

Alberta 2016 Beekeepers' Survey Results



Acknowledgements

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This report is also available on the Internet at:

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/sdd12589](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/sdd12589)

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Alberta 2016 Beekeepers' Survey

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 2016 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 January 2017, survey questionnaires were mailed out to 1,225 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 2016.

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 2016 Beekeepers' survey. As of August 4, 2017, a total of 776 questionnaires were received, of which 652 were usable and formed the basis in developing the Alberta 2016 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 Agriculture and Forestry (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 2015/2016 Paired Beekeeping Surveys

The following survey highlights are based on the responses of 299 producers who participated in both the 2015 and 2016 Alberta Beekeepers' Surveys (See Table 1).

Paired Sample Highlights:

- ▶ In 2016, beekeepers purchased more packages/nucs than in 2015. Purchases increased 59.8 per cent, with the average beekeeper buying 61 packages/nucs, compared to 38 in 2015. Practically all of the packages/nucs purchased in 2016 were imported (98.68 per cent), with the remainder purchased locally.
- ▶ The distribution of imported packages was as follows: New Zealand (99.79 per cent), and Australia (0.21 per cent). Compared to 2015, imports of packages from New Zealand increased, while those from Australia fell substantially.
- ▶ In 2016, beekeepers sourced 94.94 per cent of their nuc purchases from British Columbia and 5.06 per cent from Alberta. The number of nucs purchased from British Columbia decreased compared to the previous year, while purchases in Alberta increased. The average nuc price in Alberta was \$227.01, while in British Columbia it was \$224.97.
- ▶ Individual queen purchases increased 17.8 per cent in 2016 with producers purchasing 207 queens on average, compared to 176 in 2015. Practically all of the queen purchases were from outside of the province (99.80 per cent). Hawaii continues to be the primary source of imports, accounting for 71.97 per cent of the total, while other US States were second with 24.88 per cent and British Columbia third, with 1.74 per cent.
- ▶ Average queen prices in 2016 ranged from \$30.85 to \$46.13, depending upon the source of purchase. The price per queen was lowest for other US States at \$30.85, followed by Hawaii at \$32.40 and Chile at \$33.50, respectively. New Zealand had the highest priced queens at \$46.13.
- ▶ In 2016, the percentage deathloss for queens purchased in packages and nucs fell to 7.09 per cent down slightly, from 9.84 per cent in 2015. For individual queens, the comparable percentage was up marginally by 9.94 per cent from 8.34 per cent in 2015.
- ▶ On June 30, 2016, there was more honey in inventory than a year earlier. Producers on average had 5,600 pounds in stock, up 13.3 per cent from 4,943 pounds in 2015.
- ▶ Alberta continues to be the preferred location for the over-wintering of bees. In 2016, 99.50 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 75.32 per cent of the total colonies over-wintered in 2016.
- ▶ In 2016, the average beekeeper reported 12.10 years of beekeeping experience. Years of experience in over-wintering "outdoor" was lower at 10.01 years, while for "indoor" it was 14.83 years.
- ▶ Producer prices received in 2015 for honey were higher than expected for retail and wholesale. The average price realized for wholesale honey was \$178.33 per cwt, or \$0.96 higher than the expected price of \$177.37 per cwt. The average realized price for retail honey was \$366.22 per cwt, \$12.47 above the expected price of \$353.75 per cwt. The 2016 expected prices for honey are \$124.43 per cwt wholesale, and \$389.05 per cwt retail.

