, because they're doing everything right, except the rate of reinfestation into their colonies is terrible. There are quite a lot of small-time, hobby beekeepers who basically

have their natural, philosophical approach to beekeeping, and the result of it is that these bees die.

**Mrs. Rechie Valdez:** Thank you.

Mr. Chair, I'll direct my next questions to the Alberta Beekeepers Commission.

I read in a CBC article that in Alberta there are bee hotels and that this project has helped roughly 300 native bee species in Alberta, particularly the vulnerable species. Can I get your thoughts on whether this is a viable method to sustain bees?

**Mr. Jeremy Olthof:** I can take it.

Yes, in Alberta we've actually done quite a bit of work—not me, personally, but I know there are a few people in Calgary who have. I think Ron Miksha is doing a lot of work on native pollinators. There's quite a bit going on in Alberta. I can get quite a bit of information on native pollinators.

Promoting the headlands and the...as mentioned before.... There's an advertisement going on in Alberta right now: Don't crop to the edges. We need those headlands for the native pollinators.

We're continually trying to work with municipalities on roadways, on trying not to mow everything. Yes, promoting those native pollinators is important. We've been trying to do work towards that.

**Mrs. Rechie Valdez:** I have one last, quick question. Are there any initiatives or projects that you're working on that can help with the sustainable beekeeping practices, which you may not have mentioned already?

**Mr. Jeremy Olthof:** I'll go back to the tech teams. I'm very proud of the work that our tech team has done this year. That's one of the main recommendations I would like to see. Lots of the provinces' tech teams are jumping from year to year and struggling to keep the funding going, but the extensions and projects they're doing are critical to our industry.

**Mrs. Rechie Valdez:** Thank you.

**The Chair:** We'll have to leave it at that.

Mr. Savard-Tremblay, we'll go to you for literally just one question and answer, if you could, because we're really at time, and then I'm going to go to Mr. MacGregor. That's for no more than two minutes. I'll be very strict.

Also, then, Mr. MacGregor, again, if we could keep it tight...?

[Translation]

**Mr. Simon-Pierre Savard-Tremblay:** I have a short question for Mr. van Westendorp.

You seem to be well informed on this issue. From what you observe, could climate change be worsening the bee situation?

• (1730)

[English]

**Mr. Paul van Westendorp:** The problem is, of course, that the variability from a year to year is often more significant than a general trend in climate change. Certainly, climate change will have a huge impact on the presence and the well-being of many feral populations as well as the honeybees, but this is stretching over a human lifetime, while there is much greater variability from a year to year, which will have a far greater impact on bees. That's basically the short answer to your question.

[Translation]

**The Chair:** Thank you, Mr. Savard-Tremblay.

Mr. MacGregor, the floor is now yours for a maximum of two and a half minutes.

[English]

**Mr. Alistair MacGregor:** Thank you, Chair.

For Mr. Greidanus and Mr. Olthof, several witnesses, including you, have recognized the importance of having a lot more floral variety for bees, not just the commercial crops but not mowing the roadways, etc. I think you recognize the importance of it to your operations. Farmers who depend on your operations can also see the benefit.

Is there enough natural incentive for that to happen? Or do you think there's something that our committee could include as a recommendation in our report, i.e., can the government step in to incentivize this a little more? I'd like to hear your honest opinion on what's going on in Alberta.

**Mr. Jeremy Olthof:** Well, I know it's not going in the right direction right now. We always joke that a farmer's winter hobby is getting a high hoe and plowing wetlands, because they have to farm every square inch. Land is incredibly expensive. They have to get every dollar out of every acre. A lot of times, that comes at the expense of headlands.

There's a lot of good work. I know that there's a new program for cover crops and promoting that. I love the idea of the European model, where you're given subsidies of some kind for the wetlands or something like that, but I definitely think there's more work that can be done for this.

**Mr. Ron Greidanus:** I know that this is something that has come up in the past. It's something that I talked about with Mr. Drouin back in March when I met with him.

The bottom line is this: Farming has to be profitable. Everybody wants to have sustainability. Everybody wants to have biodiversity. Everybody wants to have leave the environment in a better way than we found it, for the future generations. Bees do play an important role in that. They are sitting at the crossroads for that, but farming has to be profitable.

If it's not profitable and there's no... If you're only allowed to make so much and it just keeps getting smaller and smaller, there's no future in it. What ends up happening is that you end up farming every last square inch to make some money to be able to pay the bills.

Farmers are no different than the people with PSAC who are striking right now. They just want to be able to pay their bills. They want to be able to feed their kids. They want to be able to take their wife on a vacation somewhere nice once a year. That's all they want.

You have to have profitable farming. Profitable farming is going to give you biodiversity. It's going to give you sustainability. It's going to give us the ability to keep our bees alive.

**The Chair:** We'll have to leave it at that, gentlemen.

Thank you, Mr. MacGregor.

Thank you, Mr. Greidanus.

Colleagues, that ends our first panel, but just before you leave, on your behalf, let me thank Mr. Greidanus and Mr. Olthof, and also Mr. Guzman and Mr. van Westendorp for joining us online.

Thank you so much for your work in agriculture, and thank you for taking the time to be here today to help inform our work as it relates to bees.

Now, colleagues, just before we let Mr. MacGregor take the limelight up here, I want to say a couple of things.

On Monday, we are going to be heading back to drafting instructions vis-à-vis environmental contribution. This study is going to incorporate from both the 43rd and the 44th Parliaments, and we're going to be doing the consideration of draft report number one on food price inflation. That's on Monday.

Mr. Lehoux, in relation to your motion that was approved and adopted at our last committee, we're shooting for May 8. That is what we're working on: Monday, May 8. We're sending out invitations. They are going out. It's not all confirmed, but that's what we're shooting for, and I will have an update, hopefully, by next Monday.

Okay, colleagues, it's over to Mr. MacGregor.

Thank you to our first round of panellists.

