

# Alberta 2019

## Beekeepers' Survey Results



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## Purpose of Survey

To address some of the data gaps and information needs of the beekeeping industry in Alberta, each year the Statistics and Data Development (SADD) Section of Alberta Agriculture and Forestry (AF) conducts a survey of beekeepers in the province. The survey results, along with information from other sources are used in the development of provincial and regional estimates for selected honey variables such as colony numbers, yield, production and prices. These estimates, along with the survey results are shared with survey participants, industry, Statistics Canada and other stakeholders.

This report focuses on the results of the Alberta 2019 Beekeepers' Survey and the related estimates developed.

## Methodology

The Alberta Beekeepers' Survey, which is provincial in scope, collects data from producers through a non-probability survey. In December 2019, survey questionnaires were mailed out to 1,531 beekeepers across the province. The questionnaire specifically asked survey participants to provide, at their earliest convenience, information on colony numbers, production, yield, bee purchases, prices (expected/actual), carry-over stocks and selected management practices, for their related beekeeping operation in 2019.

Participants were made aware that participation in the survey was voluntary. They were also assured that all individual responses would be kept confidential under both the Statistics Act of Canada, and the Alberta Freedom of Information and Protection of Privacy (FOIP) Act, by which the SADD Section is governed and operates. In return for their participation, respondents who were interested in the survey results would receive the resulting publication highlighting the results of the 2019 Beekeepers' survey. As of June 18, 2020, a total of 823 questionnaires were received, of which 796 were usable and formed the basis in developing the Alberta 2019 honey production estimates.

Survey responses received were reviewed for data completeness, validated and entered into an electronic database. The data was then subjected to computerized analyses, the results of which were rolled up into group summaries to preserve the confidentiality of data provided by individual respondents. In turn, the group summaries, in conjunction with input from industry, the provincial apiculturist and other Alberta AF staff, were used to develop provincial and regional estimates on the number of producers, colonies, yield and production.

It should be noted that the derived estimates could be subject to error. Some of the possible causes of error include data coding, data entry, editing and tabulation. Nonetheless, we believe that the statistics published in this report are reliable estimates for Alberta.

## Highlights of the Alberta 2018/2019 Paired Beekeeping Surveys

The following survey highlights are based on the responses of 347 producers who participated in both the 2018 and 2019 Alberta Beekeepers' Surveys (See Table 1).

### **Paired Sample Highlights:**

- ▶ In 2019, beekeepers purchased fewer packages/nucs than in 2018. Purchases decreased 5.4 per cent, with the average beekeeper buying 27 packages/nucs, compared to 29 in 2018. The majority of packages/nucs purchased in 2019 were imported (97.38 per cent), with the remainder purchased locally (2.62 per cent).
- ▶ The distribution of imported packages was as follows: New Zealand (78.70 per cent), Australia (19.48 per cent) and other not specified (1.82 per cent). Compared to 2018, imports of packages from Australia and other sources not specified increased, while those from New Zealand decreased. In 2019, the average price of packages from New Zealand was \$227.87, and other sources not specified was \$219.60.
- ▶ In 2019, beekeepers sourced 88.01 per cent of their nuc purchases from British Columbia, 7.58 per cent in Alberta, and the remaining 4.41 per cent from other Canadian provinces. Compared to 2018, the number of nucs purchased from British Columbia decreased while purchases in Alberta and from other Canadian provinces increased. The average nuc price in Alberta was \$251.68, while in British Columbia it was \$238.18 and from other Canadian provinces it was \$249.81.
- ▶ Individual queen purchases decreased 15.5 per cent in 2019, with producers purchasing 151 queens on average, compared to 178 in 2018. Practically all of the queen purchases were from outside of the province (99.49 per cent). Hawaii continues to be the primary source of imports, accounting for 75.21 per cent of the total, while other US States (Mostly California) were second with 14.80 per cent and other sources not specified was third, with 5.14 per cent.
- ▶ Average queen prices in 2019 ranged from \$38.51 to \$43.71, depending upon the source of purchase. The price per queen was lowest for Hawaii at \$38.51, followed by Saskatchewan at \$38.60. The price per queen from British Columbia was \$40.17 and \$41.63 for other United States.
- ▶ In 2019, the percentage deathloss for queens purchased in packages and nucs fell to 10.20 per cent down, from 13.97 per cent in 2018. For individual queens, the comparable percentage rose to 7.01 per cent, from 6.39 per cent in 2018.
- ▶ On June 30, 2019, there was more honey in inventory than a year earlier. Producers on average had 5,821 pounds of honey in stock, up 234.2 per cent from 1,742 pounds in 2018.