Table 1 - 2015 AND 2016 BEEKEEPING SURVEY RESULTS - ALBERTA*
(GROUP AVERAGES)**

DESCRIPTION	2015	2016	16/'15 (%)
PACKAGES/NUCS:			
Average number of packages/nucs purchased in spring per beekeeper:	38.11	60.89	59.8
Package queen/nuc deathloss (%):	9.84	7.09	-27.9
Percent of packages/nucs purchased:			
- Locally (Alberta) (%)	1.41	1.32	-6.3
- Imported (%)	98.59	98.68	0.1
Distribution of imported packages purchased:			
- New Zealand (%)	88.79	99.79	12.4
- Australia (%)	10.42	0.21	-98.0
- Other (%)	0.79	-	n/a
Distribution of nucs purchased:			
- Alberta (%)	3.65	5.06	38.6
- British Columbia (%)	96.03	94.94	-1.1
- Other Canadian provinces (%)	0.32	-	n/a
Average price per package (2 lb equivalent) purchased from:			
- New Zealand (\$)	171.89	215.59	25.4
- Australia (\$)	191.15	224.56	17.5
- Other (\$)	181.81	-	n/a
Average price per nuc purchased from:			
- Alberta (\$)	213.97	227.01	6.1
- British Columbia (\$)	218.66	224.97	2.9
- Other Canadian provinces (\$)	200.00	-	n/a
INDIVIDUAL QUEENS:			
Average number of queens purchased in spring per beekeeper:	175.78	207.11	17.8
Purchased individual queen deathloss (%):	8.34	9.94	19.2
Percent of individual queens purchased:			
- Locally (Alberta) (%)	0.37	0.20	-47.0
- Imported (%)	99.63	99.80	0.2
Distribution of imported queens:			
- British Columbia (%)	0.01	1.74	-----
- Saskatchewan (\$)	0.32	0.07	-78.7
- Other Canadian provinces (%)	-	0.03	n/a
- New Zealand (%)	0.26	1.16	344.7
- Australia (%)	0.06	0.09	42.2
- Hawaii (%)	75.72	71.97	-5.0
- Other United States (%)	23.24	24.88	7.0
- Chile (%)	0.30	0.03	-91.0
- Other (%)	0.09	0.04	-52.3
Average price per individual queen purchased from:			
- British Columbia (\$)	26.67	39.89	49.6
- Saskatchewan (\$)	36.15	38.84	7.4
- Other Canadian provinces (\$)	-	40.00	n/a
- New Zealand (\$)	26.61	46.13	73.3
- Australia (\$)	34.44	37.83	9.8
- Hawaii (\$)	29.70	32.40	9.1
- Other United States (\$)	27.08	30.85	13.9
- Chile (\$)	27.62	33.50	21.3
- Other (\$)	26.15	37.50	43.4

* 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) - 2015 AND 2016 BEEKEEPING SURVEY RESULTS - ALBERTA*
(GROUP AVERAGES)**

DESCRIPTION	2015	2016	16/'15 (%)
OTHER SELECTED STATISTICS:			
Honey in inventory as of June 30th, per beekeeper (lbs.):	4,942.64	5,599.59	13.3
Experience in beekeeping (years):	12.90	12.10	-6.2
Estimated number of colonies per active beekeeper:	268.67	347.99	29.5
Over-wintering intentions for active colonies:			
- indoors in Alberta (%)	24.22	24.19	-0.2
- outdoors in Alberta (%)	75.35	75.32	0.0
- in British Columbia (%)	0.43	0.50	16.0
Experience in over-wintering (years):			
- indoors	16.74	14.83	-11.4
- outdoors	11.06	10.01	-9.5
Price received for 2015 honey crop:			
- Retail (\$/cwt)	353.75***	366.22****	-----
- Wholesale (\$/cwt)	177.37***	178.33****	-----
Price expected for 2016 honey crop:			
- Retail (\$/cwt)	n/a	389.05	-----
- Wholesale (\$/cwt)	n/a	124.43	-----

* Based on paired sample ** Weighted *** Expected price in 2015 **** Actual price received in 2015 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 2016, there were 1,453 beekeepers in Alberta, up 36.6 per cent from 2015 (see tables 3 and 4), and the highest number since 1987 (1,480 beekeepers). The rise in the number of beekeepers is largely due to an increase in the number of hobby beekeepers. Colony numbers rose for the third consecutive year setting a new record of 309,000 colonies and up 4.1 per cent from the 2015. 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 40.7 per cent of the honey producing colonies in Canada.