I will suspend for a moment.

• (1730)

(Pause)

• (1740)

**The Acting Chair (Mr. Alistair MacGregor (Cowichan—Malahat—Langford, NDP)):** I call the meeting back to order.

Welcome back, committee members. Welcome to our second hour today.

Appearing today before the committee for the second hour, we have Apicultrices et Apiculteurs du Québec and Maggie Lamothe Boudreau, vice-president. From the David Suzuki Foundation, we have Lisa Gue, manager of national policy. Also, from Les Ruchers D.J.F. Inc., we have Jean-François Doyon, president.

Welcome to each of you. Thank you for joining us today. You will each have five minutes for opening statements, followed by questions from members of the committee.

I'll try to keep it on time. I'll give you a little signal when you have about a minute left.

With that, Ms. Lamothe Boudreau, you now have the floor for your five-minute opening statement.

**Ms. Maggie Lamothe Boudreau (Vice-President, Apiculteurs et Apicultrices du Québec):** Thank you very much.

Hi, everyone. I'm the first vice-president of the Quebec association.

[*Translation*]

I have no trouble speaking English, but my mother tongue is French, so I am going to continue my presentation in French.

My name is Maggie Lamothe Boudreau and I am the first vice-president of the Apiculteurs et Apicultrices du Québec.

Five minutes is not a long time to talk to you about all the problems that beekeeping faces every year in Quebec and Canada. In addition to the extremely high rates of inflation we have been seeing for about a year and a half, and the constantly rising interest rates, the beekeeping industry is facing annual bee mortality rates that are beyond comprehension in agriculture.

In Quebec, the annual bee losses suffered over the last 15 years have averaged over 25 per cent. In Canada, the average is about 27 per cent.

Last year, we suffered record losses. Almost 50 per cent of bees died. That has endangered the beekeeping industry in Quebec and the other regions of Canada enormously.

How can we make up for these losses in Canada at present? Unfortunately, we are turning a lot to other countries for imports. However, that comes with its own share of problems, since we are importing bees whose genetics are completely unadapted to our Canadian winters and our climate, which is more humid than in other countries.

These differences have led to the emergence of various diseases that have caused astronomical losses of hives and colonies for a number of commercial beekeepers.

We are also importing parasites, and that can really have harmful effects on bees. Examples are varroa and small hive beetle, which could present a very serious challenge across Canada.

There are also other problems, such as viruses, that could infect imported bees. It is very difficult to control the emergence of diseases caused by these viruses.

Several committees have been created in recent years, one being the Working Group on Honey Bee Sustainability, which has done a lot to define the objectives that the beekeeping industry must aim for in the coming years. It has offered some very interesting solutions.

I am talking about them right off the top because these are the most important points to address in the five minutes I am allotted. First, we have to aim for self-sufficiency. This is extremely important. Our local bees survive much better than bees that come from

Hawaii, for example, which have never seen winter, or from California, that are not at all adapted to our winters.

Second, we also have to improve disease management in Canada, including the diseases caused by varroa. Canada is much harder hit by this insect than are southern countries, because beekeepers have to manage their hives over the winter. Varroa consumes bees' fat reserves, and this significantly reduces their lifespan and makes them unable to survive the winter.

Other diseases are also carried by varroa, in particular viruses, which have a heavy effect on hives. Even if varroa is treated, and over the season a certain economic threshold is reached, it is too late, because the viruses have already spread. At present, we have few solutions for treating the virus, so in spring we find that the bees in our hives have died.

We also need to have access to adequate insurance and to assistance when we suffer losses in our businesses. I am a queen bee producer and a lot of my customers tell me terrible stories about their losses. Their children do not even want to take over the family business if adequate solutions to these problems are not found.

As well, we need to have access to biodiversity. Pollen is extremely important for bees. It enables them to feed their brood and supply them with all the amino acids needed to nourish them. A shortage of pollen for a few weeks affects not only the generation of bees that suffers the shortage but also the next three or four generations.

It is as if we and our children ate spaghetti for three weeks; we would lack vitamins and our children would not have all the vitamins they need in order to grow.

● (1745)

I think I have covered what I wanted to say. I have done it quickly, so please don't hesitate to ask questions.

Before the meeting, I sent you a much more detailed document. If you would like more, I can send you additional information afterward.

[*English*]

**The Acting Chair (Mr. Alistair MacGregor):** Thank you very kindly for your opening statement.

Ms. Gue, we'll now turn to you.

You have up to five minutes.

**Ms. Lisa Gue (Manager, National Policy, David Suzuki Foundation):** Thank you for inviting the David Suzuki Foundation to appear today.

I'll preface my comments by saying that, while I very much appreciate this opportunity to offer some additional perspective on bee health, it is unfortunate that the committee did not make space for more witnesses from environmental organizations during the course of the broader study. I can see only one on the list of 41 witnesses before these latest hearings, Ducks Unlimited. Other leading NGOs with expertise in this area are noticeably missing from your list of witnesses, and I'd encourage the committee to hear from groups like Équiterre, the Canadian Wildlife Federation and Farmers for Climate Solutions on the opportunities to reduce environmental impacts and advance sustainable solutions in the agricultural sector.

The decline of pollinators, including bees, is a global concern. A number of interacting factors or stressors have been identified that negatively affect bee health. These include disease and parasites, which you've heard a lot about already, climate change, habitat loss and pesticides.

I'm going to focus my comments on the latter.

In addition to honeybees, which have been the focus of much of the previous testimony, there are more than 800 species of native bees in Canada that also play an important role in pollination. If we don't hear alarm bells ringing for native bees, it's largely because there's no one to ring them. Beekeepers, of course, actively monitor honeybee populations, whereas, as you heard from the witness in the previous round, wild bee populations are not only harder to track, but there are also fewer resources available to track them, though we know that many of these populations are also in decline.

