



Canadian Association of Professional Apiculturists  
Preliminary report on Honey Bee Wintering Losses in Canada (2023)

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This report presents the **preliminary data** collected by the provinces of Canada regarding honey bee losses for the winter of 2022-2023. The final data will be published in the annual Statement on honey bee wintering losses in Canada. There may be discrepancies between results in the preliminary and final reports.

### **Methodology**

Beekeepers that owned and operated a specified minimum number of colonies (Table 1) were included in the survey. The survey reported data from full-sized producing honey bee colonies that were wintered in Canada, but not nucleus (partial) colonies. Thus, the information gathered provides a valid assessment of honey bee losses and commercial management practices.

The common definitions of a honey bee colony and a commercially viable honey bee colony in spring that were used in the survey were as the following:

- Honey Bee Colony: A full-sized honey bee colony either in a single or double brood chamber, not including nucleus colonies (splits).
- Viable Honey Bee Colony in Spring: A honey bee colony that survived winter, with a minimum of 4 frames with 75% of the comb area covered with bees on both sides on May 1<sup>st</sup> (British Columbia), May 15<sup>th</sup> (New Brunswick, Nova Scotia, Ontario, Prince-Edward-Island and Quebec) or May 21<sup>st</sup> (Alberta, Manitoba, Saskatchewan and Newfoundland and Labrador).

The questionnaire of colony loss and management was provided to producers using various methods of delivery including mail, email, an online and a telephone survey; the method of delivery varied by jurisdiction (Table 1). In each province, data were collected and analyzed by the Provincial Apiarist. All reported provincial results were then analyzed and summarized at the national level. The national percent winter loss was calculated as follows:

$$\text{Percentage Winter Loss} = \left( \frac{\text{Sum of the estimated total colony losses per province in spring 2023}}{\text{Sum of total colonies in operation in each province for 2022}} \right) \times 100$$

### **Preliminary results**

The survey delivery methods, size of beekeeping operations and response rate of beekeepers for each province are presented in Table 1. It is important to note that the total number of colonies operated in a province reported by this survey may vary slightly from Statistics Canada official numbers. In some provinces, the data collection periods for the provincial database and the Statistics Canada report are done at different times of year. This can result in minor discrepancies between the official Statistics Canada total number of colonies and this survey's total reported colonies per province.

Table 1: Survey parameters and honey bee colony mortality (2022-2023) by province

Province	Total number of colonies operated in 2022	Estimated number of colonies lost based on the estimated provincial winter loss	Type of data collection	Number of beekeepers targeted by survey	Number of respondents (% of participation)	Size of beekeeping operations targeted by survey (# colonies)	Number of respondents' colonies that were wintered in fall 2022	Number of respondents' colonies that were alive and viable in spring 2023	Percentage of surveyed colonies as a proportion of the total number of colonies in the province	Provincial Winter Loss including Non-viable Colonies
<b>Newfoundland and Labrador</b>	Data unavailable at this time									
<b>Prince Edward Island</b>	6 000	2 801	email	50	15 (30%)	1	2 639	1 407	44%	46.7%
<b>Nova Scotia</b>	28 670	4 484	online	46	20 (43%)	50	18 349	15 479	64%	15.6%
<b>New Brunswick</b>	13 406	3 106	email, postal, telephone	31	13 (42%)	50	9 220	7 084	69%	23.2%
<b>Quebec</b>	57 892	9 454	online	129	77 (60%)	50	34 016	28 461	59%	16.3%
<b>Ontario</b>	102 562	36 645	online, telephone	208	74 (36%)	50	35 304	22 690	34%	35.7%
<b>Manitoba</b>	103 841	32 974	online, email	173	59 (34%)	50	46 305	31 601	45%	31.8%
<b>Saskatchewan</b>	102 000	29 414	online	124	64 (52%)	100	31 879	22 686	31%	28.8%
<b>Alberta</b>	286 534	112 103	online	169	78 (46%)	100	171 573	104 447	60%	39.1%
<b>British Columbia</b>	64 000	17 436	online	312	70 (22%)	20	14 980	10 899	23%	27.2%
<b>CANADA</b>	<b>764 905</b>	<b>250 956</b>		<b>1242</b>	<b>470 (38%)</b>		<b>364 265</b>	<b>244 754</b>	<b>48%</b>	<b>32.8%</b>