Alberta produced more honey in 2016 than was previously forecasted. Final estimates show total production at 40.2 million pounds, compared to the preliminary fall 2016 forecast of 38.1 million pounds. Even so, the final 2016 production was 1.8 per cent higher than the 2015 production of 39.5 million pounds.

Preliminary estimates by Statistics Canada peg total Canadian honey production in 2016 at 92.2 million pounds, 0.2 per cent higher than the 92.0 million pounds in 2015. Based on the preliminary estimates, Alberta accounted for 41.4 per cent of the nation's honey production in 2016.

In 2016, honey production was up across all regions in Alberta with the exception of the Central and North West regions (see tables 2 and 4). The increase in most regions was attributed to a rise in the number of honey bee colonies, and significantly higher yields. At 13.9 million pounds, the North West region produced the highest amount of honey and accounted for 34.6 per cent of the total provincial production of 40.1 million pounds. The Peace region was second with 11.2 million pounds, (or 27.8 per cent), followed by the North East region with 6.2 million pounds (or 15.4 per cent). The Central region had the lowest production with 4.0 million pounds (or 9.9 per cent), followed by the South region at 4.9 million pounds (or 12.2 per cent). It cannot be over emphasized that the estimated 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), 23,378 colonies were rented for pollination in 2016, with an average rental charge of \$173.89 per colony.

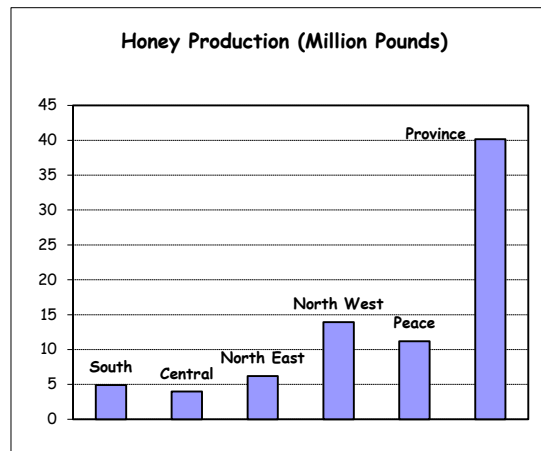
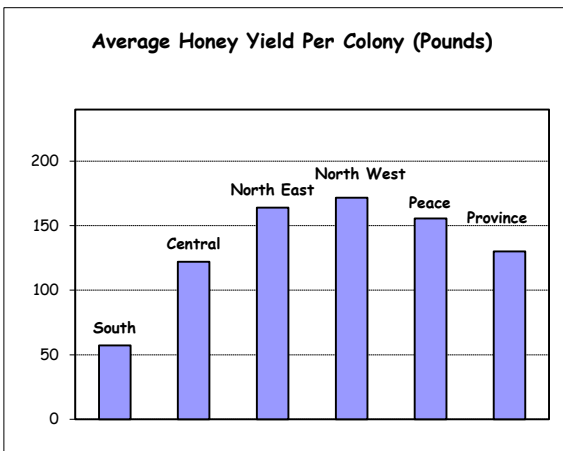
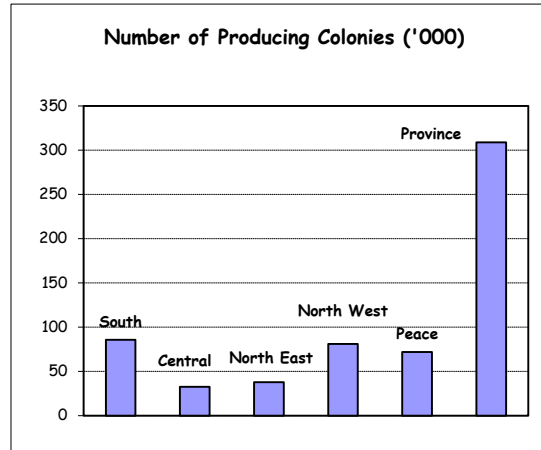
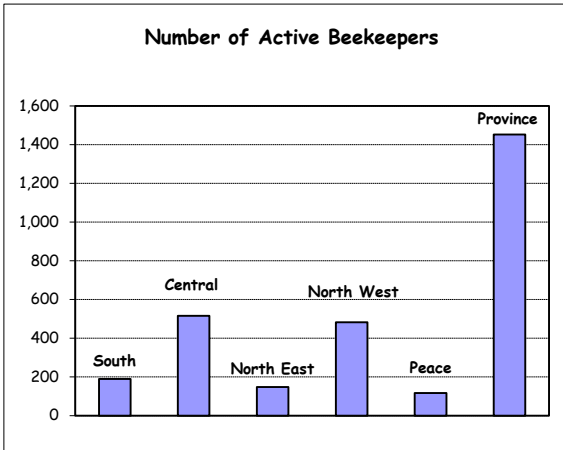
Table 2 - 2016 HONEY PRODUCTION ESTIMATE - ALBERTA