In fact, a recent study by the U.S. Center for Biological Diversity reviewed the status of all 4,337 North American and Hawaiian native bees and found that, among the species with sufficient data to assess their status, more than half are declining, and nearly one in four bees is imperiled and at an increasing risk of extinction.

In fact, the effects of many of the stressors on bee health can be more devastating for wild bee populations. Consider that, while beekeepers are seeking your support to restore honeybee populations, the effects of any of these stressors on wild bee populations is ultimately population decline.

I want to make a note that we are happy that the government is finally considering listing recommendations to the western bumblebee as well as the monarch bumblebee, which were found to be at risk in Canada way back in 2014. We support moving forward with the uplifting of these species and integrating measures to reduce pesticide exposure in all recovery plans for species at risk.

On the point of the western bumblebee, which was once common in North America, a very recent U.S. geological survey study found that increasing temperatures, drought and pesticide use have contributed to a 57% decline in its occurrence in its historical range in North America. One very interesting aspect of that study looked specifically at neonicotinoid pesticides and found that, in areas where neonics are used in agriculture, the western bumblebee is now less likely to occur. As the rate of neonicotinoid application increased, the bumblebees presence declined further.

I'll take one moment to say that neonics are a class of pesticides that are known to be particularly toxic to bees, as I'm sure you're

aware. They affect the central nervous system of insects, leading to eventual paralysis and death as well as chronic effects. It's a case study in the failure of Canada's pesticide regulatory regime that these chemicals continue to be widely used in Canada. It is one of the top-selling insecticides nearly a decade after they were first restricted and then later prohibited in Europe specifically to protect pollinators. A very recent review of the EU report reinforced their earlier findings that these chemicals pose a very high risk to bees.

● (1750)

Mr. Chair, I didn't get a chance to finish all of my remarks, but I will table with the committee some recommendations we have made for strengthening the Pest Control Products Act.

**The Acting Chair (Mr. Alistair MacGregor):** Thanks, Ms. Gue. You may have a chance to expand during questions with members.

Finally, Monsieur Doyon, you have the floor for five minutes. You are welcome to start now.

Thank you.

[Translation]

**Mr. Jean-François Doyon (President, Les Ruchers D.J.F. Inc.):** Thank you for having us here today.

My name is Jean-François Doyon and I represent the Groupe DJF. I have been involved in beekeeping for over 45 years, with my wife. We have two sons who are of the age to take over, but they are very worried about the bee losses suffered in the last several years.

To give you an idea of our business, last year we recorded losses that resulted in a deficit of over \$1.5 million in biological assets. You will undoubtedly understand that when you are 30 years old, that kind of deficit, combined with a net reduction in income, is very troubling. As well, with losses like that, my wife and I are having to postpone our objective of retiring.

Groupe DJF is a collection of several companies, one of which is Distributions D.J.F. Inc., which processes, packages and distributes honey under the trademark Le Miel d'Émilie. All our products can be found in the three largest grocery chains in Quebec.

Two of the other companies produce honey and engage in large-scale pollination. So we really are commercial beekeepers. We have over 10,000 hives, spread over three farms in the greater Quebec City region.

I am truly honoured to be here today to talk to you about the problems we have been experiencing with bees for several years, with which you are certainly familiar. This definitely shows the interest you are taking in these problems and in how useful bees are in the food chain.

I am going to skip over the details in terms of the percentages that bees contribute to food production, but I want to tell you that these insects are really very important. Together, we have to get a handle on things and do it fast. If we want to continue to have professional beekeepers, we are also going to need programs to help the next generation.

For over a year, we have had an app called "nectar". This is a tool for hive management and traceability.

Just now, I heard some descriptions of various training programs. A number of training programs are offered in Quebec. The "nectar" traceability system, for example, means that each hive has its own labels that we can use to see the movements of each of the hives, the provenance of the queens, and the varroa population counts. Every time we screen for varroa, it is recorded in our data, so when we suffer bee losses in the fall or winter, we know what caused them. We have very good hive monitoring.

Because we are a major player in Quebec, this system is very useful to us. However, it is harder to adapt it to the needs of small beekeepers, because it is designed for businesses of a certain size. So we are working with several beekeeping operations that are a bit smaller than ours to give them the opportunity to use our system.

In addition, we have observed certain trends since we started using this system a year and a half ago. We do suspect a number of factors that might explain bee losses, such as pesticides, viruses, varroa, and so on. We will have to look into this problem quickly and we are going to have to invest a huge amount of money in research.

Tech transfer teams were mentioned earlier. In Quebec, professional beekeepers really do not have access to very much in this area. It is important to provide them with access to teams like this, preferably Canadian.

I would also like to talk more specifically about spraying with neonicotinoids, these synthetic pesticides that are causing us huge problems.

Another problem we are having relates to new agronomists coming out of university. They are recommending spraying pesticides, when the trend is actually to regional seeds.

As well, we are asking farmers to develop buffer strips and sow nectar-rich plants. We are also asking them to stop mowing alongside roads and highways and instead plant nectar-rich flowers, to have flower diversity and let bees feed on good pollen.

• (1755)

Thank you.

[English]

**The Acting Chair (Mr. Alistair MacGregor):** Thank you to the three of you for your opening statements.

We are now going to open the floor up to questions from members. Leading us off will be the Conservatives.

Mr. Lehoux, you have six minutes.

• (1800)

[Translation]

**Mr. Richard Lehoux (Beauce, CPC):** Thank you, Mr. Chair.

I also thank the witnesses for being with us this afternoon.

I particularly want to say hello to Mr. Doyon, who comes from my riding. I am very happy to have him here today.

Ms. Lamothe Boudreau, I am going to start with you. You referred several times to the major losses your business has recorded in recent years.

What recommendations could you make to the committee in that regard, to help beekeepers achieve self-sufficiency?

**Ms. Maggie Lamothe Boudreau:** In Quebec at present a lot of research is being done about queen bees. The projects focus specifically on two techniques.