- ▶ Alberta continues to be the preferred location for the over-wintering of bees. In 2019, 99.86 per cent of over-wintering activity (indoor/outdoor) occurred in the province, with the rest carried out in British Columbia.
- ▶ “Outdoor” over-wintering remains the favored practice, accounting for 71.50 per cent of the total colonies over-wintered in 2019.
- ▶ In 2019, the average beekeeper reported 10.05 years of beekeeping experience. Years of experience in over-wintering “outdoor” was lower at 8.71 years, while for “indoor” it was 21.57 years.
- ▶ Producer prices received in 2018 were higher than expected for retail and wholesale. The average price realized for wholesale honey was \$162.29 per cwt, \$0.48 above the expected price of 161.81 per cwt. Similarly, the average realized price for retail honey was \$359.71 per cwt, \$3.88 higher than the expected price of \$355.83 per cwt. The 2019 expected prices for honey are \$165.23 per cwt wholesale, and \$354.53 per cwt retail.

**Table 1 - 2018 AND 2019 BEEKEEPING SURVEY RESULTS - ALBERTA\***  
**(GROUP AVERAGES)\*\***

DESCRIPTION	2018	2019	19/18 (%)
<b>PACKAGES/NUCS:</b>			
Average number of packages/nucs purchased in spring per beekeeper:	29.04	27.47	-5.4
Package queen/nuc deathloss (%):	13.97	10.20	-27.0
Percent of packages/nucs purchased:			
- Locally (Alberta) (%)	1.87	2.62	39.6
- Imported (%)	98.13	97.38	-0.8
Distribution of imported packages purchased:			
- New Zealand (%)	98.47	78.70	-20.1
- Australia (%)	0.94	19.48	1983.0
- Other (%)	0.59	1.82	207.6
Distribution of nucs purchased:			
- Alberta (%)	6.45	7.58	17.6
- British Columbia (%)	90.49	88.01	-2.7
- Other Canadian provinces (%)	3.06	4.41	44.2
Average price per package (2 lb equivalent) purchased from:			
- New Zealand (\$)	224.05	227.87	1.7
- Australia (\$)	223.33	-	n/a
- Other (\$)	222.00	219.60	-1.1
Average price per nuc purchased from:			
- Alberta (\$)	258.65	251.68	-2.7
- British Columbia (\$)	218.14	238.18	9.2
- Other Canadian provinces (\$)	257.53	249.81	-3.0
<b>INDIVIDUAL QUEENS:</b>			
Average number of queens purchased in spring per beekeeper:	178.35	150.63	-15.5
Purchased individual queen deathloss (%):	6.39	7.01	9.8
Percent of individual queens purchased:			
- Locally (Alberta) (%)	1.63	0.51	-69.0
- Imported (%)	98.37	99.49	1.1
Distribution of imported queens:			
- British Columbia (%)	1.15	1.28	11.5
- Saskatchewan (%)	0.38	1.88	393.8
- Other Canadian provinces (%)	0.02	-	n/a
- New Zealand (%)	0.12	1.53	-
- Australia (%)	4.64	0.16	-
- Hawaii (%)	70.72	75.21	6.4
- Other United States (%)	21.66	14.80	-31.7
- Chile (%)	0.01	-	n/a
- Other (%)	1.29	5.14	296.9
Average price per individual queen purchased from:			
- British Columbia (\$)	30.41	40.17	32.1
- Saskatchewan (\$)	40.74	38.60	-5.3
- Other Canadian provinces (\$)	41.67	-	n/a
- New Zealand (\$)	43.85	43.71	-0.3
- Australia (\$)	33.15	38.98	17.6
- Hawaii (\$)	35.19	38.51	9.4
- Other United States (\$)	35.89	41.63	16.0
- Chile (\$)	38.00	-	n/a
- Other (\$)	36.51	41.31	13.1

\* Based on paired sample    \*\* Weighted    n/a Not applicable

Note: Some totals may not add up due to rounding.

