C A N A D A

PROVINCE OF QUÉBEC
DISTRICT OF MONTREAL

NO : 500-06-000714-143

(Class Action)
SUPERIOR COURT

STEVE MARTINEAU, residing at 557, rang des Quatorze, Saint-Marc-sur-Richelieu (Québec) J0L 2E0

Plaintiff

c.

BAYER CROPSCIENCE INC., a legal person having an establishment at 160 Quarry Park Boulevard SE, Suite 200, Calgary, Alberta, T2C 3G3 Canada;

and

BAYER INC., a legal person having an establishment at 1250 René-Lévesque West, Suite 2820 Montréal, Québec, Canada, H3B 4W8;

and

BAYER CROPSCIENCE AG, a legal person having an establishment at Postfach D-51368, Leverkusen, Germany;

and

SYNGENTA CANADA INC., a legal person having an establishment at 2736 Route 235, Saint-Pie, Québec, Canada, J0H 1W0;

and

SYNGENTA INTERNATIONAL AG, a legal person having an establishment at Schwarzwaldallee 215, 4058 Basel, Switzerland.

Defendants

ORIGINATING APPLICATION - CLASS ACTION

(art. 141 and 583 *C.C.P.*)

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TO THE HONOURABLE THOMAS J. DAVIS, OF THE QUEBEC SUPERIOR COURT SITTING IN AND FOR THE DISTRICT OF MONTREAL, THE REPRESENTATIVE PLAINTIFF RESPECTFULLY ALLEGES THE FOLLOWING:

1. By judgment dated February 20, 2018, the Representative Plaintiff, Steve Martineau, was authorized to bring this class action on behalf of the following Class:

   "All persons in Québec who own or owned honey bees in the Affected Area during the Class Period."

"Affected Area" means the area located in, and within seven miles (approximately 11 kilometers) of, regions zoned and designated for agricultural use in Québec; "Class Period" means the period between January 1, 2006 and February 20, 2018;

2. This class action will resolve the following issues on a collective basis:

   (a) Can any neonicotinoid based pest control products researched, designed, developed, manufactured, marketed, distributed and sold by Bayer CropScience AG and/or Bayer CropScience Inc. and/or Bayer Inc. in Québec during the class period (i.e. imidacloprid, clothianidin and their related end-use products approved for agricultural use) cause honeybee colony loss resulting in financial damages or losses to beekeepers?

   (b) Can any neonicotinoid based pest control product researched, designed, developed, manufactured, marketed, distributed and sold by Syngenta International AG and/or Syngenta Canada Inc. in Québec during the class period (i.e. thiamethoxam and its related end-use products approved for agricultural use) cause honeybee colony loss resulting in financial damages or losses to beekeepers?

   (c) Did Bayer CropScience AG and/or Bayer CropScience Inc. and/or Bayer Inc. commit a fault in violation of section 1457 C.C.Q. in the research, design, development, manufacture, marketing, distribution and/or sale of neonicotinoids?

   (d) Did Bayer CropScience AG and/or Bayer CropScience Inc. and/or Bayer Inc. commit a fault in violation of section 1457 C.C.Q. by failing to warn the Class about the risks to Bees associated with neonicotinoids?

   (e) Did Bayer CropScience AG and/or Bayer CropScience Inc. and/or Bayer Inc. commit a fault in violation of section 1457 C.C.Q. by making misstatements with respect to the risks to Bees associated with neonicotinoids?

(f) If the above questions are answered in the affirmative, did the Plaintiff and the Class suffer damages as a result of the conduct of Bayer CropScience AG and/or Bayer CropScience Inc. and/or Bayer Inc.?

(g) Did Syngenta International AG and/or Syngenta Canada Inc. commit a fault in violation of section 1457 C.C.Q. in the research, design, development, manufacture, marketing, distribution and/or sale of neonicotinoids?

(h) Did Syngenta International AG and/or Syngenta Canada Inc. commit a fault in violation of section 1457 C.C.Q. by failing to warn the Class about the risks to Bees associated with neonicotinoids?

(i) Did Syngenta International AG and/or Syngenta Canada Inc. commit a fault in violation of section 1457 C.C.Q. by making misstatements with respect to the risks to Bees associated with neonicotinoids?

(j) If the above questions are answered in the affirmative, did the Plaintiff and the Class suffer damages as a result of the conduct of Syngenta International AG and/or Syngenta Canada Inc.?

(k) What is the nature and amount of the damages each member of the Class is entitled to?

(l) Are the Defendants jointly, or severally, liable for compensatory damages suffered by the Class?

OVERVIEW

3. Bees[1] make a large contribution to the production of numerous agricultural crops because of their role in pollination. Pollination is critical for the reproduction of plans. Many agricultural crops and other plants require pollination to produce seed or fruit. A significant amount of our global food supply is pollinated by Bees.

4. The Bee population is diminishing at alarming rates. Researchers have established a direct link between this continued decline and the use of neonicotinoid insecticides[2] designed, manufactured and sold by the Defendants. Many countries have banned the use of neonicotinoids insecticides, notably because of their impact of Bee population.

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[1] "**Bee**" or "**Bees**" means honey bees (*Apis mellifera*), and includes "**Queen Bees**", which means a Bee that is the single reproductive female in a Beehive or Bee Colony. "**Beehive**" means an enclosed structure used by humans to house a Bee nest and allows for the collection of honey produced by Bees, and used by Bees to live and raise their young and produce honey. "**Colony**" or "**Colonies**" means a Bee colony, which consists of a single Queen Bee, male drone Bees, and female worker Bees, as well as developing Bee eggs, larvae and pupae.

[2] Insecticides are a subset of pesticides that kill insects; pesticides include insecticides but also include substances that kill other unwanted organisms like fungus, small animals and wild plants, among others

5. Beekeepers—who depend on the health and vitality of their Bees to earn a living—are negatively impacted by the decline in the Bee population. They have experienced, among other things, Bee deaths and impairments, and reduced honey production. Their profitability suffered as a result.

6. In 2016, there were 786 beekeepers in Quebec having 59 098 Beehives, producing 1,865 tons of honey and having an overall value of approximately $25 million, the whole as appears from the document titled : *Portrait-Diagnostic Sectoriel de l'Apiculture au Québec,* a copy of which is produced herewith as **Exhibit P-1**.

THE NEONICOTINOIDS

7. Clothianidin, thiamethoxam and imidacloprid are three widely-used insecticides in a class of neuro-active insecticides, termed "neonicotinoids". Neonicotinoids are chemically similar to nicotine;

8. Each of the Defendants researched, designed, developed, manufactured, marketed, distributed and/or sold neonicotinoids (the "Neonicotinoids") in Québec during the Class Period;

9. Neonicotinoids have been scientifically proven to adversely impact the survival, growth and health of Bees, which are vital to Québec's agriculture;

10. The effects of Neonicotinoids are felt by Québec's beekeepers (*i.e.* the Class) annually, and specifically include the following impacts on Bees: deaths; impaired reproduction; immune suppression; behavioral abnormalities resulting in Beehive loss; reduced honey production; reduced honey quality. Beekeepers also experience Beehive contamination; loss of Queen Bees and breeding stock; and may have difficulties fulfilling honey product or pollination contracts;

11. The effects of Neonicotinoids were first felt by the Class in the spring of 2006, the first spring following the widespread use of Neonicotinoids in Québec. That spring was marked by an abnormally high national overwintering mortality average of 29% (compared with a historical average of 10-15%);

12. However, at the time, the Class was not aware that Neonicotinoids were the cause of their losses;

13. By contrast, the Defendants were aware, or ought to have been aware, of the risks that Neonicotinoids pose to the Bee population and, therefore, the Class;

14. The Defendants should have warned the Class about these risks, but they did not. Instead, the Defendants suppressed and misstated these risks to continue to profit from the pervasive and indiscriminate use of Neonicotinoids;

15. As a result of the Defendants' conduct, the Class suffered significant property damage and economic loss;

16. This harm is ongoing due to the Defendants' continued production, marketing and sale of Neonicotinoids;

THE FACTS

Honey Bees

The Honey Bee Life Cycle

17. Bees are social insects that live in Colonies within Beehives. A typical Colony consists of 50,000-60,000 worker (female) Bees, from zero to 10,000 drone (male) Bees[3] and one Queen Bee;

18. There are four distinct Bee life cycle stages: egg stage; larva stage; pupa stage; and adult stage. In the first three stages, the Bees are developing. The development time from egg to adult varies among Queen Bees, worker Bees and drone Bees. The development time is approximately 16 days for Queen Bees, 21 days for worker Bees and 24 days for drone Bees;

19. Bee eggs are small and look like poppy seeds. Eggs normally hatch three days after they are laid by the Queen Bee, becoming larvae;

20. Larvae are fed a diet of royal jelly for their first two days. On the third day those larvae destined to develop into Queen Bees continue to feed on royal jelly, while worker larvae begin to feed on honey, water and pollens. The larva stage lasts approximately five and a half days for a Queen Bee, six days for worker Bees and seven days for drone Bees;

21. Bees then enter the pupa stage, which involves the reorganization of tissues where the worm-like body of the larva develops into what is starting to look like an adult bee. First, its legs, eyes and wings develop and, then, the little hairs that cover its body grow. This stage usually lasts seven and a half days for a Queen Bee, twelve days for a worker Bee and fourteen and a half days for a drone Bee;

22. The fourth and last stage of the Bee life cycle is the adult stage. When Bees enter the adult stage, they are fully grown and spend approximately two weeks in the hive as so-called Nurse Bees, following which they become forager Bees until the end of their lives. These tasks vary as the adult Bees age, from nurse Bees to house Bees to forager Bees as the oldest;

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[3] Note that there are no drones in winter colonies.