First, some research projects focus on creating a reserve of queens. In other words, instead of putting a single queen in the hive to spend the winter, you put 40 there. The quality has been shown to stay about the same. In fact, this was the subject of my master's project at Université Laval and we are just about to present the results.

The other project we have done a huge amount of work on in Quebec, in order to achieve self-sufficiency in Canada, is queen bee selection. When it comes to research, we are easily ten years ahead of the rest of Canada and even North America, given all the data we have. Quebec is actually very specialized in Holstein dairy cow and swine selection, for example.

We are currently gathering all our knowledge about bees using statistics software like animal BLUP: the best linear unbiased prediction method for animals.

As well, we are currently conducting a new project, which will be presented to Genome Canada, for which we are requesting \$1.8 million to get even further in the study of the bee genome.

**Mr. Richard Lehoux:** Thank you, Ms. Lamothe Boudreau.

That is very interesting, but you know our time is limited. You talked about risk management. I would like to know your opinion about the federal programs that are offered in this field at present. From what I understand, they are not suited.

What improvements should be made to these programs?

**Ms. Maggie Lamothe Boudreau:** We have to wait too long to get funds from the federal programs. As well, the funds are insufficient.



Honestly, my business recorded losses last year. Had it not been for the over-wintering insurance offered by Financière agricole du Québec, I might not be sitting here talking to you today. It is solely because of that money that I was able to pay my employees.

To train a beekeeper to the point where they start to be a bit self-sufficient in the hives, it takes at least three years. Retaining my employees therefore makes all the difference for my business.

In Quebec, there are gaps in risk management programs. So we definitely need assistance from the federal government.

Mr. Doyon may have something to add.

**Mr. Richard Lehoux:** I was about to ask Mr. Doyon about risk management programs. I will add to my question by addressing support for the next generation.

Mr. Doyon, you said you had someone to take over, but that they might not find the present situation as attractive as it might look.

**Mr. Jean-François Doyon:** Obviously, support programs need to be put in place.

Regarding the support programs for farmers offered by Financière agricole du Québec, let's say they aren't bad. However, the programs offered by the federal government are not really suited. We really do need help. The young people who are taking over have to be able to finance their business. We also need to be able to encourage them to take over.

**Mr. Richard Lehoux:** Ultimately, Mr. Doyon, one of the recommendations might be to adapt the succession program to the problems experienced in agriculture.

**Mr. Jean-François Doyon:** That's exactly right.

The federal beekeeping succession programs really do need to be adapted.

**Mr. Richard Lehoux:** As I understand it, Ms. Lamothe Boudreau, that is also what your research says. Ultimately, the amounts devoted to research have to be increased, to improve the possibility of achieving self-sufficiency.

**Ms. Maggie Lamothe Boudreau:** Yes, absolutely. We even need a research centre in Quebec. The existing centre is functional, but there must absolutely be more research done there.

**Mr. Richard Lehoux:** Yes, go ahead, Mr. Doyon.

**Mr. Jean-François Doyon:** We also very much need a tech transfer team. What we have in Quebec is meant for small beekeepers for whom it is a hobby. We were talking about that just now with the people from British Columbia. In Quebec, we have nothing for professionals, and it really is hard for them.

• (1805)

**Mr. Richard Lehoux:** I have a question relating to the federal government more specifically.

Do you think the Canada Food Inspection Agency has the resources and competencies to support beekeepers in Quebec, but also in Canada?

**Mr. Jean-François Doyon:** No one at the Canada Food Inspection Agency is really working for beekeeping.

For several years, we have been asking that certain acaricides be approved so we can get to grips with varroa. It is very complicated. If we talk just about formic acid, we can use it only two ways. There would be others, but it isn't regulated, so we can't do it.

**Mr. Richard Lehoux:** Okay.

To conclude, I have just one brief question.

What main recommendation would you like to see in the report we are submitting?

**Ms. Maggie Lamothe Boudreau:** I think it would be approval of the various treatments.

**Mr. Jean-François Doyon:** We have to get approval for different products, so we don't get resistance, so we can have a number of products in order to achieve self-sufficiency.

**Ms. Maggie Lamothe Boudreau:** That is also our recommendation.

**Mr. Richard Lehoux:** Thank you, Mr. Doyon and Ms. Lamothe Boudreau.

[English]

**The Acting Chair (Mr. Alistair MacGregor):** Thank you very much, Mr. Lehoux.

Next we will turn to the Liberals.

Mr. Louis, you will lead off for six minutes. You may start now.

**Mr. Tim Louis (Kitchener—Conestoga, Lib.):** Thank you, Mr. Chair. I appreciate it.

Thank you to all of the witnesses for being here.

I would start with Ms. Gue from the David Suzuki Foundation.

I am sure you put a lot of thought and effort into your opening statement, and you didn't get a chance to finish it. Before I ask a question, you said that you had recommendations for strengthening the pest control act.

Maybe you could read those into the record.

**Ms. Lisa Gue:** Thank you for the generous question.

We put forward a number of recommendations in the context of Health Canada's consultations last year on the targeted review of the act. I'd highlight three that are particularly relevant for this topic. Maybe I'll go to four.

One is to revise the requirements under the act for cumulative risk assessment. Currently, it's scoped very narrowly and requires a cumulative risk assessment only in the case of risk to human health.

When the PMRA assessed risks to pollinators from neonics, they were assessed independently, without any review of their cumulative effects on bee health or other pollinators, even though the science is well-established that they have both aggregate and synergistic effects.

I wanted to highlight our recommendation to regulate treated seeds under the Pest Control Products Act as pesticides. Outside Quebec, this is where we see a widespread use of neonics. Therefore, it is an important factor in environmental levels of the pesticide.

I want to mention that in Quebec, new restrictions were put in place by the provincial government that require an agronomist to certify a need for treated seeds for neonics in general. However, with respect to treated seeds, this has resulted in an almost complete reduction of the use of treated corn and soy seeds, which demonstrates the lack of necessity of these products that are nevertheless being used prophylactically and harming the environment.