Source: Alberta Agriculture and Forestry, Economics and Competitiveness Branch, Statistics and Data Development Section

**Table 1 (Cont'd) - 2018 AND 2019 BEEKEEPING SURVEY RESULTS - ALBERTA\*  
(GROUP AVERAGES)\*\***

DESCRIPTION	2018	2019	19/18 (%)
<b>OTHER SELECTED STATISTICS:</b>			
Honey in inventory as of June 30th, per beekeeper (lbs.):	1,742.08	5,821.19	234.2
Experience in beekeeping (years):	9.26	10.05	8.5
Estimated number of colonies per active beekeeper:	191.89	217.90	13.6
<b>Over-wintering intentions for active colonies:</b>			
- indoors in Alberta (%)	26.48	28.36	7.1
- outdoors in Alberta (%)	73.52	71.50	-2.7
- in British Columbia (%)	-	0.14	n/a
<b>Experience in over-wintering (years):</b>			
- indoors	14.70	21.57	46.7
- outdoors	7.99	8.71	9.0
<b>Price received for 2018 honey crop:</b>			
- Retail (\$/cwt)	355.83***	359.71****	-----
- Wholesale (\$/cwt)	161.81***	162.29****	-----
<b>Price expected for 2019 honey crop:</b>			
- Retail (\$/cwt)	n/a	354.53	-----
- Wholesale (\$/cwt)	n/a	165.23	-----

\* Based on paired sample \*\* Weighted \*\*\* Expected price in 2018 \*\*\*\* Actual price received in 2018 n/a Not applicable

Note: Some totals may not add up due to rounding.

Source: Alberta Agriculture and Forestry, Economics and Competitiveness Branch, Statistics and Data Development Section



## Honey Production in Alberta

In 2019, there were 1,653 beekeepers in Alberta, up 5.2 per cent from 2018 (see Tables 3 and 4), and the highest since 1982. The growth in the number of beekeepers is largely due to an increase in the number of hobby beekeepers. Colony numbers rose 1.2 per cent to 314,800 colonies, and is the second highest on record. Preliminary statistics indicate that while Alberta accounts for a relatively small percentage (14.2 per cent) of the nation's total beekeepers, it accounted for 39.3 per cent of the honey producing colonies in Canada.

Alberta produced more honey in 2019 than was previously forecasted. Final estimates show total production at 31.4 million pounds, compared to the preliminary fall 2019 forecast of 25.1 million pounds. Even so, the final 2019 production was 18.5 per cent lower than the 2018 production of 38.6 million pounds.

Preliminary estimates by Statistics Canada peg total Canadian honey production in 2019 at 80.3 million pounds, 15.4 per cent lower than the 95 million pounds in 2018. While over the past five years Alberta has accounted for 40 per cent of the nation's honey production, in 2019 the province proportion dropped to 31.7 per cent due to a poor honey crop.

In 2019, honey production was down across all regions in Alberta with the exception of the South and Central regions (see Tables 2 and 4). The decrease in production was largely attributed to unpredictable weather in the early spring and honey flow months in high honey producing regions. At 12.1 million pounds, the North West region produced the highest amount of honey and accounted for 38.5 per cent of the total provincial production of 31.4 million pounds. The Peace region was second with 7.3 million pounds, (or 23.26 per cent), followed by the North East region with 4.3 million pounds (or 13.5 per cent). The Central region had the lowest production with 3.7 million pounds (or 11.9 per cent), followed by the South region at four million pounds (or 12.8 per cent). It cannot be over emphasized that honey production on a regional basis is directly tied to colony numbers and yield per colony, hence, explaining the variation among regions.