Food Collection Process

23. Bees spend approximately one-third of their lives collecting pollen. Forger Bees spend most of their lives collecting pollen, nectar, water or medicinal compounds. On any single day a forager typically performs only one of these task, with most days being devoted to pollen or nectar collection. Pollen is a source of protein they feed to their developing offspring. When a Bee lands on a flower, the hairs all over the Bee's body attract pollen grains through electrostatic forces. Stiff hairs on Bees' legs enable them to groom pollen into specialized brushes or pockets on their legs and/or body and carry the pollen back to their Beehives;

24. Bees generally focus on one kind of flower at time. As a result, pollen will be transferred from one flower to another flower of the same species by a particular Bee. The majority of plants require this type of pollen distribution, known as cross-pollination, in order to produce viable seeds. In order to attract Bees and provide them with food and energy, flowers produce nectar, which is a mixture of water, sugars, and specific plant chemicals. Nectar is collected and made into honey by Bees;

25. Foraging worker Bees collect nectar from flower blossoms by sucking it out with their tongues. They store this nectar in their honey stomach, which is different from their food stomach. Worker Bees have glands that secrete an enzyme that mixes with the nectar to breakdown its complex sugars into simpler sugars that are less prone to crystallization, in a process known as inversion;

26. Worker Bees generally travel within an approximate radius of three (but can travel up to ten) kilometers of the Beehive to collect nectar;

27. When the worker Bee has a full honey stomach, it returns to the Beehive and regurgitates the partially inverted nectar for a house Bee. The nectar is then passed mouth-to-mouth by house Bees until its moisture content is reduced from 70% to 20%. The house Bee then ingests the modified nectar, further breaks down the sugars, and regurgitates it into a cell of the honeycomb;

28. House/Nurse Bees beat their wings, fanning the nectar, to evaporate the remaining water content and thicken the sugars into honey. Once the honey is finished, another house/nurse Bee caps the beeswax cell, sealing the honey into the honeycomb for Bee consumption at a later date. A single worker Bee produces one-twelfth of a teaspoon of honey in its lifetime;

29. House/Nurse Bees do not forage for the Beehive nor does the Queen Bee. The primary purpose of the Queen Bee is to lay eggs. During the months of April through October(spring and summer), the Queen Bee lays eggs continuously;

The Defendants

Bayer

30. Bayer CropScience AG is a crop science company that was founded in 2002 as a result of a corporate reorganization of Bayer AG. Bayer CropScience AG is headquartered in Monheim, Germany and is a subsidiary of Bayer AG;

31. Bayer CropScience AG researched, developed and designed the Neonicotinoids that were, and are, manufactured, distributed, marketed and sold by Bayer Inc. and Bayer CropScience Inc. in Québec by agreement with and for the benefit of Bayer CropScience AG;

32. Bayer Inc. is the Canadian subsidiary of Bayer AG and is responsible for Bayer AG's Canadian operations. Bayer Inc. is incorporated pursuant to the *Canadian Business Corporations Act*, RSC 1985, c. C-44 (the "*CBCA*") and is headquartered in Etobicoke, Ontario. Bayer Inc. has a principal establishment in Montréal, Québec;

33. 3523501 Codena Inc. was incorporated in January 2001 pursuant to the *CBCA* and was headquartered in St-Charles-Sur-Richelieu, Québec. 4118235 Bayer CropScience Inc. was incorporated in October 2002 pursuant to the *CBCA* and was headquartered in Calgary, Alberta;

34. On January 1, 2013, 4118235 Bayer CropScience Inc. and 3523501 Codena Inc. amalgamated to form Bayer CropScience Inc. Bayer CropScience Inc. is a fully consolidated and wholly owned subsidiary of Bayer AG. It is incorporated pursuant to the *CBCA* and is headquartered in Calgary, Alberta;

35. The business of each of Bayer CropScience AG, Bayer CropScience Inc. and Bayer Inc. (collectively, the "Bayer Defendants") is inextricably interwoven with that of the other and each is the agent of the other for the purposes of the research, design, development, manufacture, marketing, distribution and/or sale of Neonicotinoids in Québec.;

36. On June 7, 2018, Bayer acquired 100% of the outstanding shares of Monsanto Company for $63 billion (USD).

Syngenta

37. Syngenta International AG is a global agribusiness, agrochemical and biotechnology stock corporation. It is headquartered in Switzerland and has numerous research and development facilities and production sites worldwide;

38. Syngenta International AG researched, developed and designed Neonicotinoids that were, and are, manufactured, distributed, marketed and sold by Syngenta Canada Inc. in Québec by agreement with, and for the benefit of, Syngenta International AG;

39. 531201 Syngenta Seeds Canada, Inc. was incorporated in March 2001 pursuant to the *CBCA* and was headquartered in Arva, Ontario. 3850617 Syngenta Crop Protection Canada, Inc. was incorporated in January 2001 pursuant to the *CBCA* and was headquartered in Guelph, Ontario;

40. On January 1, 2012, 531201 Syngenta Seeds Canada, Inc. and 3850617 Syngenta Crop Protection Canada, Inc. amalgamated to form Syngenta Canada Inc. Syngenta Canada Inc. is an indirect wholly owned subsidiary of Syngenta International AG. It is incorporated pursuant to the *CBCA* and is headquartered in Guelph, Ontario. Syngenta Canada Inc. has a presence in Saint-Pie, Québec;

41. The business of each of Syngenta International AG and Syngenta Canada Inc. (together, the "Syngenta Defendants") is inextricably interwoven with that of the other and each is the agent of the other for the purposes of the research, design, development, manufacture, marketing, distribution and/or sale of Neonicotinoids in Québec;

Regulatory Approval of the Defendants' Neonicotinoids

42. There are three types of Neonicotinoids at issue in this class action: imidacloprid, clothianidin and thiamethoxam. The impact of each of the Neonicotinoids on Bees is substantially the same;

43. In Canada, the federal government, through the Pest Management Regulatory Agency (the "PMRA"), is responsible for the registration of pesticides (including Neonicotinoids);

44. The PMRA has issued conditional approvals for the following products containing Neonicotinoids produced by the Bayer Defendants, among others: Admire 240 Flowable Systemic Insecticide; Bay NTN 33893 Technical Insecticide; Merit Solupack Insecticide; Gaucho 480 FL Insecticide; Guacho 600 FL Insecticide; Gaucho CS FL (Insecticide/Fungicide Seed Treatment); Genesis 240 Flowable Systemic Insecticide; Poncho 600 FS; Confidor 200 SL; Prosper EverGol; Poncho 600 Seed Treatment Insecticide; Poncho FS Seed Treatment Insecticide; Prosper FX Flowable Insecticide and Fungicide Seed Treatment; Prosper T200 Flowable Insecticide and Fungicide Seed Treatment; Stress Shield for Cereals and Soybeans; Concept Liquid Insecticide; Confidor 200 SL; Acceleron IX-409 Insecticide Seed Treatment; Maxforce Impact; and Titan ST Insecticide;

45. The PMRA has issued conditional approvals for the following products containing Neonicotinoids produced by the Syngenta Defendants, among others: Actara 25 WG Insecticide; Actara 240SC Insecticide; Rascendo; Cruiser 5SF Seed Treatment; Cruiser 250FS Seed Treatment; Cruiser Maxx Beans; Helix Colourless Seed Treatment; Helix Liquid Seed Treatment; Cruiser Maxx Cereals Seed Treatment; Cruiser Maxx Cereals Commercial Seed Treatment; Endigo

Insecticide; Flagship Insecticide; Helix Liquid Seed Treatment; A18046A Seed Treatment; Optigard Ant Gel 30 Insecticide; Minecto Duo 40WG; Mainspring X Insecticide; Cruiser Maxx Potato Extreme; Cruiser Vibrance Quattro; Helix Vibrance; and Helix Xtra Seed Treatment;

Imidacloprid

46. Imidacloprid is a Neonicotinoid produced by the Bayer Defendants. It is present in a range of crop protection products used throughout Québec;

47. Imidacloprid was first registered by the PMRA in 1995 for control of the Colorado potato beetle. It has since been approved for use on an extensive range of field crops, root and tuber vegetables, tree fruits and legumes such as corn, cauliflower, artichokes and strawberries, among others;

48. Imidacloprid persists in soils and has a half-life of approximately 1,000 days (just under three years) depending on soil type and environmental conditions. In water, imidacloprid can have a half-life of more than a year depending on environmental conditions;

Clothianidin

49. Clothianidin is a Neonicotinoid that is produced by the Bayer Defendants and the Syngenta Defendants. It is a successor product to imidacloprid and is present in a range of crop products used throughout Québec;

50. Clothianidin was first conditionally registered by the PMRA in 2003 and is commercially used as a seed treatment on numerous crops including but not limited to corn, canola, rice, barley (winter, seed), durum wheat (seed), oats (winter, seed), rye (seed), triticale (seed), wheat (winter, seed), forage maize, grain maize, sweetcorn, fodder beet (seed), sugar beet (seed), turf, some tree crops, row crops such as grapes and strawberries, among other crops;

51. Clothianidin persists in soils and has a half-life ranging from 148 to 1,155 days (approximately five months to over three years) depending on soil type and environmental conditions. In water, clothianidin can have a half-life of 33 days depending on environmental conditions;

Thiamethoxam

52. Thiamethoxam is a Neonicotinoid manufactured by the Syngenta Defendants. It is present in a range of crop protection products used throughout Québec;

53. Thiamethoxam was first registered by the PMRA in 2000 and is used to protect field crops, vegetable crops, stone fruit, turf and ornamentals, as well as for other agricultural purposes. It is also approved for use on potato, potato (seed crop), house plants, house plants (container-grown), ornamental garden plants (indoor container-grown), apple, pear, fodder beet (seed) and sugar beet (seed);

54. Thiamethoxam has a half-life of 229 days depending on soil type and environmental conditions. In water, thiamethoxam can have a half-life of 6,080 days (approximately sixteen and a half years) depending on environmental conditions. In soil, thiamethoxam is also known to degrade into clothianidin;

55. Bees are exposed to the active ingredients and formulation components in Neonicotinoids in addition to Neonicotinoid degradation products. The degradation components of Neonicotinoids can be equally or more toxic to Bees than the original Neonicotinoids themselves;

Principal Questions of Fact and Law to be Dealt with Collectively

***Common Issue A**: Can any neonicotinoid based pest control products researched, designed, developed, manufactured, marketed, distributed and sold by Bayer CropScience AG and/or Bayer CropScience Inc. and/or Bayer Inc. in Québec during the class period (i.e. imidacloprid, clothianidin and their related end-use products approved for agricultural use) cause honeybee colony loss resulting in financial damages or losses to beekeepers?*

***Common Issue B**: Can any neonicotinoid based pest control product researched, designed, developed, manufactured, marketed, distributed and sold by Syngenta International AG and/or Syngenta Canada Inc. in Québec during the class period (i.e. thiamethoxam and its related end-use products approved for agricultural use) cause honeybee colony loss resulting in financial damages or losses to beekeepers?*

The Defendants' Neonicotinoids Cause Harm to Bees and the Class

56. Neonicotinoids are neuro-active, nicotine-based insecticides. They were designed to kill insects—Bees are no exception, in fact Bees are exceptionally sensitive to Neonicotinoids;

57. Neonicotinoids act by interfering with the nicotinic receptor in Bees' central nervous system. This interference causes Bees to suffer tremors, paralysis, other reductions in function or prematuredeath. These effects can be suffered immediately, through a direct, lethal exposure to Neonicotinoids, or, can develop over time, through chronic, sublethal exposure to Neonicotinoids;

58. Bees may suffer immediate, lethal harms when they encounter Neonicotinoids on the surfaces of plants and flowers or in the air. For example, Neonicotinoids are contained in the talc that is exhausted when treated seeds are planted. Talc is highly mobile and can contaminate flowers visited by Bees in fields planted with Neonicotinoid-treated seeds, on plants at the edges of fields, or even in nearby fields that have not been planted with Neonicotinoid-treated seeds. Lethal exposure can also result when Bees come into contact with aerial Neonicotinoid powders and abraded seed coatings released during seed drilling. Bees may suffer immediate lethal harm from drinking from puddles in fields recently planted with

neonicotinoid coated seeds, or from transmitting water from the puddles to the colony;

59. Chronic, sublethal exposure occurs because of the "persistent" properties of Neonicotinoids in treated plants, plants exposed from drift, from treated seeds, and in soil and water. As persistent insecticides, Neonicotinoids remain active and toxic to Bees, even at extremely low doses, in treated plants for many months, or years. Neonicotinoids also have a higher persistence in soil and water than some conventional Insecticides increasing the risk of cumulative toxic effects, especially with repeated Neonicotinoid applications. Bees suffer increasing harm over time as a result of chronic and sustained exposure to Neonicotinoids;

60. The sublethal effects of Neonicotinoids mean that foraging worker Bees can bring pollen and nectar containing Neonicotinoids and their degradation products back to the Beehive, throughout the growing season from exposed plants where Neonicotinoids can accumulate and cause harm to non-foraging Bees. This has the added impact of effectively contaminating for several months the Beehive;