Finally, require an assessment of species at risk, including the threatened bee species and their habitats, specifically within the assessments of pesticides.

If I can add on to the fourth, it would be for a full implementation of the new target seven, under the global biodiversity framework, under which Canada has committed to reducing pesticide risks by 50%.

**Mr. Tim Louis:** Thank you for reading that into the record.

You are saying that neonics are used here, but in Europe they're prohibited. There should be data that we could use without doing our own research.

Should we be looking to Europe for some answers?

**Ms. Lisa Gue:** We think it's important for Canada to maintain the capacity to do its own pesticide research evaluations, for sure, but it is a concern when you see such starkly different conclusions, and even a more recent assessment from the EU supporting its prohibition.

I would highlight, as well, that even more recently, the EU brought into place new MRLs for two of the neonics, which will, within a few years, prohibit neonic pesticides on imported foods as well. The statement from the EU in support of that recent decision said, "Food and feed consumed in the EU should not contribute to the global decline of pollinators," and I'd strongly recommend that this committee make a similar recommendation in its report.

• (1810)

**Mr. Tim Louis:** Thank you for that.

I will turn to Monsieur Doyon.

We heard from Ms. Gue that basically the reclamation of land, farm practices and any natural sources for pollination are important. If we could add biodiversity and floral sources and undisturbed habitat, that can increase the wild pollinators, and it also helps with bee health. But we also hear from farmers that farming has to be profitable, so every inch needs to be used. We also heard that possibly in other countries they are incentivizing that kind of reclamation.

Can you give some suggestions to this committee on how we can help incentivize farmers to do this kind of usage?

[*Translation*]

**Mr. Jean-François Doyon:** You are entirely right when you say the square centimetres have to be put to good use. That is obvious. However, it seems that 95 per cent of pesticides used in agriculture are not necessary. The problem is that the agronomists who sign the permits for spreading pesticides sign those permits because they have been hired in the past by the companies that produce pesticides. So it is profitable for the companies. However, it is not always necessary to have pesticides. It would help a lot to have incentives for this.

I would like to add that Canada is a honey exporting country. For some years, honey shipments have been denied entry to Japan, precisely because there started to be pesticides in the honey. We have to start asking questions about this.

[*English*]

**Mr. Tim Louis:** Mr. Chair, I only have 15 seconds, so I want to thank all the witnesses for being here.

**The Acting Chair (Mr. Alistair MacGregor):** Thank you very much, Mr. Louis.

I'm going to now turn to the Bloc Québécois. I would like to also recognize Monsieur Trudel. Welcome to our committee.

You may start now with your six minutes.

Please go ahead.

[*Translation*]

**Mr. Denis Trudel (Longueuil—Saint-Hubert, BQ):** Thank you very much, Mr. Chair.

Thanks to the witnesses for being here.

Mr. Doyon and Ms. Lamothe Boudreau, you can't know how happy I am to hear French being spoken. It is rare to hear French being spoken in the committees here.

Your testimony is very interesting. You talked about losses and so on.

Ms. Lamothe Boudreau, my first question is for you.

You talked about over-wintering queen bees in banks and self-sufficiency. Can we produce queen bees in Quebec? If so, how is it done?

You addressed that issue earlier, but what challenges would there be for producing queen bees in Quebec at this time?

**Ms. Maggie Lamothe Boudreau:** Queen bee production businesses are continuing to grow year by year. New beekeepers are also trying to start producing queen bees. Producing them is as simple as it can be complicated. You start with an egg, you graft it, and you get the royal cell. The queen mates in flight, hence the challenge with importing foreign genetics. You can't necessarily choose the male with which she will mate, so you have to put the queen bee in an isolated area. Once the queen has mated, you harvest it and give it to another beekeeper, or you use it yourself to start a new hive, a nucleus, and save a mother hive that had lost its queen.

At present, our challenge in Canada is in the spring. We are really not able to produce queens before early June. As well, when we come out of winter, there are often hives that no longer have a queen. At present, we unfortunately have to rely on imports. However, the project for over-wintering queen bees in banks, which is being developed in Quebec, allows 40 queens to be kept in the same hive. That means that there is a survival rate that can easily rise as high as 85 to 86 per cent, one queen can be kept, and the other 29 can be sold.

**Mr. Denis Trudel:** Right. That is interesting.

Do you think that better training for beekeepers and allotting additional resources to beekeepers would be a good thing for the industry in general?

**Ms. Maggie Lamothe Boudreau:** Training is actually accessible. We even have schools that offer training in beekeeping, such as the Collège d'Alma.

However, smaller beekeepers, for example, may want to have a hive on their lawn, behind their house, but have no idea how difficult it can be to manage a hive. They have to use veterinarians. They have to give the bees medicines. They have to give them treatments, a bit like dogs when they have to be treated for fleas. Varroa is a bee flea. There are also viruses to be managed. People are not aware of everything that the care they have to provide for a hive can involve.

• (1815)

**Mr. Denis Trudel:** Right. Thank you, Ms. Lamothe Boudreau.

Mr. Doyon, earlier, you addressed the issue of losses, and you said there are a lot. The federal government has a range of risk management programs. Ms. Lamothe Boudreau also talked about this.

Do you think the programs could be better aligned, between Canada and Quebec and the other provinces, so they would be better tailored to your situation? How could that be done?

**Mr. Jean-François Doyon:** Certainly there are already programs in Quebec for winter losses or crop insurance, but the federal government's share is really not huge, and I fundamentally believe that the federal government has to provide support for crop insurance and winter losses, because those losses are huge. A \$1.5 million loss is tough and it creates a difficult situation.

Ms. Lamothe Boudreau asked me a little while ago whether we had would still have started our business back up if we had not had insurance. We would have been bankrupt with \$1.5 million in losses, on top of lost income. Obviously we really needed support.