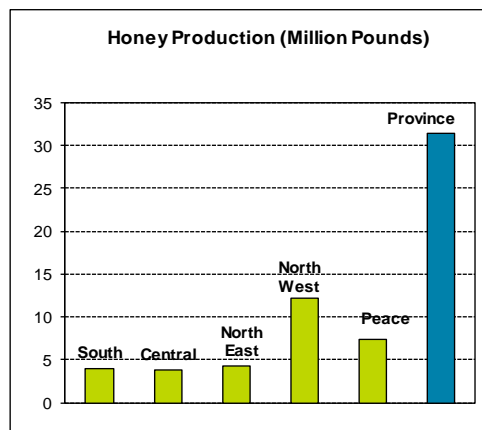
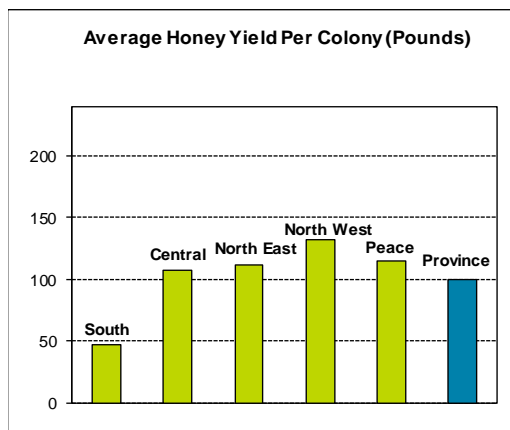
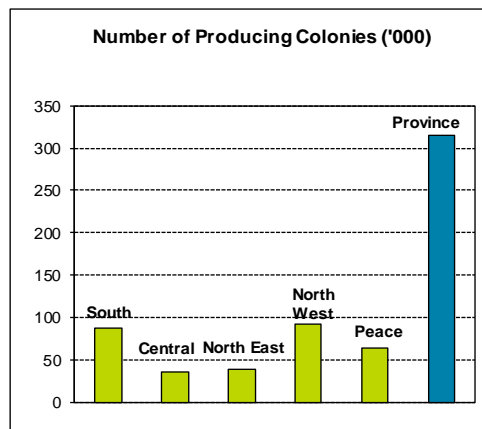
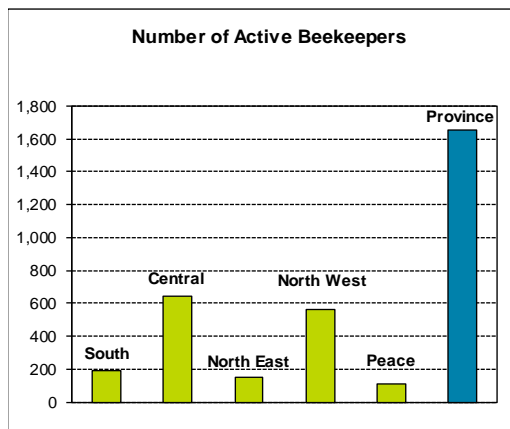
The Alberta Beekeepers' Survey also included questions regarding the pollination of crops. Based on the survey results (which did not include all beekeepers involved in pollination activities), 18,816 colonies were rented for pollination in 2019, with an average rental charge of \$158.17 per colony (Note: this rental charge is a blend of rental fees for blueberry and canola fields. Rental fees for blueberry fields are lower compared to those for canola fields). In fact, in 2019 rental fees for blueberry fields ranged from \$80.00 to \$125.00, while for canola fields fees ranged from \$170.00 to \$199.00.

**Table 2 - 2019 HONEY PRODUCTION ESTIMATE - ALBERTA**

Region	Number of Registered Beekeepers	Number of Producing Colonies	Honey Yield Per Colony		Total Honey Produced	
			lbs	kg	lbs	tonnes
South	193	86,553	46	21	4,015,556	1,821
Central	639	35,089	107	48	3,746,351	1,699
North East	146	38,050	112	51	4,249,967	1,928
North West	563	91,631	132	60	12,097,956	5,488
Peace	112	63,477	115	64	7,307,969	3,315
<b>Province</b>	<b>1,653</b>	<b>314,800</b>	<b>100</b>	<b>45</b>	<b>31,417,799</b>	<b>14,251</b>

Note: Yield and honey production rounded to the nearest pound, kilogram or tonne.  
Totals may not add due to rounding.