61. Stored pollen or nectar brought to the Beehive containing a single Neonicotinoid active ingredient may result in the active ingredient and the degradation products that form over time being present in the Beehive. This mixture poses a significant risk of impairment for Bees inhabiting a contaminated Beehive and using contaminated stored food sources during the fall, winter and early spring months. The degradation products associated with some Neonicotinoids are more toxic to Bees than the parent active ingredient as set out in an article from the American Bee Journal dated June 2014, a copy of which is produced herewith as **Exhibit P-2**;

62. As social insects, Bees rely heavily on memory, cognition and communication to coordinate the activities that are essential for their survival. Sublethal ingestion of Neonicotinoids damages foraging behaviour, overall mobility and ability to communicate with each other;

63. Neonicotinoids have numerous other adverse effects on Bees, such as causing a premature shift in Beehive roles and impairing associative learning abilities that foraging Bees rely on to find their way back to the Beehive. The Bee's olfactory member can be taught to remember smells, which means that they can learn to return to the Neonicotinoid source;

64. The effects of Neonicotinoids can be either direct or indirect, and lethal or sublethal. Direct exposure to Neonicotinoids can result in death, reproductive impairments, behavioural changes (e.g., impaired foraging ability), and comprised immunity. Chronic, indirect exposure to very low levels of Neonicotinoids are may be irreversible and/or cumulative, amplifying the risk. Pollinators are highly vulnerable to Neonicotinoid residues. Studies targeted on Bees show that exposure to Neonicotinoids can have an array of negative effects, including: impaired memory and brain metabolism; weakened immunity; and impaired orientation as set out in the Annual Reports of the Environmental Commissioner

of Ontario and the Supplemental Report 2014/2015, a copy of which are produced herewith as **Exhibits P-3** and **P-4**.

The Task Force on Systemic Pesticides Condemns Neonicotinoids

65. The harms of Neonicotinoids to Bees are well-established and accepted throughout the international scientific community;

66. In 2009, a group of European scientists from several disciplines convened as a result of the growing scientific concern over the rapid decline in arthropod[4] populations, including Bee populations, across Europe;

67. Reviewing existing studies, field observations and circumstantial evidence, this group hypothesized that a new generation of pesticides—being the persistent, systemic and neurotoxic neonicotinoids, introduced in the mid-1990s—could be one of the main causes of the escalating decline of arthropod populations;

68. To investigate this theory, the Task Force on Systemic Pesticides ("Task Force") was established to engage in an analysis of all the available scientific studies of the effects of systemic pesticides on biodiversity and the ecosystem, with a focus on pollinators and other non-target species. The Task Force found that neonicotinoids can persist for years in soils and can build up if regularly used, and that they are water soluble and can leach into and contaminate ponds, ditches and streams. The Task Force found that neonicotinoid consumption by Bees leads to impaired learning and navigation, raised mortality rates, increased susceptibility to disease via impaired immune system function and reduced fecundity, the whole as appears from a report from the Task Force on Systemic Pesticides entitled: *"Worldwide integrated assessment of the impacts of systemic pesticides on biodiversity and ecosystems",* dated August 23, 2014, a copy of which is produced herewith as **Exhibit P-5**;

69. The Task Force reviewed all of the relevant information from studies all over the world, representing approximately 800 peer reviewed reports, relating to the use and impact of neonicotinoids. The key findings of the Task Force are set out in the Worldwide Integrated Assessment on Systemic Pesticides and include, among others:

- neonicotinoids persist, particularly in soils, for months and in some cases years, and accumulate. This increases their toxicity by increasing the duration of exposure of non-target species (such as Bees);

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[4] An arthropod is an invertebrate animal having an external skeleton, a segmented body and paired jointed appendages. The most familiar arthropods are butterflies, beetles, flies, ants, bees, spiders, scorpions, shrimp and crabs.

- neonicotinoid metabolites (meaning the degradation compounds that are produced when neonicotinoids are broken down by animals, plants and microorganisms like soil bacteria and fungi) are often as or more toxic than neonicotinoids themselves;

- the classic measurements used to assess the toxicity of a pesticide (short-term lab toxicity results) are not effective for systemic pesticides and conceal their true impact. These measurements typically assess direct acute effects rather than chronic effects via multiple routes of exposure. In the case of acute effects alone, some neonicotinoids are at least 5,000 to 10,000 times more toxic to bees than DDT;

- the evidence is clear that neonicotinoids pose a serious risk of harm to honey bees and other pollinators; and

- the most affected group of species include insect pollinators such as bees and butterflies that are exposed to contamination through all four routes (air, plants, water and soil) with high exposure through air and plants and medium exposure through water. The assessment found that both individual pollinators and pollinator populations can be adversely affected by low or acute exposure making them highly vulnerable. Pollinators exposed to contaminated pollen, nectar and water are harmed at field realistic concentrations. The Task Force's finding that pollinators are harmed at field realistic concentrations is supported by research conducted by the Université Laval and others. The research found that pollinators were injured as a result of exposure to Neonicotinoids found in and adjacent to corn fields in Quebec, the whole as appears from Science and published by the American Association for the Advancement of Science a copy of which is produced as **Exhibit P-6**;

70. The Task Force concluded that the present scale use of neonicotinoids is not sustainable and that continued use can only accelerate the global decline of important invertebrates, and risk reductions in the level, diversity, security and stability of the ecosystem;

71. In 2017, the Task Force updated its assessment to take into account the hundreds of new peer-reviewed neonicotinoid studies published since 2014;

72. The Task Force found that the new studies confirmed environmental neonicotinoid contamination in soil, plants (including pollen and nectar), agricultural produce, bees, beehives and honey;

73. Studies on the lethal and sublethal effects of neonicotinoids confirmed the high toxicity of neonicotinoids to bees and confirmed previous findings that chronic exposure to very low levels of neonicotinoids can cause a "delayed mortality" effect;

74. These studies also showed that, in bees, effects related to neonicotinoids include expressional changes in genes related to the bee immune system, and neurological effects influencing spatial navigation and thermoregulation. Recent studies indicated that additional sublethal effects on Bees include reproductive disorders and negative interactions between parasites and the immune system, the whole as appears from an update of The Task Force on Systemic Pesticides (2017), a copy of which is produced herewith as **Exhibit P-7**;

75. The updated assessment also revealed broader impacts that reinforce the conclusions of the Task Force that neonicotinoids represent a major worldwide threat to bees, biodiversity and ecosystems;

The Permanent Peoples' Tribunal Condemns the Defendants

76. The Permanent Peoples' Tribunal (the "Tribunal") is an international opinion tribunal that is independent of state authorities. The Tribunal includes a president, four vice-presidents, a secretary general and sixty-six international members, all of whom are experts from a variety of disciplines including law, economy, sociology among others;

77. Over the course of four days, from December 3 to 6, 2011, the Tribunal convened in India to hear cases that were brought against six multinational agrochemical companies, including Syngenta International AG and Bayer AG. One of the cases brought before the Tribunal from the United Kingdom and Europe focused on the widespread death of Bees in Europe and North America linked to the Bayer Defendants' Neonicotinoids;

78. On December 6, 2011, the Tribunal reached its verdict on the use of Neonicotinoids and found that the "testimonies of witnesses convincingly showed that ... the extinction of bees has already occurred to a large extent in many places of the world (in the USA, in Europe, in Argentina and elsewhere)...";

79. The Tribunal declared that on all the evidence presented before it relating to the impacts of Neonicotinoid use that: "the six [transnational corporations were] *prima facie* responsible for gross widespread and systemic violations of the right to health and life, economic, social and cultural rights...". The Tribunal further declared that "their systemic acts of corporate governance have caused avoidable catastrophic risks, increasing the prospects of extinction of biodiversity, including species whose continued existence is necessary for reproduction of human life";

The European Commission Severely Restricts Neonicotinoid Use

80. In 2013, the European Food Safety Authority ("EFSA") issued reports confirming that neonicotinoids present acute risks to Bee survival. A "high acute risk" to Bees was identified from exposure via dust drift for authorized uses in cereals, cotton, maize and oilseed rape;

81. A "high acute risk" was also identified for exposure to the residues in nectar and/or pollen for authorized uses in cotton, oilseed rape and sunflowers. The EFSA also identified other risks and major data gaps in the studies previously undertaken;

82. The European Commission, based on the findings of the EFSA, has restricted the sale and use of neonicotinoid insecticides, specifically products containing clothianidin, imidacloprid and thiamethoxam;

83. The European Commission's temporary ban entered into force on December 1, 2013 and was subject to extensive review;

84. On April 27, 2018, the European Union voted in favour of entirely banning the outdoor use of neonicotinoids, the whole as appears from Volume 61 of the Official Journal of the European Union, dated 30 May 2018, a copy of which is produced herewith as **Exhibit P-8**;

85. On September 1, 2018, France banned the use of neonicotinoids, irrespective of application method (as a treatment for soil, seeds, or the aerial parts of the plants), to help protect its bee population. The ban imposed by France made it the first country to impose a blanket ban on neonicotinoids putting it ahead of the European Union's prohibition on the outdoor use of Neonicotinoids;

86. The harms of Neonicotinoid use have been experienced in Québec;

87. Over the past 15 years, Neonicotinoid use in Québec has caused mass die-offs in some Bee colonies, Bee reproductive failures, difficulties rearing Queen Bees, and a decrease in the quality and quantity of honey produced and other by-products from the Beehive, such as queen cells, nuleari/nucs colony production, pollen, beeswax and mead, resulting in substantial damage to the Class;

The Defendants had a Duty to Avoid Causing Injury to the Class

88. The Defendants' Neonicotinoids can—and did—cause damages to the Class. The Class' losses include damage to Bees (including Queen Bees), Bee Colonies, Beehives and beekeeping equipment owned by Class Members and increased time, costs and work associated with maintenance of weak colonies;

89. There is a close and direct relationship of proximity between the Defendants and the Class. The Defendants' conduct directly caused damages to the property of the Class. The Defendants' conduct also caused the Class to suffer economic losses related to the damage to their property;

90. Neonicotinoids are dangerous and harmful products. Throughout the Class Period, it was reasonably foreseeable to the Defendants that the Class could be affected by the risks associated with the use of Neonicotinoids. The Bayer Defendants

themselves acknowledge that Neonicotinoids are toxic to Bees: a conditional registration for clothianidin states that *"clothianidin is highly toxic to bees ..."*, the whole as appears from Health Canada's Registration Decision RD2013-14, dated July 23, 2013, a copy of which is produced herewith as **Exhibit P-9**;

91. Further, the Defendants knew or ought to have known that: (i) Neonicotinoid-treated seed poses harm to Bees; (ii) the Defendants' dominance and control of the market means that farmers often have had, and continue to have, no choice but to purchase and plant Neonicotinoid-treated seeds; (iii) Bees must collect pollen and are often used to pollinate agricultural crops, and for that purpose, Bees and beekeeping businesses are often located proximate to agricultural operations;

92. The relationship of proximity between the Defendants and the Class and the reasonable foreseeability that any fault committed by the Defendants could result in damages to the Class mean that the Defendants had an obligation to be mindful of the interests of Class Members in going about their business;