Region	Number of Registered Beekeepers	Number of Producing Colonies	Honey Yield Per Colony		Total Honey Produced	
			lbs	kg	lbs	tonnes
South	190	85,684	57	26	4,897,945	2,222
Central	516	32,683	122	55	3,987,659	1,809
North East	148	37,727	164	74	6,187,203	2,806
North West	482	81,032	172	78	13,914,114	6,311
Peace	117	71,875	156	64	11,183,080	5,073
Province	1,453	309,000	130	59	40,170,000	18,221

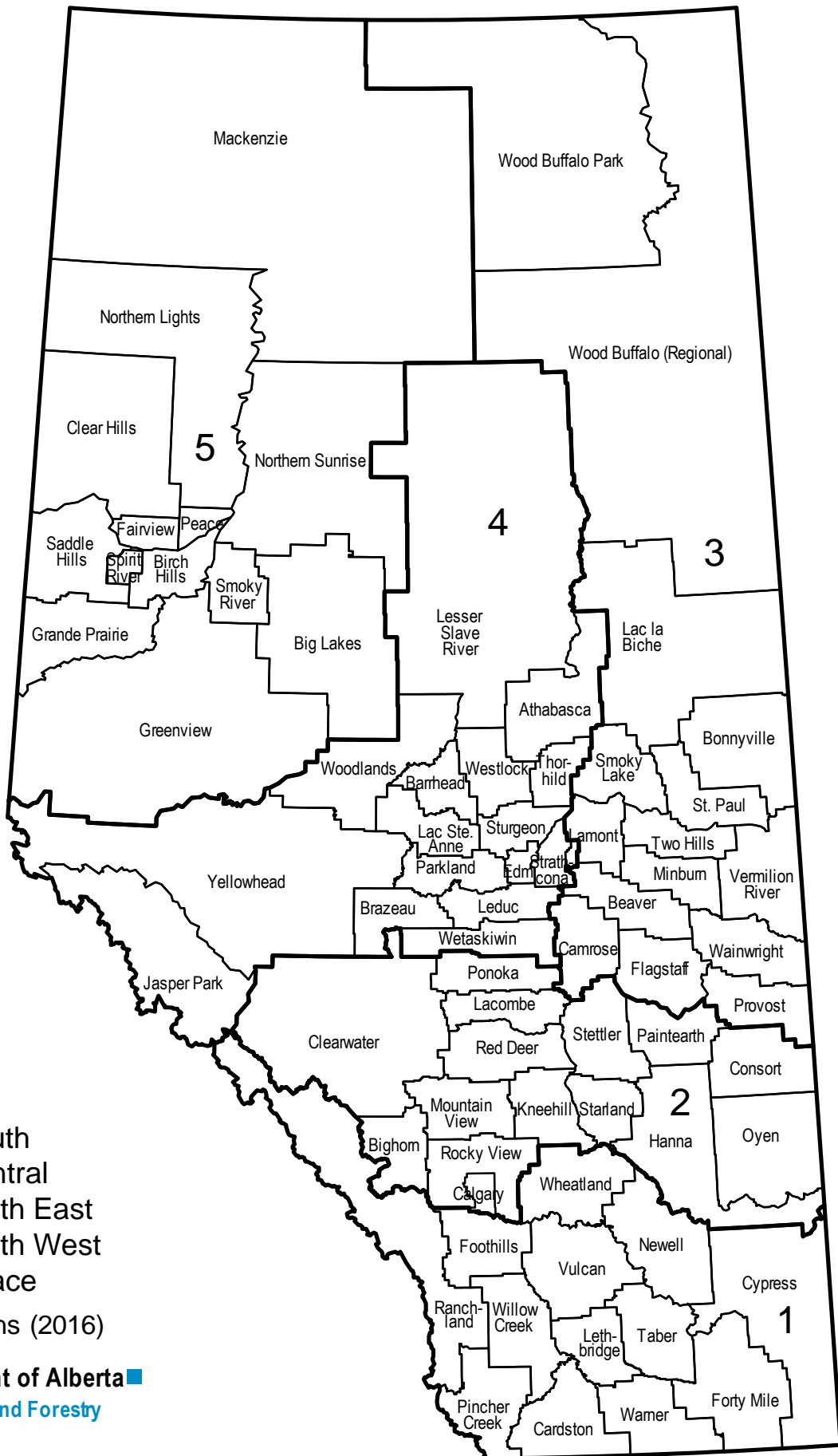
Note: Yield and honey production rounded to the nearest pound, kilogram or tonne.