**2019 REGIONAL DISTRIBUTION OF ALBERTA'S ESTIMATED HONEY PRODUCTION  
(SELECTED HONEY STATISTICS)**



Source: Alberta Agriculture and Forestry, Economics and Competitiveness Branch, Statistics and Data Development Section



AF Regions (2019)

1. South
2. Central
3. North East
4. North West
5. Peace

### **South Region**

Cardston County  
Cypress County  
Foothills No. 31  
County of Forty Mile No. 8  
Lethbridge County  
Newell County  
Pincher Creek No. 9  
Ranchland No. 66  
Taber  
Vulcan County  
Warner County No. 5  
Wheatland County  
Willow Creek No. 26

### **Central Region**

Bighorn No. 8  
Calgary  
Clearwater County  
Kneehill County  
Lacombe County  
Mountain View County  
Paintearth County No. 18  
Ponoka County  
Red Deer County  
Rocky View County  
Special Area No. 2  
Special Area No. 3  
Special Area No. 4  
Starland County  
Stettler County No. 6

### **North East Region**

Beaver County  
Bonnyville No. 87  
Camrose County  
Flagstaff County  
Improvement District No.24  
Lac La Biche County  
Lamont County  
Minburn County No. 27  
Provost No. 52  
Smoky Lake County  
St. Paul County No. 19  
Two Hills County No. 21  
Vermilion River County  
Wainwright No. 61  
Wood Buffalo

### **North West Region**

Athabasca County  
Barrhead County No. 11  
Brazeau County  
Edmonton  
Improvement District No.12  
Lac Ste. Anne County  
Leduc County  
Lesser Slave River No. 124  
Parkland County  
Strathcona County  
Sturgeon County  
Thorhild County  
Westlock County  
Wetaskiwin County No. 10  
Woodlands County  
Yellowhead County

### **Peace Region**

Big Lakes County  
Birch Hills County  
Clear Hills County  
Fairview No. 136  
Grande Prairie County No. 1  
Greenview No. 16  
Mackenzie County  
Northern Lights County  
Northern Sunrise County  
Peace No. 135  
Saddle Hills County  
Smoky River No. 130  
Spirit River No. 133

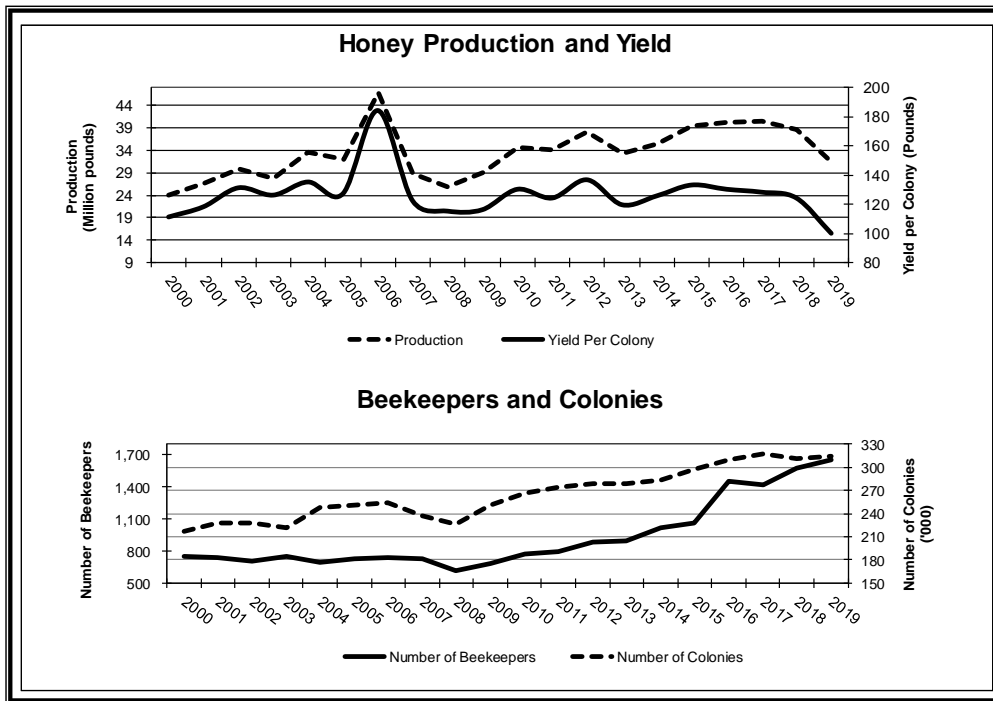
Note: Alberta Agriculture and Forestry regional boundaries no longer exist; however, these have been maintained to facilitate historical comparisons.