93. The Defendants failed to fulfil their obligations;

***Common Issue C**: Did Bayer CropScience AG and/or Bayer CropScience Inc. and/or Bayer Inc. commit a fault in violation of section 1457 C.C.Q. in the research, design, development, manufacture, marketing, distribution and/or sale of neonicotinoids?*

***Common Issue G**: Did Syngenta International AG and/or Syngenta Canada Inc. commit a fault in violation of section 1457 C.C.Q. in the research, design, development, manufacture, marketing, distribution and/or sale of neonicotinoids?*

94. The Defendants owed the Class a duty to:

(a) ensure that their Neonicotinoids were designed and marketed properly for use in accordance with the principles and objectives of sustainable pest management;

(b) take reasonable steps to ensure that their Neonicotinoids were designed and marketed in a way that would be safe for Bees and would not cause damage to the Class;

(c) refrain from designing, marketing and selling a hazardous product with a dangerous defect;

(d) properly research, test and study the impact of Neonicotinoids on Bees prior to registering, marketing, distributing and selling Neonicotinoids in Canada, and Québec;

(e) keep up to date on scientific studies and developments pertaining to Neonicotinoids and, particularly, their impacts on Bees;

(f) monitor, investigate, evaluate and follow up on adverse events associated with use of Neonicotinoids;

(g) upon discovering that Neonicotinoids cause both lethal and sublethal impacts and death to Bees, cause damage to the Class and are prone to persistence in the soil and groundwater, promptly remove their Neonicotinoids from the marketplace, disclose the harm and risks of harm to the Class, and to take other appropriate remedial actions;

(h) provide the PMRA and other regulatory agencies with complete and accurate information on their Neonicotinoids and Bee exposure on a timely basis and as such information became available;

(i) to otherwise take reasonable steps to avoid harm and/or damage to the Class; and

(j) to act in good faith toward the Class;

The Design, Manufacture and Marketing of Neonicotinoids Violates the Principles and Objectives of Sustainable Pest Management

95. Health Canada describes sustainable pest management (also termed integrated pest management or "IPM") as an environmentally-sensitive crop protection approach that combines "a range of pest management practices, including the judicious use of insecticides, to ensure that our natural resources are utilized efficiently and conserved for future generations" to "meet society's current and future needs for the protection of human health and the environment for the production of food, feed and fibre, and for the use of natural resources";

96. The key principle of sustainable pest management/IPM is to only use and apply chemicals for the purposes of controlling pests based on actual need, reducing pesticide reliance. The goal of sustainable pest management is to minimize the adverse effects of pesticides while maintaining economic returns;

97. Sustainable pest management recognizes that it is neither necessary nor cost-effective to attempt to eliminate an entire population of pests. Instead, researchers and pest management specialists develop thresholds to determine *when* control measures *should* be implemented to bring pest populations down to less harmful levels. The conditions affecting pests are continually changing and as a result the thresholds get re-evaluated on an on-going basis;

98. By design and manufacture and through the Defendants' marketing strategy, Neonicotinoids conflict with these principles and objectives;

99. The Defendants' Neonicotinoids are used to treat food crops. Neonicotinoids used for this purpose are applied as seed coatings and act as "systemic" insecticides. The "systemic" design means that Neonicotinoids get taken up by the plant and transported to all plant tissues including leaves, flowers, roots and stems, as well

as pollen and nectar. Once taken up, they continue to act on any pest that interacts with the plant and remain in the environment—soil and water—for extended periods of time;

100. The Defendants also marketed Neonicotinoids in a way that conflicts with sustainable pest management;

101. Neonicotinoids can be applied in at least four ways: as foliar (leaf) sprays, as soil drenches, as tree injections and as seed coatings. Neonicotinoids were first registered as a seed coating. Following registration, Neonicotinoids were so aggressively marketed by the Defendants that it quickly became nearly impossible for farmers to buy seed that had not been treated with Neonicotinoid;

102. Neonicotinoids are, at best, only needed as an insecticide to safeguard certain crops from wireworm and grubs. Only 10 to 20% of Ontario's acreage, for example, is impacted by these pests;

103. The design, manufacture and marketing of Neonicotinoids for prophylactic use conflicts with the principle and goals of sustainable pest management as described in the preambles to the *Federal Pest Control Products Act*, SC 2002, c 28 and the *Canadian Environmental Protection Act*, 1999, SC 1999, c 33, and the various provincial environmental protection statutes respectively;

104. The design, manufacture and marketing of Neonicotinoids also conflicts with the precautionary principle, a principle of international law and policy, which is appropriately used to assist in interpreting Canadian and Provincial environmental statutes;

105. The "precautionary principle" at its core, calls for preventative, anticipatory measures to be taken when an activity raises threats of harm to the environment, wildlife or human health even if a cause-and-effect relationship has not been fully established;

The Defendants Designed and Have Persisted in Manufacturing, Marketing and Selling Products with a Dangerous Defect Despite Proven Harm

106. The Defendants designed and manufactured Neonicotinoids without any regard for their impacts on non-target species, including Bees. This indiscriminate toxicity is a dangerous defect that caused harm to the Class;

107. The impacts of this defect were amplified by the way the Defendants marketed Neonicotinoids as a preventative insecticide;

108. This defect was or ought to have been known to the Defendants as early as 1995, around the time Bayer first registered imidicloprid for use in Canada, and well

before the Defendants first registered thiamethoxam and clothianidin for use in Canada in 2000 and 2003, for the following reasons, among others:

(a) In 1995, beekeepers in North Dakota lost thousands of Bee Colonies during a period when oilseed rape in the area was treated with imidacloprid. The loss of Colonies represented approximately one-third of the Bees in the area;

(b) In 1999, imidacloprid was banned in France after French beekeepers reported substantial losses attributed to the neonicotinoid. This ban was upheld in 2003 when French scientists confirmed that the bee losses were caused by the neonicotinoid;

(c) In 2003, the Comité Scientifique et Technique, a team of expert scientists appointed by the French Minister of Agriculture, concluded that imidacloprid poses a significant risk to Bees. In 2004, the French Minister of Agriculture suspended the use of imidacloprid as a seed treatment for maize (corn). (In 2008, Bayer's registration application for clothianidin was rejected by the French authorities);

(d) In February 2003, the US EPA issued a Risk Assessment for clothianidin seed treatment for corn and canola. At that time, US EPA scientists raised serious concerns about neonicotinoids and requested field testing to evaluate potential environmental hazards including harm to pollinators;

(e) The US EPA, in its "Pesticide Fact Sheet", issued May 30, 2003, granting the conditional registration of clothianidin, produced by Bayer Corporation, the US subsidiary to Bayer AG, stated that "[c]lothianidin has the potential for toxic chronic exposure to honey bees, as well as other non-target pollinators, through the translocation of clothianidin residues in nectar and pollen";

109. This defect continued to attract the attention of authorities worldwide after the Defendants' registered their Neonicotinoids for use in Canada as follows, but the Defendants took no remedial action. To the contrary, the Defendants continued to renew their conditional registrations, register additional Neonicotinoid-based products, and register existing Neonicotinoids for new uses:

(a) In 2008, the German Federal Office of Consumer Protection and Food Safety suspended the registrations of eight pesticide seed treatment products used on rapeseed oil and sweetcorn. The ban occurred following reports, in May 2008, from German beekeepers in the Baden-Württemberg region that two-thirds of their Bees died and that some beekeepers lost all of their Beehives as a result of the use of clothianidin. The tests conducted on the dead Bees showed that 99% of those examined had a buildup of clothianidin;

(b) In 2008, Italy's agricultural ministry, relying on the precautionary principle, suspended the use of pesticides containing neonicotinoids for the coating of any plant seeds;

(c) In a memorandum dated November 2, 2010, the US EPA stated that clothianidin's major risk concern is to non-target insects such as Bees and that "[a]cute toxicity studies to honey bees show that clothianidin is a neonicotinoid insecticide that is both persistent and systemic on an oral basis";

(d) The US EPA's "Clothianidin Summary Document Registration Review: Initial Docket December 2011", outlined the key findings of the most recent ecological risk assessment and states: "...in the 2010 assessment, information from standard tests, field studies, and incident reports suggest the potential for long-term toxic risks to honey bees...";

(e) In January 2012, the United States Department of Agriculture's Agricultural Research Station published a study finding that injury to Bees from neonicotinoids also makes them more vulnerable to highly-damaging parasites;

(f) In June 2017, the UK's Centre for Ecology and Hydrology engaged in the most extensive review of neonicotinoids to date. The study concluded that exposure to crops treated with neonicotinoids—clothianidin or thiamethxam—reduced the overwintering survival rate of Bees. The study found that exposure to low levels of neonicotinoids may cause reductions in Beehive fitness that are influenced by a number of interacting environmental factors. Such interacting environmental factors can amplify the impact of Bee losses (e.g., through sublethal toxicity effects) and reduce longer-term colony viability, a copy of which is produced at **Exhibit P-10**;

(g) In 2018, and as described in greater detail in the paragraphs above, the European Union banned the outdoor use of neonicotinoids and France banned neonicotinoids for all uses.

110. The Defendants continued to refuse to take remedial action in the face of domestic incidents caused by this defect, and continued to renew and seek additional registrations, for example:

(a) Since 2009, approximately 1,500 Pesticide Incident Reports, and hundreds of complaints, relating to Colony effects and Bee deaths in Ontario and Québec have been filed with the PMRA. Three of these reports were evaluated by Health Canada as follows:

- "Pesticide Incident Report 2010-3100" concerned an abnormally high number of "dead or paralyzed/agonizing" Bees observed by a beekeeper in Coteau-du-Lac, Québec on May 15, 2010. Tests by the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec ("MAPAQ")

detected residues of clothianidin and thiamethoxam in the dead Bees, which Health Canada used to confirm that exposure to Neonicotinoids occurred. The incident was classified as "Environment Moderate". Health Canada concluded, the whole as appears from Health Canada's Evaluation of Pesticide Incident Report 2010-3100, dated December 30, 2010, a copy of which is produced herewith as **Exhibit P-11**:

> ...[I]t is highly probable that exposure to clothianidin and/or thiamethoxam caused the bee mortality in Coteau-du-Lac. Even though it is not clear how the bees were exposed to clothianidin and thiamethoxam in this incident, this conclusion is supported by the fact that clothianidin and thiamethoxam are known to be highly toxic to bees and these were the only pesticides found in the dead bees. In addition, no pesticide residues were found in control bees which were collected from a healthy hive in another location.

- "Pesticide Incident Report 2010-3391" concerned an "abnormally high bee mortality" observed by a beekeeper in St-Dominique, Québec in May 2010. The Bees were sent for testing by the MAPAQ, and the incident was classified as "Environment Moderate". Health Canada concluded, the whole as appears from Health Canada's Evaluation of Pesticide Incident Report 2010-3391, dated December 31, 2010, a copy of which is produced herewith as **Exhibit P-12**:

> ...[I]t is highly probable that exposure to clothianidin caused the bee mortality in St-Dominique. Even though it is not clear how the bees were exposed to clothianidin in this incident, this conclusion is supported by the fact that clothianidin is known to be highly toxic to bees and was the only pesticide found in the dead bees.