I would like to come back a bit to the question of importing packages of bees. We are not opposed to that, but we need to pay attention to the genetics we are developing, so as not to have Africanized cross-fertilizing with our queens. That is why Ms. Lamothe Boudreau said we had to have a closed area to be able to fertilize our queens.

We are not opposed to importing packages of bees, but we really have to pay attention to what we are importing. For example, this year, we are not able to get queens from Pope Canyon Queens in California because an Africanized gene was found.

**Mr. Denis Trudel:** Thank you, Mr. Doyon.

Ms. Gue, a number of articles and studies have reported the increase in varroa resulting from rising temperatures. In fact, everyone is talking about it. This phenomenon is associated with climate change.

Do you think that as the climate crisis worsens, we might see varroa become more widespread?

**Ms. Lisa Gue:** We do know that various factors are interrelated. I have seen studies that show a relationship between climate change and these diseases among bees. Studies also show that exposure to neonicotinoids makes bees more vulnerable to the effects of varroa.

**Mr. Denis Trudel:** Has there been an increase in neonicotinoids in the last few years, and is their use declining in Quebec and Canada?

**Ms. Lisa Gue:** In Quebec, the use of neonicotinoids has declined because of the provincial regulations. Elsewhere in Canada, we have not seen the same trend. It is very difficult to assess the situation because data is scarce. We have to rely on reports of pesticide sales. We are not seeing a decline elsewhere in Canada, despite the fact that they have declined significantly in Quebec. We can therefore conclude that they have risen elsewhere.

[*English*]

**The Acting Chair (Mr. Alistair MacGregor):** Thank you, Ms. Gue. We'll have to wrap it up there. That's the end of your six minutes.

Colleagues, I will be doing my line of questioning here from the chair.

Ms. Lamothe Boudreau, I'd like to start with you.

I really appreciate the testimony you have offered our committee from your expertise in breeding queens. One thing has struck me through these hearings. I think that we all know that, in farming as in nature, there is an evolutionary arms race that is going on. When pests overwhelm their hosts, some hosts will develop a trait, or farmers will seek to breed in a beneficial trait that allows it to survive certain climatic conditions or various pests.

I've just been curious, because I know we have one main species of honeybee, and there are a lot of subvariants. Given your expertise, when it comes to things like the varroa mite and the viruses that mite contains and other diseases that affect hives, is there any promise on the horizon from increased research and funding for bee breeding programs that it might be possible to select traits that allow bees to better withstand that?

I've been quite concerned from the testimony that we've heard about the development of certain species of varroa that are now resistant to conventional treatments. Again, this is part of the evolutionary arms race. They are going to develop traits that allow them to survive what we are using to treat them.

Could you offer some of your experience and expertise about the kinds of recommendations you'd like to see in this report? What promise is there in the future for bee breeding and selecting traits that may help us deal with some of these issues?

• (1820)

**Ms. Maggie Lamothe Boudreau:** Yes, there has been a lot of work on selection in Quebec. They have done some research also on bees that would actually be resistant or tolerant of varroa. We are not there yet—that's for sure. That's why I was talking a little bit earlier about other ways to treat them, because the industry has been keeping some of the homologations of some products up on their arms to save them.

But to get back to selection, yes, there is a lot of promise. We've been making a lot of headway in Quebec with the research chair, Pierre Giovanazzo. If we manage to get that financing from Genome Canada, we'll be able to get those snips off the bee genome, and we'll be able to go even faster. This is a three-year project that we're doing.

As queen breeders in Quebec, we've formed an association of queen breeders. As I told you a little bit earlier, we're already 10 years in advance on our selection program, because we're all keeping the family lines to end up with bees. And we have data. We have data that proves we are getting better and better each year at producing honey.

We have bees that are more hygienic, so if we start importing from.... I'm going to give you an example. In 2018, we received some bees from Australia. They were very weak against *couvain platré*, an illness from the bees. It was brought in by the Australian bees. The problem is that they came with the drones. As I was telling you earlier, the queens mate while they're flying. They'll mate with those drones that are weak against that illness, and the daughters will be weak against that illness, too. We end up diluting our genetics and all of our hard work so far. Before we started importing into Quebec, we had a local genetic that didn't show this illness. We've brought it back in from those importations.

Yes, there is selection, and it is possible. We're on the brink of incredible progress. We just need research, funding, a research centre, and it's going to work.

**The Acting Chair (Mr. Alistair MacGregor):** Thank you for that.

In the final minute and a half I have, Ms. Gue, I'd like to turn to you. My question is along the same lines of what Mr. Louis had asked Mr. Doyon.

We've heard of the financial struggles farmers are experiencing, which are forcing them to really farm every available square inch of land they have just to, in some cases, break even. We've had some witnesses talk about some of the incentives that the federal government maybe could play a role in—providing a more varied type of habitat, more floral options.

Is there anything you would like to add or expand upon that you'd like to see this committee really focus on in its report and recommendations? I'll just give you a 50-second warning.

**Ms. Lisa Gue:** Sure.

Thanks for the question. I appreciate that line of thinking.

I would encourage the committee to look to what's happening in the EU under the biodiversity strategy there, which does include a commitment to reduce pesticide use and risk by 50%. I think we need to pursue these goals, which Canada has also committed to under the new global diversity framework, understanding that this is the long-term thinking for a resilient and sustainable food supply in Canada as well.

I would encourage the committee to look at the financial incentives the European Union is including as part of that package. I do agree that such will be an important element of success.

It's an overlooked chapter in the just transition strategy, perhaps.

• (1825)

**The Acting Chair (Mr. Alistair MacGregor):** Thank you so much. I appreciate it.

We'll go to the second round, and back to my Conservative colleagues.

Welcome back to the committee, Mr. Shields.

You now have your turn for five minutes, please.

**Mr. Martin Shields (Bow River, CPC):** Thank you, Mr. Chair. I appreciate that.

Thank you to the witnesses for being here today. I appreciate it.