**Table 3 - ALBERTA HONEY STATISTICS, 2000-2019**

Year	No. of Beekeepers	No. of Colonies	Production ('000 pounds)	Yield per Colony (pounds)	No. of Colonies Per Beekeeper
2000	747	217,000	24,087	111	290
2001	739	227,000	26,786	118	307
2002	702	227,000	29,737	131	323
2003	754	221,000	27,846	126	293
2004	693	248,000	33,480	135	358
2005	728	251,000	31,877	127	345
2006	733	254,000	46,736	184	347
2007	726	237,000	28,914	122	326
2008	620	226,000	25,990	115	365
2009	683	251,000	29,116	116	367
2010	769	266,000	34,580	130	346
2011	798	274,600	34,050	124	344
2012	883	278,400	38,000	136	315
2013	890	278,100	33,200	119	312
2014	1,015	282,900	35,500	125	279
2015	1,064	296,880	39,461	133	279
2016	1,453	309,000	40,170	130	213
2017	1,420	317,000	40,576	128	223
2018	1,572	311,000	38,567	124	198
2019	1,653	314,800	31,418	100	190

**Alberta Honey Production, Yield, Beekeepers and Colonies, 2000-2019**



Source: Alberta Agriculture and Forestry, Economics and Competitiveness Branch, Statistics and Data Development Section

**Table 4 - HONEY PRODUCTION BY REGION IN ALBERTA (2012-2019)**

Region	2012	2013	2014	2015	2016	2017	2018	2019
<b>Number of Active Beekeepers</b>								
South	111	108	126	140	190	192	202	193
Central	266	292	341	363	516	519	589	639
North East	109	104	114	119	148	136	151	146
North West	294	287	322	338	482	471	524	563
Peace	103	99	112	104	117	102	106	112
<b>Province</b>	<b>883</b>	<b>890</b>	<b>1,015</b>	<b>1,064</b>	<b>1,453</b>	<b>1,420</b>	<b>1,572</b>	<b>1,653</b>
<b>Number of Producing Colonies</b>								
South	86,437	83,565	84,002	84,664	85,684	84,155	75,152	86,553
Central	25,571	27,182	24,400	28,537	32,683	31,567	33,799	35,089
North East	27,720	27,177	31,833	32,694	37,727	40,427	48,212	38,050
North West	72,022	74,708	78,109	83,076	81,032	87,739	84,424	91,631
Peace	66,651	65,468	64,556	67,910	71,875	73,112	69,414	63,477
<b>Province</b>	<b>278,400</b>	<b>278,100</b>	<b>282,900</b>	<b>296,880</b>	<b>309,000</b>	<b>317,000</b>	<b>311,000</b>	<b>314,800</b>
<b>Average Yield (pounds per colony)</b>								
South	78	116	69	73	40	64	64	46
Central	96	145	129	128	146	116	116	107
North East	139	135	115	138	157	116	116	112
North West	163	142	146	167	208	156	156	132
Peace	142	155	151	137	140	180	180	115
<b>Province</b>	<b>124</b>	<b>136</b>	<b>119</b>	<b>125</b>	<b>133</b>	<b>128</b>	<b>124</b>	<b>100</b>
<b>Honey Production ('000 pounds)</b>								
South	10,011	5,751	6,162	3,372	4,898	5,379	3,973	4,016
Central	3,709	3,519	3,122	4,163	3,988	3,666	3,259	3,746
North East	3,743	3,118	4,386	5,148	6,187	4,676	5,345	4,250
North West	10,201	10,916	13,014	17,265	13,914	13,672	13,011	12,098
Peace	10,335	9,895	8,816	9,513	11,183	13,184	12,979	7,308
<b>Province</b>	<b>38,000</b>	<b>33,200</b>	<b>35,500</b>	<b>39,461</b>	<b>40,170</b>	<b>40,576</b>	<b>38,567</b>	<b>31,418</b>

Note: Some totals may not add up due to rounding.

Source: Alberta Agriculture and Forestry, Economics and Competitiveness Branch, Statistics and Data Development Section