- "Pesticide Incident Report 2011-4412" concerned Bee mortality observed by a beekeeper in the Montérégie region of Québec, which was first noticed on June 1st, 2011. The affected hives "were surrounded by agricultural fields in which corn and soybean are grown and the incident occurred during the sowing of corn and soybean seeds". Testing by the MAPAQ detected residues of clothianidin, thiamethoxam, fenitrothion, and atrazine in the dead Bees. Fenitrothion is no longer registered for use in Canada. The incident was classified as "Environment Major". Health Canada concluded:

> ...[I]t is highly probable that exposure to clothianidin and/or thiamethoxam and/or fenitrothion caused the bee mortality in this incident. Even though it is not clear how the bees were exposed to these compounds in this incident, this conclusion is supported by the fact that residues of clothianidin, thiamethoxam and fenitrothion were found in dead bees and that these compounds are known to be highly toxic to bees. In addition, clothianidin and/or thiamethoxam were detected in other incidents where high bee mortality was observed.
>
> It is unlikely that atrazine contributed to the bee mortality observed in this incident, as this pesticide is not known to be hazardous to bees.

- In response to this incident concerning Bee mortality and clothianidin and thiamethoxam, Health Canada added that:

> A trend analysis will therefore be initiated by the PMRA to further its understanding of the issue. In addition, as clothianidin and thiamethoxam are conditionally registered, all incidents involving these compounds will be considered during the evaluation for full registration along with other requested data. It should finally be noted that pollinator issues are identified as a PMRA priority. Within this context, the PMRA is working with federal, provincial and international partners as well as other stakeholders including industry to improve risk mitigation measures for pollinators;

(b) In the spring of 2013, Health Canada, with support from the Ontario Ministry of the Environment and the Ontario Ministry of Agriculture, Food and Rural Affairs ("OMAFRA"), released a report titled, "Evaluation of Canadian Bee Mortalities that Coincided with Corn Planting in Spring 2012". This evaluation noted the "significant number of honey bee mortality reports from the provinces of Alberta, Manitoba, Saskatchewan, Nova Scotia, Quebec and Ontario", but observed that the "majority of reports were from southern Ontario, involving over 40 beekeepers and 240 different bee yard locations", particularly in corn growing regions. Residue analysis was conducted by the PMRA and MAPAQ, the whole as appears from the Health Canada report entitled: *"Evaluation of Canadian Bee Mortalities that Coincided with Corn Planting in Spring 2012"*, a copy of which is produced herewith as **Exhibit P-13**:

> Clothianidin was detected in approximately 70% of the samples analyzed in Ontario and clothianidin and thiamethoxam were detected in the samples analyzed from Quebec. On a bee yard basis, these residues were detected in approximately 80% of the bee yards where dead bee samples were collected and analysed. Samples of unaffected bees were also analysed and clothianidin was only detected in one sample at very low levels. Corn seed in Ontario and Quebec is treated in approximately equal quantities with either clothianidin or thiamethoxam. Since thiamethoxam is converted to clothianidin, the detection of clothianidin in dead bees could indicate exposure to either clothianidin or thiamethoxam.
>
> ...
>
> The information evaluated suggests that planting of corn seeds treated with the nitroguanidine insecticides clothianidin and/or thiamethoxam contributed to the majority of the bee mortalities that occurred in corn growing regions of Ontario and Quebec in Spring 2012. The likely route of exposure was insecticide contaminated dust generated during the planting of treated corn seed. ...;

(c) Since 2010, OMFRA has been tracking over-winter Bee Colony mortalities. OMAFRA has concluded that the scientific findings have shown a strong link between planting corn and soybean seeds treated with Neonicotinoids and acute Bee deaths in Ontario, the whole as appears from the Presentation of Discussion Paper "Pollinator Health" - OMAFRA, a copy of which is produced herewith as **Exhibit P-14**;

(d) In 2010-2011, the winter mortality rate for Bees was 43%. In 2012-2013, the mortality rate was 38%. In 2014, the mortality rate reached its highest level at 58%. Overwinter dies offs have been an average of 34% over the past 12 years. The level generally considered to be acceptable and sustainable by beekeepers is between 10 to 15 %, the whole as appears from the Ontario government report entitled: *"Pollinator Health"*, dated November 25, 2014, a copy of which is produced herewith as **Exhibit P-15**;

(e) A considerable number of Bees also died during the summer and fall months. In 2012, approximately 240 Bee yards reported Bee deaths. In 2013, 340 Bee yards reported Bee deaths. The PMRA reported that approximately 70% of the dead Bees found in 2012 and 2013 tested positive for Neonicotinoid residues;

(f) The PMRA has stated that current agricultural practices related to Neonicotinoid-treated seed are not sustainable, the whole as appears from the Health Canada interim report entitled: *"Evaluation of Canadian bee mortalities in 2013 related to neonicotinoid pesticides"*, dated September 26, 2013, a copy of which is produced herewith as **Exhibit P-16**;

(g) In 2012, Health Canada evaluated the Bee mortalities and concluded that the planting of corn seeds treated with the clothianidin and/or thiamethoxam contributed to the majority of the Bee mortalities that occurred in the corn growing regions of Ontario and Québec;

(h) A similar Health Canada evaluation titled, "Evaluation of Canadian Bee Mortalities in 2013 Related to Neonicotinoid Pesticides" ("Evaluation"), the interim results of which were published in September 2013, found that "approximately 75% of the dead bee samples had detectable residues of neonicotinoid insecticides used to treat corn and soybean seed" and that "[c]lothianidin and/or thiamethoxam were detected in >90% of the comb pollen samples from affected yards and were also detected in some water, soil, and comb honey samples";

(i) The Evaluation also found that "[s]ome beekeepers have reported that they have noticed mortalities in their hives for years, but they had not made the link to pesticides being the cause until the acute kills that were observed in 2012". The Evaluation concluded that "current agricultural practices related to the use of neonicotinoid-treated corn and soybean seed are not sustainable due to their impact on bees and other pollinators";

(j) In late 2013, Canada's Standing Senate Committee on Agriculture and Forestry commenced hearings on "the importance of bees and bee health in the production of honey, food and seed in Canada" with emphasis on the use of Neonicotinoid pesticides and pollinator exposure and protection;

(k) In 2013, OMAFRA released a presentation titled, "Neonicotinoids and Field Crop Production in Ontario" ("Presentation"), a copy of which is produced herewith as **Exhibit P-17**. The Presentation stated that Neonicotinoids were used on:

- 100% of canola acreage;99% of corn crop acreage;
- 95% of dry bean acreage;
- 65% of soybean crop acreage; and
- 25-33% of cereals acreage;

(l) OMAFRA Field Crop Entomologist and presenter, Tracey Baute, subsequently stated: "It is time to start using these insecticide seed treatments only when necessary. Not every acre in the province needs

protection from wireworm and grubs. Only 10 to 20% of the acres are at risk of these two pests, particularly those fields with sandy or silty soils", the whole as appears from an article from Field Crop News entitled: "New 2014 BMPS for pollinator protection and use of Insecticide treated seed", dated January 20, 2014, a copy of which is produced herewith as **Exhibit P-18**;

(m) On May 27, 2014, the Council for Prince Edward County (the "County") passed a resolution that it would immediately discontinue the use of Neonicotinoid products on municipal property. The County also resolved to, among other things:

- call on the provincial and federal governments to declare a moratorium surrounding the use of Neonicotinoid crop treatments, as soon as possible, pending further study;

- circulate its resolution to "other municipalities through the Association of Municipalities of Ontario, to request their support on this serious issue";

- forward its resolution to "The Right Honourable Stephen Harper, The Honourable Gerry Ritz, Federal Minister of Agriculture and Agri-Food, The Honourable Rona Ambrose, Federal Minister of Health, Federal MP Daryl Kramp, Federal Opposition Members at this time, and the Premier of Ontario, Provincial Minister of Agriculture and local Provincial Member of Parliament immediately after the Provincial election"; and

- "[u]ntil such time as a moratorium is enacted where an agronomic assessment shows particular fields to be at minimal risk of damage from soil insects...urge farmers to order seed not treated with insecticide for the 2015 growing season, and...urge seed companies to make adequate supplies available";

(n) On July 7, 2014, King Township passed a resolution supporting the actions taken by the County, confirming its commitment to the non-use of Neonicotinoid products on any municipally owned properties;

(o) In or around October 2014 in accordance with Section 58 of the *Environmental Bill of Rights, 1993,* the Environmental Commissioner of Ontario, Mr. Gord Miller ("ECO"), released the 2013/2014 Annual Report of the Environmental Commissioner of Ontario ("Annual Report"). As part of the Annual Report, the ECO examined several areas of concern relating to Ontario's agriculture including the growing problem of pollinator declines and the possible role of Neonicotinoid pesticides. At page 54 of the Annual Report, it states, the whole as appears from the Annual Report 2013-2014 of the Environmental Commissioner of Ontario entitled: "*Managing new challenges",* a copy of which is produced above as **Exhibit P-19**:

"While the impact of neonicotinoids on bees has received a great deal of attention, honey bee declines may be a warning

sign of a larger ecological problem. Troubling questions are being raised about the broader environmental effects of these pesticides. .... This is of concern because the neonicotinoids are not only persistent in soil and water, but also water soluble and highly mobile within ecosystems. ...

As a result, neonicotinoids may accumulate in soil, potentially having adverse effects on soil ecosystems and creating a likelihood of uptake by subsequently planted crops and wild plants. They [Neonicotinoids] may also migrate into ground and surface water";

(p) The ECO stated following the release of the Annual Report that, the whole as appears from an article from the Toronto Sun entitled: "*Bee-killing pesticides bigger threat than DDT: Ontario enviro commish*", dated October 7, 2014, a copy of which is produced herewith as **Exhibit P-20**:

"... everything I have before me ... suggests to me as an ecologist that this [Neonicotinoids] is the biggest threat to the structure and ecological integrity of the ecosystem that I have encountered in my life. Bigger than DDT";

(q) On or around July 1, 2015, Ontario enacted Ontario Regulation 139/15 under the *Pesticides Act*, RSO 1990, c P-11, which specifically targets and regulates the use of Neonicotinoid-treated seeds. This regulation was enacted by the Province of Ontario in response to the growing concerns over the potentially harmful effects of Neonicotinoids on pollinators. Among other things, the Regulation requires the filing of a detailed Pest Assessment report with the Ministry of the Environment, Conservation and Parks before the Neonicotinoid-treated seeds can be purchased and used on more than 50% of a farmer's land;

(r) In 2015, the city of Montreal issued a ban on neonicotinoid pesticides in an effort to better protect the bee population;

(s) On May 4, 2016, the city of Dollard-des-Ormeaux adopted By-law R-2016-099-1 entitled "By-law to amend By-law R-2015-099 concerning the use of pesticides in order to ban the use of neonicotinoids in the city";

(t) On May 9, 2016, the city of Sainte-Anne-de-Bellevue adopted By-law 790 entitled "Règlement relatif à l'utilisation des pesticides" in order to ban the use of pesticides of the neonicotinoid family. Any use of pesticides of the neonicotinoid family is prohibited outside of buildings. This applies without exception to any type of application or land uses;

(u) On April 4, 2016, the city of Kirkland adopted a By-law prohibiting the use of various insecticides included in the Neonicotinoid family of pesticides;

(v) On May 10, 2017, the city of Pointe-Claire adopted By-law PC-2865 entitled "By-law respecting the use of pesticides in the territory of the city of Pointe-Claire" banning the use of Neonicotinoids;