I'm going to ask you a slightly different question, in the sense that we now have digital logging for trucks. I brought this up at a previous meeting, and now do in the context of your moving very delicate loads. I don't know what your distance is, but when I bought it up in a different part of Canada.... At 12 hours those vehicles turn off. Are you experiencing any challenges with digital logs and moving loads of bees?

Ms. Lamothe Boudreau or Mr. Doyon, do you have any issues with the transportation of bees in the 12-hour digital...?

[Translation]

**Ms. Maggie Lamothe Boudreau:** I'm going to try to answer you, although pollination is not my specialty.

In the case of blueberries, which are probably the most remote right now, the trip can be done in 12 hours. However, if I am not mistaken, the breaks that truck drivers have to take present a problem. Taking breaks during long trips is not possible for beekeepers: if we stop and the sun starts to rise, the bees will take flight and we will lose them. The hives will die or suffer from overheating. They are piled on top of one another, and each of them produces 15 kilowatts of heat. It is therefore very important to keep moving and get where you are going quickly.

[English]

**Mr. Martin Shields:** Go ahead, Mr. Doyon.

[Translation]

**Mr. Jean-François Doyon:** For us in Quebec, pollination is not really a problem, particularly for blueberry fields. The log allows 14 hours: 12 hours' driving and two hours for meal breaks. Apart from a few exceptions, there is no problem in Quebec when it comes to the distances to be travelled for transporting bees. We can do a return trip between Beauce and Lac-Saint-Jean, but most beekeepers rent a motel room in mid-trip. There is a team to handle the loading and unloading and a new driver takes over, delivers the load, and comes back to sleep at the motel.

In terms of transportation, pollination is not a problem.

[English]

**Mr. Martin Shields:** Here's what we're competing with, though. The Americans have an ag exemption for three hours longer, so you're competing against the American ag industry. Their exemption is about 300 kilometres. That's something that has been brought up. I've heard from others in the bee industry that it's a challenge for them to make that.

[Translation]

**Ms. Maggie Lamothe Boudreau:** I would like to add that it can become a problem. One of the recommendations I make, to encourage Canadian self-sufficiency, is to simplify trade in queen bees and nucleus colonies between provinces. However, when you are transporting bees from one province to another, it takes longer than 12 hours and you are facing exactly the problem you describe.

It is important that we offer support in this situation. We have to get from point A to point B to unload the hives. We can't do it in the parking lot of a motel.

[English]

**Mr. Martin Shields:** Thank you. I appreciate that. I think we're identifying something that's existed now.... The U.S. has done it with those three hours to try to help the exemption in the ag industry.

Thank you.

You mentioned getting bees from Australia. Do you get them from New Zealand as well?

[Translation]

**Ms. Maggie Lamothe Boudreau:** It's the same problem everywhere in Canada. We can get them from Australia, Ukraine, Chile and New Zealand, actually.

However, the bees all have their own problems that are harmful to the genetics we are trying to establish, one way or another, in Canada.

[English]

**Mr. Martin Shields:** You mentioned research. Recently, I met with a lot of deans of the agricultural community in Canada. The dean from McGill said Canada has 1,200 researchers, and there are far less.... They said, "We do a lot of research on all of these topics and are willing to do more."

Have you approached the agricultural colleges and the deans, with their research capacity, to help you?

[Translation]

**Ms. Maggie Lamothe Boudreau:** I'm not sure I understood your question.

[English]

**Mr. Martin Shields:** I met with the deans of the agricultural institutions in Canada. The dean from McGill said that we have 1,200 researchers available across Canada to help research anything to do with agriculture, and many of them have experience in all the areas you might talk about.

Have you approached, for example, McGill University's ag department about helping you with your research?

• (1830)

**The Acting Chair (Mr. Alistair MacGregor):** Please make it a very quick answer.

[Translation]

**Ms. Maggie Lamothe Boudreau:** We have not been in touch with McGill University, but I know there are researchers there who are already doing research in the field of beekeeping. I would like to have their contact information and get in touch with them right away.

[English]

**Mr. Martin Shields:** They ask you to do it.

**The Acting Chair (Mr. Alistair MacGregor):** Thank you, Mr. Shields.

We'll turn it back over to the Liberals.

Monsieur Drouin, you have five minutes. Please go ahead.

[Translation]

**Mr. Francis Drouin:** Thank you, Mr. Chair.

I want to thank the witnesses who are with us today.

Mr. Doyon, you talked about the risk presented by Africanized bees. You may have been here when a witness made comments that were the complete opposite of yours. I am not an expert in this subject myself.

He said the risk was not high at all because those bees were going to die as a result of genetics and they would not be able to survive the Canadian winter. I would just like to know who is telling the truth. I don't want to put you on the spot, but I want to know why you are saying opposite things.

I would note that I consider both of you to be experts.

**Mr. Jean-François Doyon:** I understand you very well.

I said at the outset that we did not oppose importing, but we had to be cautious about Africanized genes. Assume that genes like this invade Canada or Quebec and drones from those hives arrive in the summer. I agree that they won't make it through the winter. However, if one of our queens mates with an Africanized drone during the summer that came from a hive brought in from the United States, the gene will be transmitted to the queen during fertilization.

Ms. Lamothe Boudreau is going to sell us queens with the Africanized gene, which will perpetuate itself over time. It is the transmission of the gene that is the issue. I agree that the Africanized bees won't make it through the winter. However, Ms. Lamothe Boudreau's bees that have the gene will. That is kind of how transmission can occur.

**Mr. Francis Drouin:** Okay.

Ms. Lamothe Boudreau, I am going to come back to you in a moment to talk to you about the 40 queens.

Mr. Doyon, there was talk about getting packages of bees from the United States. As we know, this is illegal at present. Ms. Lamothe Boudreau seems to be saying that with 40 bees in a hive, there might be enough queens in Canada or Quebec.