Totals may not add due to rounding.

**2016 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



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

AF Regions (2016)

Government of Alberta
 Agriculture and Forestry

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

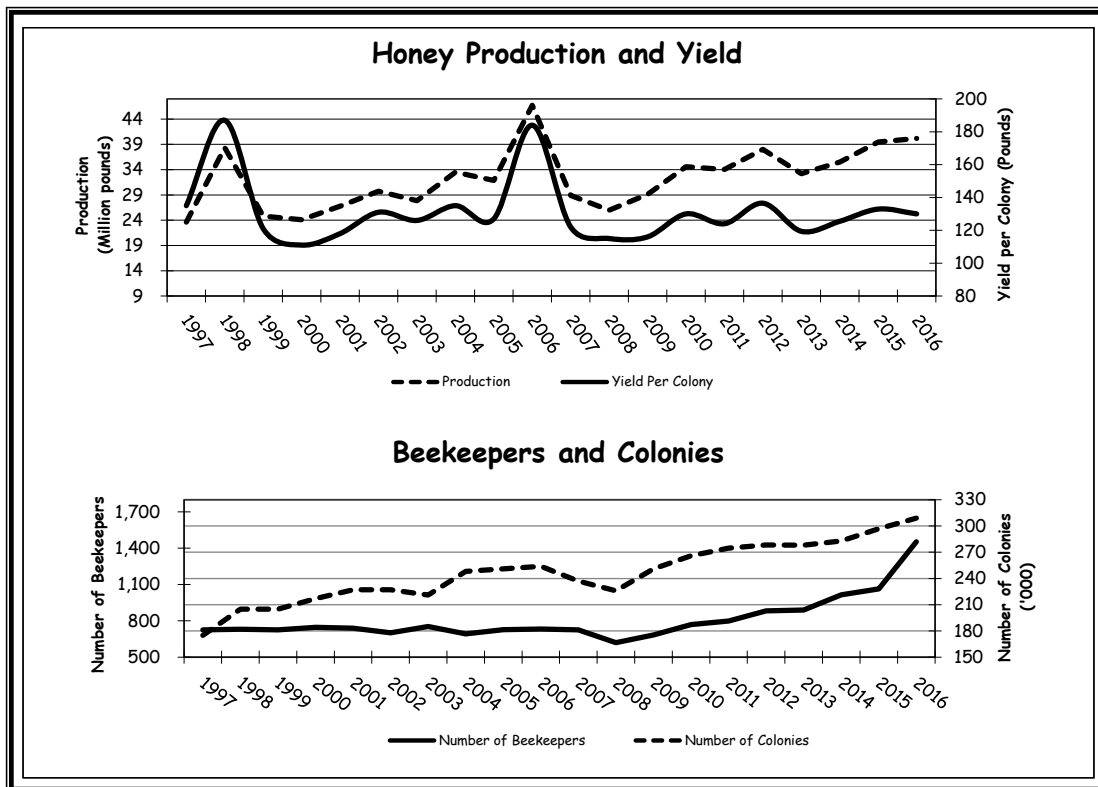
Big Lakes County
Birch Hills County
Clear Hills County
Fairview No. 136
Grande Prairie County No. 1
Greenview No. 16
Mackenzie County
Northern Lights County
Northern Sunrise County
Peace No. 135
Saddle Hills County
Smoky River No. 130
Spirit River No. 133