(w) On August 19, 2013 the Québec government released an overview of the state of Neonicotinoids in Québec, which confirmed that Neonicotinoids were detected in numerous cases of Bee mortalities, the whole as appears from the copy of the document which is produced herewith as **Exhibit P-21**;

(x) The Québec government subsequently released the Québec Pesticide Strategy 2015-2018, which seeks to protect pollinators by reducing their exposure to Neonicotinoids;

(y) In 2012 and 2013, the PMRA revealed that close to 70% of dead Bees collected in Ontario and Québec were found to contain Neonicotinoid residues, the whole as appears from the copy of the document which is produced herewith as **Exhibit P-22**;

(z) In 2013, Japan refused to accept containers of Canadian buckwheat that was grown in 2012 on the grounds that it exceeded Japan's maximum residue limit for thiamethoxam. The buckwheat farmers did not apply thiamethoxam to their crops and indicated a belief that the contamination may have resulted from residues subsisting in the soil from previously-treated crops;

111. Despite these events and findings, the Defendants did not take any steps to remedy this defect or to eliminate, reduce, ameliorate or mitigate the impacts of their defective Neonicotinoids on the property of the Plaintiff and Class Members;

112. Instead, the Defendants continued to manufacture, market and sell Neonicotinoids in Quebec and elsewhere. They also continued to renew their conditional Neonicotinoids registrations, seek and obtain registrations for new Neonicotinoid-based products, and register existing Neonicotinoids for new uses and application methods;

The Defendants Failed to Properly Research and Test Neonicotinoids

113. The Defendants and the Class are part of an integrated industry;

114. The Defendants and the Class are further linked through the PMRA's pest control product registration regime. The PMRA regulates pest control products in order to safeguard human health and the environment and to ensure that the risks associated with such products are acceptable;

115. Since 2003, the Defendants' Neonicotinoid registrations have been conditional on the Defendants providing the PMRA with further information and studies on the

environmental risks of Neonicotinoids, including field studies on Bee toxicity and impacts on Bees;

116. The PMRA's conditional registrations and their renewal are meant to be time limited exceptions to the normal requirement that before a pest control product may be sold or used in Canada, it must possess a full registration based on meeting all statutory information requirements;

117. To date, the Defendants have still not provided the PMRA with information that satisfies the conditions for registration of their Neonicotinoids, particularly, chronic toxicity hive studies for Bees;

118. In December 2017, the PMRA conducted a re-evaluation of agricultural uses for thiamethoxam, specifically to assess the risks to pollinators. The report suggested that combining thiamethoxam with fungicides increased toxicity. The report also indicated that toxicity of thiamethoxam depended on the strain and age of Bee and on the route of exposure, with higher toxicity resulting from direct contact exposure (*i.e.* when a Bee gets directly sprayed by thiamethoxam) than indirect exposure (*i.e.* when a Bee lands on or walks on leaves or other plant parts that were sprayed with thiamethoxam). In addition, there were demonstrated effects on learning and on proboscis[5] extension when Bees were orally exposed to thiamethoxam, the whole as it appears from the copy of the document which is produced herewith as **Exhibit P-23**;

119. In December 2017, the PMRA conducted a re-evaluation of agricultural uses for clothianidin and its associated end-use products, specifically to assess the risks to pollinators. The report suggested that foliar uses, soil application and seed treatments of clothianidin and spray drift pose a risk to adult Bees and Bee larvae from both acute and chronic exposures to crops, the whole as it appears from a copy of the document which is produced herewith as **Exhibit P-24**.

120. In May 2018, the PMRA conducted a re-evaluation of agricultural uses for imidacloprid specifically, to assess the risks to pollinators. The laboratory studies reported that imidacloprid affected Bee metabolism, and that there are potential sublethal effects of imidacloprid on the learning, flight and reproductive functions of adult Bees, the whole as it appears from the copy of the document which is produced herewith as **Exhibit P-25**;

121. Not only the did the Defendants fail to properly research and test the impacts of Neonicotinoids on Bees before registering them for use in Canada, they have also

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[5] The proboscis contains the tongue of the Bee; Bees automatically extend their proboscis when they sense a desirable taste or smell through their antennae or feet; they can be trained to do so in conjunction with a small followed by a sugar reward, and then tasted to see if they remember this association. This is how most of bee learning and memory tests are done. The ability of Bees to remember a learned association declines after exposure to Neonicotinoids.

failed to complete this work over the 15 year period since their Neonicotinoids were conditionally registered;

122. In the documents submitted in support of Syngenta's User Requested Minor Use Label Expansion ("URMULE"), dated November 3, 2011, Syngenta acknowledged that Neonicotinoid products are toxic to Bees that the product is systemic and that residues from soil may be transported through plants into leaves, pollen and nectar. The information confirms that Bees may be exposed directly, through spray drift, or indirectly, through residues on/in leaves, pollen and nectar in flowering crops and weeds. The Neonicotinoid is identified as containing active ingredients that can be harmful to Bees, the whole as appears from the copy of the document which is produced herewith as **Exhibit P-26**;

123. At all time relevant to these proceedings, the Defendants have taken no steps at all to ensure that Neonicotinoids were properly tested in a way that would disclose their risks to the Class;

124. This failure is particularly egregious because, as designers and developers of Neonicotinoids, the Defendants were in the best position to obtain the necessary information about the risks of Neonicotinoids and had the expertise to properly assess the possible harms of Neonicotinoids to the Class;

125. In sum, the Defendants are at fault for breaching the duties described in the paragraphs set out above, by:

(a) designing and marketing Neonicotinoids in a way that, when used as directed, is contrary to the principles and objectives of sustainable pest management;

(b) marketing Neonicotinoids in a manner which was intended to and did have the effect of rendering Neonicotinoids ubiquitous and inescapable for Bees, resulting inevitably in damage to the Class;

(c) failing to adequately research, test and study the impact of Neonicotinoids on Bees prior to registering, distributing and selling Neonicotinoids;

(d) failing to adequately research, test and study Neonicotinoids in a manner that would fully disclose the magnitude of their risks to the Class;

(e) negligently designing and marketing Neonicotinoids that were likely to, and did, cause foreseeable damage to the Class;

(f) designing, marketing and selling Neonicotinoids, which are hazardous products that contain dangerous defects;

(g) negligently or recklessly ignoring or failing to keep up to date on scientific studies and developments pertaining to Neonicotinoids and, particularly, their impacts on Bees;

(h) failing or refusing to monitor, investigate, evaluate and follow up on adverse events associated with use of Neonicotinoids;

(i) after becoming aware of the problems or potential problems with the use of Neonicotinoids and their impacts on Bees and the Class, failing to seek to suspend the registrations of Neonicotinoids, publicize the problems, warn of the harm, and cease or limit manufacturing and distribution of Neonicotinoids;

(j) failing to institute an effective products recall upon discovering the harm of Neonicotinoids to Bees and the Class;

(k) failing to comply with the requirements of the PMRA with respect to the registration of Neonicotinoids;

(l) failing to provide the PMRA and other regulatory agencies with complete and accurate information on Neonicotinoids and Bee exposure on a timely basis and as such information became available;

(m) failing to otherwise take reasonable steps to avoid harm and/or damage to the Class; and

(n) failing to act in good faith toward the Representative Plaintiff and the Class;

126. Accordingly, the Defendants committed a fault in violation of section 1457 *CCQ* in their research, design, manufacture, marketing, distribution and sale of Neonicotinoids;

***Common Issue D**: Did Bayer CropScience AG and/or Bayer CropScience Inc. and/or Bayer Inc. commit a fault in violation of section 1457 C.C.Q. by failing to warn the Class about the risks to Bees associated with neonicotinoids?*

***Common Issue H**: Did Syngenta International AG and/or Syngenta Canada Inc. commit a fault in violation of section 1457 C.C.Q. by failing to warn the Class about the risks to Bees associated with neonicotinoids?*

127. The Defendants owed the Class a duty to warn them of all of the dangers and real and substantial risks of danger associated with Neonicotinoids and the harm to Bees described in the paragraphs above.

128. The Defendants knew that the use of their Neonicotinoids was inherently harmful and that it caused harm to Bees and damages to Beekeepers and they chose to ignore the foreseeable consequences of the use of the Neonicotinoids they designed, marketed and sold;

129. The Defendants did not take any steps at all to warn the Class of these dangers. Instead, and as described in the paragraphs below, the Defendants concealed these risks.

130. The Neonicotinoids marketed by the Defendants do not afford the safety which a person is normally entitled to expect, particularly by reason of a defect in design, poor preservation or presentation, or the lack of sufficient indications as to the risks and dangers it involves or as to the means to avoid them;

131. As noted by the Québec court of Appeal in its decision on June 15, 2018: « Il faut tenir compte également des obligations incombant aux requérantes en vertu des *art. 1468*, *1469* et *1473 C.c.Q.*, notamment au chapitre de leur devoir d'information », the whole as appears from the decision which is produced herewith as **Exhibit P-27**;

132. The Defendants breached their duty to warn the Class;

133. Accordingly, the Defendants committed a fault and are liable for the damages caused to the Class under section 1457 *CCQ* and following, in failing to warn the Class about the dangers of Neonicotinoids and the risks of harm to their property;

***Common Issue E**: Did Bayer CropScience AG and/or Bayer CropScience Inc. and/or Bayer Inc. commit a fault in violation of section 1457 C.C.Q. by making misstatements with respect to the risks to Bees associated with neonicotinoids?*

***Common Issue** I: Did Syngenta International AG and/or Syngenta Canada Inc. commit a fault in violation of section 1457 C.C.Q. by making misstatements with respect to the risks to Bees associated with neonicotinoids?*

134. The Defendants owed the Class a duty to ensure that the representations they made with respect to Neonicotinoids were accurate and made with due care;

135. The connection between the sale and use of Neonicotinoids and the impact of those substances on Bees has always been concealed and/or denied by the Defendants. When the Class' damages were first suffered in Québec in 2006, they were attributed to a pesticide-resistant parasitic mite, *Varroa destructor*, and/or unusual weather conditions;

136. This representation was exposed to the Class as a fiction in 2012, when information came to the attention of the Class—from sources other than the Defendants—connecting the Class' damages to the Defendants' Neonicotinoids, the whole as appears from Health Canada's PMRA Annual Report 2012-2013, a copy of which is produced herewith as **Exhibit P-28**, and from Health Canada's Update on Canadian Bee Incident Reports, 2012-2016, a copy of which is produced herewith as **Exhibit P-29**;

137. Further, the Defendants have consistently represented that, when used as directed, Neonicotinoids do not present an unacceptable risk to Bees;

138. This representation was not accurate;

139. Several recent field studies confirm that Neonicotinoids are harmful to Bees even when used as prescribed. These studies are described in an article from the journal, Science, entitled: "*A cocktail of toxins: The effects of sustained neonicotinoid exposure on bees depend on location, but are usually negative*," dated June 30, 2017, a copy of which is produced herewith as **Exhibit P-30**;

140. One study related to the effects of neonicotinoid-treated crops on three bee species (including Bees) across Hungary, Germany and the United Kingdom. The researchers found that neonicotinoids caused a reduced capacity for bee species to establish new populations in the year following neonicotinoid exposure, the whole as appears in an article from the journal, Science, entitled: "*Country-specific effects of neonicotinoid pesticides on honey bees and wild bees*," dated June 30, 2017, a copy of which is produced herewith as **Exhibit P-31**;