Do you support this approach, or do you think that it also involves risks? Before you say, would you like the Pest Management Regulatory Agency, the PMRA, to do more research?

**Mr. Jean-François Doyon:** I am neither for nor against this approach. However, I think the PMRA has to do research. I gave you the example of queens coming from California. This year, we won't be able to get any because the Africanized gene is present at one of the companies, Pope Canyon Queens, in California.

So we can't expand our hives very early in the spring. It will get done later in the season. As a result, we risk not being able to get to the level we need to reach. If the Africanized gene is imported to Canada, we will definitely have serious problems. There is also resistance to varroa, which is hard to control. The recommendation we make, to prevent resistance, is to approve several products rather than one or two. Before bringing packages of bees that are resistant to varroa, or Africanized bees, into the country, we really have to be sure of what we are doing.

**Mr. Francis Drouin:** Okay.

I have more questions I could ask, but I am going to focus on a solution that is possible in Quebec and Canada.

Ms. Lamothe Boudreau, how many years has the program involving 40 queens been in existence? Is this the first year it has been approved?

**Ms. Maggie Lamothe Boudreau:** No, it started in 2019 at the Centre de recherche en sciences animales de Deschambault, the

CRSAD, with the publication of Andrée Rousseau's article. My research project is the third in Quebec. If I am not mistaken, it is also underway in Alberta. Our results are extremely promising. We are now fine-tuning the technique. Mireille Lévesque has achieved a survival rate of more or less 75 per cent. In Andrée Rousseau's case, there is a survival rate of 86 per cent for the queens in her hive. It really is interesting.

The technique has to be fine-tuned. At the end of the season, we use the queens that are no longer attractive to the industry and we keep them until the next spring, so they are available at important points, that is, when we can form the nucleus colonies or divide our bee population and end the season with a sufficient number of hives. That is what is interesting.

• (1835)

**Mr. Francis Drouin:** That's terrific.

Unfortunately, I am running out of time, so I will not ask any other questions.

**Mr. Jean-François Doyon:** What Ms. Lamothe Boudreau is proposing is really important.

The spring is precisely when we need a lot of queens, but we have trouble getting them.

**Ms. Maggie Lamothe Boudreau:** The August queens are the best.

**Mr. Francis Drouin:** I didn't know that. It's very interesting.

[English]

**The Acting Chair (Mr. Alistair MacGregor):** Thank you very much.

Mr. Trudel, you may now go ahead for two and half minutes, please.

[Translation]

**Mr. Denis Trudel:** Thank you.

Ms. Lamothe Boudreau, we spoke earlier about varroa and climate change. You seemed to want to say something about that. I would like to hear it.

**Ms. Maggie Lamothe Boudreau:** Are you talking about the effects that climate change can have on varroa?

**Mr. Denis Trudel:** Yes, that's it.

**Ms. Maggie Lamothe Boudreau:** Yes, there are consequences. It is probably one of the many factors that have caused the losses we have suffered, which amount to 50 per cent, a record number. The previous fall had been incredible. You must remember: It was 25 degrees Celsius in December.

**Mr. Denis Trudel:** Are you talking about last fall?

**Ms. Maggie Lamothe Boudreau:** No, I'm talking about the fall of 2020.

**Mr. Denis Trudel:** Okay.

**Ms. Maggie Lamothe Boudreau:** We had an incredible fall, but those weeks of heat allowed the varroa to reproduce. The population of varroa in a hive doubled or tripled every two or three weeks. If there is only one varroa in the hive, there are only two after a while, but when there are 1,000, near the end of the season, it's explosive.

In addition, there were a few weeks the following spring. It was 20 degrees Celsius in April. That had never been seen in Quebec. So there was an extra month or month and a half during which the varroa multiplied. That doesn't jibe with the calendar normally followed in Quebec and Canada for treating against varroa.

That is why we are asking to have access to products and tech transfer teams in beekeeping that would make it possible to adapt treatments against the varroa. We need funding in Quebec and Canada to discuss techniques.

The provinces all have different techniques, but they are not necessarily known from one province to another. So we have to engage in dialogue and research.

**Mr. Denis Trudel:** I imagine the federal government could help coordinate it all. We might arrange for everyone to talk to one another, find the most effective solutions, and apply the solutions jointly. Is that what we're talking about?

**Ms. Maggie Lamothe Boudreau:** Yes.

**Mr. Denis Trudel:** Okay.

Since I have a minute left, I would like to quickly get a main recommendation from each of you three. You briefly mentioned it in your opening statements.

Mr. Doyon, is there a recommendation you would like to see in the report?

**Mr. Jean-François Doyon:** I recommend that a beekeeping support program be put in place in Canada.

**Mr. Denis Trudel:** Okay.

Ms. Gue, what would your recommendation be?

**Ms. Lisa Gue:** Once again, I recommend that there be discussion of the role of biodiversity protection in connection with the new commitments to ensure the sustainability of this industry.

**Mr. Denis Trudel:** Okay.

Ms. Lamothe Boudreau, what is your suggestion?

**Ms. Maggie Lamothe Boudreau:** I recommend self-sufficiency in Canadian beekeeping, which also includes disease management.

**Mr. Denis Trudel:** Okay.

Thank you very much, all three of you.

I have no other questions, Mr. Chair.

[*English*]

**The Acting Chair (Mr. Alistair MacGregor):** Thank you very much.

Colleagues, in the interest of time, I'm going to forgo my line of questioning, but I would like to thank our three witnesses for helping guide our committee through this study.

Second, I would like to thank committee members for placing their trust on my shoulders for this hour. It has been a pleasure to be your chair.

I have a few reminders before we adjourn.

To all members and staff, the deadline to submit the list of witnesses for our Indo-Pacific strategy study is May 4 at 4 p.m. The deadline to submit recommendations for the environmental contribution of agriculture, this current study, is May 8 at 4 p.m.

With that, colleagues, this meeting is adjourned.







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