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

Table 3 - ALBERTA HONEY STATISTICS, 1997-2016

Year	No. of Beekeepers	No. of Colonies	Production ('000 pounds)	Yield per Colony (pounds)	No. of Colonies Per Beekeeper
1997	725	175,000	23,625	135	241
1998	730	205,000	38,335	187	281
1999	725	205,000	24,805	121	283
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

Alberta Honey Production, Yield, Beekeepers and Colonies, 1997-2016



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

Table 4 - HONEY PRODUCTION BY REGION IN ALBERTA (2009-2016)

Region	2009	2010	2011	2012	2013	2014	2015	2016
Number of Active Beekeepers								
South	94	94	101	111	108	126	140	190
Central	147	176	216	266	292	341	363	516
North East	96	118	107	109	104	114	119	148
North West	244	274	274	294	287	322	338	482
Peace	102	107	100	103	99	112	104	117
Province	683	769	798	883	890	1,015	1,064	1,453
Number of Producing Colonies								
South	66,934	73,039	83,948	86,437	83,565	84,002	84,664	85,684
Central	19,611	20,742	22,501	25,571	27,182	24,400	28,537	32,683
North East	26,689	27,682	26,111	27,720	27,177	31,833	32,694	37,727
North West	74,209	73,183	75,757	72,022	74,708	78,109	83,076	81,032
Peace	63,558	71,354	66,283	66,651	65,468	64,556	67,910	71,875
Province	251,000	266,000	274,600	278,400	278,100	282,900	296,880	309,000
Average Yield (pounds per colony)								
South	64	92	78	116	69	73	40	57
Central	144	130	96	145	129	128	146	122
North East	154	156	139	135	115	138	157	164
North West	122	154	163	142	146	167	208	172
Peace	140	134	142	155	151	137	140	156
Province	116	130	124	136	119	125	133	130
Honey Production ('000 pounds)								
South	4,250	6,745	6,557	10,011	5,751	6,162	3,372	4,898
Central	2,829	2,704	2,150	3,709	3,519	3,122	4,163	3,988
North East	4,106	4,323	3,618	3,743	3,118	4,386	5,148	6,187
North West	9,043	11,243	12,320	10,201	10,916	13,014	17,265	13,914
Peace	8,887	9,565	9,406	10,335	9,895	8,816	9,513	11,183
Province	29,116	34,580	34,050	38,000	33,200	35,500	39,461	40,170

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

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