141. The second study was a study of how field-realistic exposure to Neonicotinoids can reduce Bee health in corn-growing regions of Canada. The researchers found that Neonicotinoids increased worker mortality and were associated with declines in social immunity and increased queenlessness over time, the whole as appears in an article from the journal, Science, entitled: "*Chronic exposure to neonicotinoids reduces honey bee health near corn crops*", dated June 30, 2017, a copy of which is produced herewith as **Exhibit P-32**;

142. A third field study conducted in the United States indicated that over 94% of honey bee foragers throughout the state of Indiana are at risk of exposure to varying levels of neonicotinoid insecticides, including lethal levels, during sowing of maize despite no documented benefit of the insecticidal seed treatments for crop yield, the whole as appears in an article from the Journal of Applied Ecology, entitled: "*Planting of neonicotinoid-treated maize poses risks for honey bees and other non-target organisms over a wide area without consistent crop yield benefit*," dated 2017, a copy of which is produced herewith as **Exhibit P-33**;

143. The Defendants' representation was not made with due care;

144. The representation was made notwithstanding: (i) the scientific evidence regarding the risks of Neonicotinoids to Bees; and (ii) notwithstanding the actions taken to restrict Neonicotinoid use across the globe due to their adverse impacts on Bees, which are collectively described in the paragraphs above. Defendants knew or ought to have known about the risks of Neonicotinoids to Bees since as early as 1995, when the first scientific studies linking the use in Neonicotinoids to harm to Bees came out;

145. Instead, the Defendants have continued to ignore and deny the effects of Neonicotinoids and have represented and continue to represent an absence of adverse effects if/when used according to the instructions and labels of the products, as it appears from documents from the Defendants which is produced herewith as **Exhibit P-34**;

146. Further, the Defendants have not complied with the PMRA's requests for Beehive toxicity studies, meaning that they: (i) failed to perform these studies; (ii) performed the studies and failed to produce the results because the results did not support their representation; or (iii) conducted these studies at a superficial level;

147. The Defendants are at fault for breaching their duties that ensure that the representations they made with respect to Neonicotinoids were accurate and made with due care by:

(a) making false, misleading and deceptive statements, including in circumstances where the statements were unreasonable in the face of the risks that were or ought to have been known to the Defendants, relating to:

(i) the use and possible impacts of Neonicotinoids;

(ii) the risks of Neonicotinoids to Bees and damage to the Class; and

(iii) the state of research, opinion and scientific literature pertaining to the risks associated with the use of Neonicotinoids to Bees and the Class;

(b) making these, false, misleading and deceptive representations to the PMRA; and

(c) failing or refusing to comply with the PMRA's requests for information and studies on the impacts of Neonicotinoids on Bees;

148. Accordingly, the Defendants committed a fault in violation of section 1457 *CCQ* in making misstatements with respect to the risks to Bees associated with exposure to Neonicotinoids;

***Common Issue F**: If the above questions are answered in the affirmative, did the Plaintiff and the Class suffer damages as a result of the conduct of Bayer CropScience AG and/or Bayer CropScience Inc. and/or Bayer Inc.?*

***Common Issue J**: If the above questions are answered in the affirmative, did the Plaintiff and the Class suffer damages as a result of the conduct of Syngenta International AG and/or Syngenta Canada Inc.?*

149. Neonicotinoids are among the most widely used insecticides in Canada and have been used throughout Québec since 2005;

150. It is no coincidence that the Class began to suffer significant losses in the spring of 2006;

151. Class Members owned Bees that died or were harmed and/or owned Beehive products that were contaminated or otherwise damaged as a direct result of the Defendants' Neonicotinoids. The damages suffered by Class Members would not have occurred but for the fault of the Defendants;

152. The Defendants' Neonicotinoids were the only neonicotinoids readily available for agricultural use in Québec during the Class Period. The damages suffered by Class Members could only have been caused by one or more of the Defendants;

153. These damages cannot be attributed to agricultural conditions. The systemic nature of the Neonicotinoids means that they are present throughout the tissues, pollen and nectar of a treated plant. The Neonicotinoids cannot be washed off or otherwise removed from the plant, so their toxicity is not impacted by agricultural conditions like rain, wind or elevation;

154. These damages are also not attributable to environmental conditions. The damages suffered by the Class far exceed the typical over-wintering mortality rate of roughly 10 to 15%. This mortality rate increased sharply in the spring of 2006 and has remained far higher than average throughout the Class Period;

155. One of the effects of Neonicotinoids is to make Bees more susceptible to disease, including varroosis disease caused by *Varroa destructor* mites;

156. The fault of the Defendants has caused damages to the Class;

***Common Issue K**: What is the nature and amount of the damages each member of the Class is entitled to?*

157. In 2016, there were over 786 beekeepers for 59 098 Colonies in Québec, of which over 260 had 10 colonies or more, and were, among other activities, involved in producing honey, supplying pollination services, and/or raising Queen Bees, as it appears from Exhibit P-1;

158. In 2017 – 2018, winter losses in Québec was approximately 30,7% mortalities, as it appears from the *Rapport sur la mortalité hivernales des colonies d'abeilles au Canada (2018),* which is produced herewith as **Exhibit P-35** ;

159. All Class Members have been injured by the Defendants' Neonicotinoids and wrongdoings;

160. Firstly, all Class members, except legal persons, have suffered non pecuniary damages resulting from the Defendants' unlawful interference with their right to the peaceful enjoyment and free disposition of their properties;

161. These Class members had to cope, on an annual basis, with the stress and insecurity related to the destruction and loss their Beehives and Bees and were forced to put in additional time and care in trying to save and/or maintain their Beehives and Bee populations, over the Class Period;

162. Each Class members, except legal persons, who owned Beehives during the Class Period is entitled to the following amount, on an annual basis, representing the non-pecuniary damages suffered:

Number of hives	Amount/year
From 1 to 9	1000$
From 10 to 49	2000$
From 50 to 199	4000$
More than 200	5000$

163. Secondly, the Defendant's faults resulted in Class members suffering substantial pecuniary losses, which include, but are not limited to: the costs of replacing killed and weakened Bees, loss of Queen Bees, contaminated beeswax, comb and Beehives; reduced honey production; contaminated honey; lost profits associated with, among other things, reduced production and quality of honey, beeswax, mead and other outputs, and the inability to perform contracted pollination services; the costs associated with the purchase of honey to meet existing contracts; and the time and labour costs required to replace contaminated Beehives and nurture new Colonies; and any other costs incurred as a result of the exposure of their Bees to Neonicotinoids;

164. These losses were not insured nor are they currently insurable;

165. The pecuniary damages in paragraph 163 above can also be determined on an aggregate basis;

166. Based on the available data, damages can be estimated per Class Member per year on a collective basis for the three major categories of loss (*i.e.* Beehive losses, honey production losses, and Queen Bee losses);

(a) Beehive losses: The Québec Bee Association maintains records on the number of Beehives in the province by year and by owner. The Québec Bee Association also maintains records on the average over-wintering mortality rates by year. The actual mortality rate (minus the expected—or pre-Neonicontinoid—mortality rate) can be applied to each owner to determine their Beehive-related losses per year on a collective basis;

(b) Honey production losses: The Québec Bee Association maintains records on the amount of honey expected to be produced, by year, and the amount of honey actually produced, by year, along with the wholesale price of honey. These data can be used to determine average losses related to honey production per Class Member per year;

(c) Queen Bee losses: The average price for Queen bees over the Class Period can be obtained from one or any of the major Queen bees supplier in Québec, which approximately ranges from 25$ to 40$ per Queen ;

167. Alternatively, Class Member damages can be individually evaluated using the following formula:

Member damages = (number of Beehives lost x replacement cost) +

(lbs honey lost x wholesale price of honey) +

(lbs of honey purchased to fill contracts x wholesale price of honey) +

(number of Queen Bees lost x replacement cost) +

Expenses for extra care;

168. Finally, in the circumstances of this case, the Defendants applied callous and reckless disregard for the property of Class Members;

169. The Defendants acted with full knowledge of the immediate and natural, or at least extremely probable, consequences that their conduct would cause to the property of Class Members;

170. Accordingly, Class Members are also entitled to punitive damages;

***Common Issue L**: Are the Defendants jointly, or severally, liable for compensatory damages suffered by the Class?*

171. The Neonicotinoids researched, designed, developed, manufactured, marketed, distributed and/or sold by the Defendants are intrinsically dangerous. Each of them contains the active neonicotinoid ingredient, which is toxic to Bees;

172. All of Bayer's imidicloprid and clothianidin products and all of Syngenta's thiamethoxam products cause harm to Bees because each of them contain neonicotinoid, which interferes with the nicotinic receptor in the central nervous system of Bees;

173. Therefore, any and all of the Neonicotinoids caused the damage suffered by the Class;

174. Since it is impossible to determinate the proportions in which each Defendant contributed to the damages suffered by the Class, the Defendants should be held severally, liable for the damages suffered by the Class;

THE INDIVIDUAL CASE OF THE REPRESENTATIVE PLAINTIFF, STEVE MARTINEAU

175. The Representative Plaintiff, Steve Martineau, and his spouse, Marie-Eve Cyr, operate a family business operating under the name, Château de Cyr;

176. Château de Cyr is an undeclared partnership between Mr. Martineau and his spouse, Marie-Eve Cyr, which was registered on February 22, 2012. It operates in the field of beekeeping and specializes in breeding Queen Bees, which are sold to honey producers. Honey producers represent between 90-100% of Château de Cyr's customers;

177. There are very few Queen Bee breeding companies in Québec. There are approximately five companies, including Château de Cyr;

178. Mr. Martineau also produces and sells other products and by-products from the Beehive, including queen cells, nuclei/nucs (start-up Beehives), honey, pollen, beeswax and mead;

179. Mr. Martineau owns 200 hives;

180. Mr. Martineau has suffered important losses in his Bee population over the past several years. He has seen an abnormal and recurring mortality rate, year after year, of his Bee Colonies;

181. For example, in the early June sowing period (the period during which corn fields are seeded), Mr. Martineau observed that his foraging (worker) Bees were dying by the thousands. He also observed hundreds of dead Bees at the Beehive entrance and near ditches, along with other Bees that were weakened or completely disoriented;

182. As described above, foraging Bees are those that fly out of the Beehive in search of the nectar, pollen and water that are indispensable to the survival of the Colony. The "nurse worker" Bees must consume honey and pollen to be able to produce royal jelly, the exclusive food of the Queen Bee. The royal jelly nourishes the Queen Bee of the Colony during her entire life starting from the day she leaves the queen cell, and nourishes the larvae during the first stages of their development. The Queen Bee may lay between 1,200 to 2,500 eggs per day;

183. Due to various abnormal behaviors observed by Mr. Martineau, especially the interruption of egg-laying by the Queen Bees, the unusual mortality or atrophy of the Queen Bees and larvae and egg dehydration, there was not any royal jelly in the Beehives;

184. Noticing that his Bee population was diminishing quickly, Mr. Martineau had to undertake the "requeening" of affected Colonies—meaning that he had to replace the dead or weakened Queen Bees with queen cells that contain future Queen

Bees, so as to avoid the complete loss of his Colonies. This caused him to suffer financial losses and additional costs for labour and medication;

185. In addition, many of Mr. Martineau's customers, who had similar problems, looked to replenish their Queen Bees through Mr. Martineau, but because of his business's own difficulties, he could not fulfill these demands;

186. Mr. Martineau had samples of water and dead Bees analyzed and found that they contained Neonicotinoids, as it appears from the various reports of the Ministry of Agriculture, Fisheries and Food of Québec, copies of which are produced en liasse herewith as **Exhibit P-35**;

187. Over the Class Period and up to this day, Mr. Martineau had to endure the stress and insecurity related to the faith of his affected Colonies and to spend hundreds of extra hours each year and incur added remediation costs due to the unusual mortality or atrophy of his Queen Bees, and the dehydration of the larvae and eggs in his Colonies;

188. Mr. Martineau estimates that, depending on the year, he lost around 300 to 400 Queen bees, on average, each year, over the Class Period;

189. Mr. Martineau also suffered important economic losses during the Class Period, which can be estimated between 15 000$ and 20 000$ per year;

FOR THESE REASONS, MAY IT PLEASE THE COURT TO:

GRANT the Plaintiff's action against the Defendants;

CONDEMN the Defendants, jointly and severally, to pay the Class, on an aggregate basis, the amount to be determined as compensatory damages, the whole with interest and additional indemnity pursuant to section 1619 of the *Civil Code of Québec*, reckoned from the date of service of the Motion for Authorization to Institute a Class Action (October 22, 2014);

ORDER the collective recovery of those claims;

OR, ALTERNATIVELY:

CONDEMN the Defendants, jointly and severally, to pay the Plaintiff the amount of 240 000$, subject to adjustments, as compensatory damages, the whole with interest and additional indemnity pursuant to section 1619 of the *Civil Code of Québec*, from and as of the date of service of the Motion for Authorization to Institute a Class Action (October 22, 2014);

CONDEMN the Defendants, jointly and severally, to pay every Class Members an amount to be determined as compensatory damages at a subsequent individual recovery stage, the whole with interest and additional indemnity pursuant to section 1619 of the *Civil Code of Québec*, reckoned from and as of the date of service of the Motion for Authorization to Institute a Class Action (October 22, 2014);

DETERMINE special modes of proof and procedure to determine and quantify the claims made by Class Members for compensatory damages at a subsequent individual recovery stage;

AND:

CONDEMN the Defendants, each in a proportion of 50%, to pay every Class Members the amount of 25 000 $ for punitive damages and/or grant Class Members such further relief payment as this Honourable Court may determine as being just and proper;

ORDER the collective recovery of those claims;

THE WHOLE with costs, including the costs of all exhibits, experts, expertise and publication notices.

Québec, November 29, 2018.

Siskinds, Desmeules

Karim Diallo avocat
karim.diallo@siskindsdesmeules.com
SISKINDS, DESMEULES, AVOCATS
43 rue Buade, Bureau 320
Québec (Québec) GIR 4A2
Téléphone : (418) 694-2009
Télécopieur : (418) 694-0281
Code de l'impliqué : BB6852

Notification : notification@siskindsdesmeules.com

SUMMONS

(articles 145 and following C.C.P.)

TAKE NOTICE that the plaintiff has filed this originating application in the office of the Superior court in the judicial district of Montreal.

You must answer the application in writing, personally or through a lawyer, at the courthouse of Montreal situated at:

1, rue Notre-Dame Est

Montréal (Québec) H2Y 1B6

within 15 days of service of the application or, if you have no domicile, residence or establishment in Québec, within 30 days. The answer must be notified to the plaintiff's lawyer or, if the plaintiff is not represented, to the plaintiff.

If you fail to answer within the time limit of 15 or 30 days, as applicable, a default judgement may be rendered against you without further notice and you may, according to the circumstances, be required to pay the legal costs.

In your answer, you must state your intention to:

- Negotiate a settlement;
- Propose mediation to resolve the dispute;
- Defend the application and, in the cases required by the Code, cooperate with the plaintiff in preparing the case protocol that is to govern the conduct of the proceeding. The protocol must be filed with the court office in the district specified above within 45 days after service of the summons;
- Propose a settlement conference.

The answer to the summons must include your contact information and, if you are represented by a lawyer, the lawyer's name and contact information.

You may ask the court to refer the originating application to the district of your domicile or residence, or of your elected domicile or the district designated by an agreement with the plaintiff.

If the application pertains to an employment contract, consumer contract or insurance contract, or to the exercise of a hypothecary right on an immovable serving as you main residence, and if you are the employee, consumer, insured person, beneficiary of the insurance contract or hypothecary debtor, you may ask for a referral to the district of your domicile or residence or the district where the immovable is situated or the loss occurred.

The request must be filed with the special clerk of the district of territorial jurisdiction after it has been notified to the other parties and to the office of the court already seized of the originating application.

If you qualify to act as a plaintiff under the rules governing the recovery of small claims, you may also contact the clerk of the court to request that the application be processed according to those rules. If you make this request, the plaintiff's legal costs will not exceed those prescribed for the recovery of small claims.

Within 20 days after the case protocol mentioned above is filed, the court may call you to a case management conference to ensure the orderly progress of the proceeding. Failing this, the protocol is presumed to be accepted.

In support of the originating application, the plaintiff intends to use the following exhibits:

Exhibit P-1: Copy of a document titled "Portrait-Diagnostic Sectoriel de l'Apiculture au Québec;

Exhibit P-2: Copy of an article from the American Bee Journal, dated June 2014;

Exhibit P-3: Copy of the Annual Reports of the Environmental Commissioner of Ontario;

Exhibit P-4: Copy of a Supplemental Report 2014/2015;

Exhibit P-5: Copy of a report from the Task Force on Systemic Pesticides entitled: *"Worldwide integrated assessment of the impacts of systemic pesticides on biodiversity and ecosystems",* dated August 23, 2014;

Exhibit P-6: Copy of Science published by the American Association for the Advancement of Science;

Exhibit P-7: Copy of an update of The Task Force on Systemic Pesticides (2017);

Exhibit P-8: Copy of the Volume 61 of the Official Journal of the European Union, dated May 30, 2018;

Exhibit P-9: Copy of the Health Canada's Registration Decision RD2013-14, dated July 23, 2013;

Exhibit P-10: Copy of the study of the UK's Center for Ecology and Hydrology (June 2017);

Exhibit P-11: Copy of the Health Canada's Evaluation of Pesticide Incident Report 2010-3100, dated December 30, 2010;

Exhibit P-12: Copy of the "Health Canada's Evaluation of Pesticide Incident Report 2010-3391, dated December 31, 2010;

Exhibit P-13: Copy of the "Health Canada's report entitled: "Evaluation of Canadian Bee Mortalities that Coincided with Corn Planting in Spring 2012";

Exhibit P-14: Copy of the Presentation of Discussion Paper "Pollinator Health" – OMAFRA;

Exhibit P-15: Copy of the Ontario government report entitled: "Pollinator Health" dated November 25, 2014;

Exhibit P-16: Copy of the Health Canada interim report entitled: "Evaluation of Canadian bee mortalities in 2013 related to neonicotinoid pesticides", dated September 26, 2013;

Exhibit P-17: Copy of the 2013 OMAFRA presentation titled "Neonicotinoids and Field Crop Production in Ontario" ("Presentation");

Exhibit P-18: Copy of an Article from Field Crop News entitled "New 2014 BMPS for pollinator protection and use of Insecticide treated seed", dated January 20, 2014;

Exhibit P-19: Copy of the Annual Report 2013-2014 of the Environmental Commissioner of Ontario entitled: "Managing new challenges";

Exhibit P-20: Copy of an article from the Toronto Sun entitled "Bee-killing pesticides bigger threat than DDT: Ontario enviro commish", dated October 7, 2014;

Exhibit P-21: Copy of the document dated August 19, 2013 from the Quebec government, released an overview of the state of Neonicotinoids in Quebec;

Exhibit P-22: Copy of the document of PMRA which one revealed that close to 70% of dead Bees collected in Ontario and Quebec were found to contain Neonicotinoid residues;

Exhibit P-23: Copy of the document of December 2017 from PMRA (re-evaluation of agricultural uses for thiamethoxam, specifically to assess the risks to pollinators);

Exhibit P-24: Copy of the document of December 2017 from PMRA (re-evaluation of agricultural uses for imidacloprid specifically, to assess the risks to pollinators);

Exhibit P-25: Copy of document of May 2018 from PMRA (re-evaluation of agricultural uses for imidacloprid specifically to assess the risks to pollinators;

Exhibit P-26: Copy of the document submitted in support of Syngenta's User Requested Minor Use Label Expansion ("URMULE"), dated November 3, 2011;

Exhibit P-27: Decision of the Quebec Court of Appeal, dated June 15, 2018;

Exhibit P-28: Copy of the Health Canada's PMRA Annual Report 2012-2013;

Exhibit P-29: Copy of the Health Canada's Update on Canadian Bee Incident Reports, 2012-2016;

Exhibit P-30: Copy of an article from the journal Science, entitled "A cocktail of toxins: The effects of sustained neonicotinoid exposure on bees depend on location, but are usually negative", dated June 30, 2017;

Exhibit P-31: Copy of an article from the journal Science, entitled "Country-specific effects of neonicotinoid pesticides on honey bees and wild bees", dated June 30, 2017;

Exhibit P-32: Copy of an article from the journal Science, entitled "Chronic exposure to neonicotinoids reduces honey bee health near corn crops", dated June 30, 2017;

Exhibit P-33: Copy of an article from the Journal of Applied Ecology, entitled: "Planting of neonicotinoid-treated maize poses risks for honey bees and other non-target organisms over a wide area without consistent crop yield benefit", dated 2017;

Exhibit P-34: Documents from the Defendants demonstrated that they have continued to ignore and deny the effects of Neonicotinoids and have represented and continue to represent an absence of adverse effects if/when used according to the instructions and labels of the products;

These exhibits are available on request.

If the application is an application in the course of a proceeding or an application under Book III, V, excepting an application in family matters mentioned in article 409, or VI of the Code, the establishment of a case protocol is not required; however, the application must be accompanied by a notice stating the date and time it is to be presented.

Québec, November 29, 2018

Siskinds Desmeules

Karim Diallo avocat
karim.diallo@siskindsdesmeules.com
SISKINDS, DESMEULES, AVOCATS
43 rue Buade, Bureau 320
Québec (Québec) GIR 4A2
Téléphone : (418) 694-2009
Télécopieur : (418) 694-0281
Code de l'impliqué : BB6852

Notification : notification@siskindsdesmeules.com

C A N A D A
PROVINCE OF QUEBEC
DISTRICT OF MONTREAL
(Class Action)
SUPERIOR COURT
NO : 500-06-000714-143

STEVE MARTINEAU

Plaintiff

c.

BAYER CROPSCIENCE INC.
and
BAYER INC.
and
BAYER CROPSCIENCE AG
and
SYNGENTA CANADA INC.
and
SYNGENTA INTERNATIONAL AG

Defendants

ORIGINATING APPLICATION – CLASS ACTION, SUMMONS AND LIST OF EXHIBITS (art. 141 and 583 C.C.P.)

BB-6852
Me Karim Diallo
karim.diallo@siskindsdesmeules.com
N/D : 67-154
Courriel : notification@siskindsdesmeules.com

SISKINDS, DESMEULES AVOCATS SENCRL

Les Promenades du Vieux-Québec
43 rue de Buade, bureau 320
Québec, (Québec) GIR 4A2

Tél.: (418) 694-2009 Tél.: (418) 694-0281
www.siskinds.com