

Alberta 2017 Beekeepers' Survey Results



Alberta Agriculture and Forestry, Government of Alberta

November 2018

Alberta 2017 Beekeepers' Survey Results

ISSN 1701-3283 (Print)

ISSN 1929-7033 (Online)

John Paul Emunu

Livestock Statistician

Statistics and Data Development Section

Alberta Agriculture and Forestry

#300, 7000-113 Street, Edmonton, AB, T6H 5T6

780-427-4243

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)

The contents of this document may not be used or reproduced without properly accrediting the Statistics and Data Development Section, Economics and Competitiveness Branch, Agriculture and Forestry.

Table of Contents

Table of Contents.....	3
Purpose of Survey.....	4
Methodology.....	4
Highlights of the Alberta 2016/2017 Paired Beekeeping Surveys.....	5
Honey Production in Alberta.....	9

List of Tables

Table 1 - 2016 and 2017 Beekeeping Survey Results - Alberta	7
Table 2 - 2017 Honey Production Estimate - Alberta	10
Table 3 - Alberta Honey Statistics, 1998-2017.....	13
Table 4 - Honey Production by Region in Alberta, 2010-2017	14

Region Classification

Map of AF Regions in Alberta.....	11
Alberta Municipalities Classified by Region.....	12

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 2017 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 February 2018, survey questionnaires were mailed out to 1,400 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 2017.

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 2017 Beekeepers' survey. As of October 5, 2018, a total of 781 questionnaires were received, of which 760 were usable and formed the basis in developing the Alberta 2017 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 2016/2017 Paired Beekeeping Surveys

The following survey highlights are based on the responses of 381 producers who participated in both the 2016 and 2017 Alberta Beekeepers' Surveys (See Table 1).

Paired Sample Highlights:

- ▶ In 2017, beekeepers purchased less packages/nucs than in 2016. Purchases decreased 37.2 per cent, with the average beekeeper buying 24 packages/nucs, compared to 38 in 2016. The majority of packages/nucs purchased in 2017 were imported (95.97 per cent), with the remainder purchased locally (4.03 per cent).
- ▶ The distribution of imported packages was as follows: New Zealand (98.54 per cent), other not specified (1.02 per cent), and Australia (0.44 per cent). Compared to 2016, imports of packages from New Zealand decreased, while those from other sources not specified and Australia increased.
- ▶ In 2017, beekeepers sourced 72.05 per cent of their nuc purchases from British Columbia, 24.75 per cent from Alberta, and the remaining 3.20 per cent from other Canadian provinces. 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 \$230.17, while in British Columbia it was \$224.43.
- ▶ Individual queen purchases decreased 21.5 per cent in 2017, with producers purchasing 162 queens on average, compared to 207 in 2016. Practically all of the queen purchases were from outside of the province (99.57 per cent). Hawaii continues to be the primary source of imports, accounting for 60.98 per cent of the total, while other US States were second with 32.45 per cent and New Zealand was third, with 4.05 per cent.
- ▶ Average queen prices in 2017 ranged from \$28.87 to \$50.00, depending upon the source of purchase. The price per queen was lowest for Chile at \$28.87, followed by British Columbia at \$31.90 and Australia at \$34.69, respectively. The price per queen for Hawaii was \$35.47 and \$36.88 for other United States.
- ▶ In 2017, the percentage deathloss for queens purchased in packages and nucs rose to 11.23 per cent up, from 9.65 per cent in 2016. For individual queens, the comparable percentage was down to 4.44 per cent, from 8.07 per cent in 2016.
- ▶ On June 30, 2017, there was less honey in inventory than a year earlier. Producers on average had 2,079 pounds in stock, down 60.2 per cent from 5,217 pounds in 2016.

- ▶ Alberta continues to be the preferred location for the over-wintering of bees. In 2017, 94.53 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 78.87 per cent of the total colonies over-wintered in 2017.
- ▶ In 2017, the average beekeeper reported 10.25 years of beekeeping experience. Years of experience in over-wintering “outdoor” was lower at 8.60 years, while for “indoor” it was 15.00 years.
- ▶ Producer prices received in 2016 were lower than expected for retail and wholesale. The average price realized for wholesale honey was \$124.41 per cwt, practically identical to the expected price of \$124.43 per cwt. However, the average realized price for retail honey was \$354.40 per cwt, \$34.65 lower than the expected price of \$389.05 per cwt. The 2017 expected prices for honey are \$157.97 per cwt wholesale, and \$358.58 per cwt retail.

Table 1 - 2016 AND 2017 BEEKEEPING SURVEY RESULTS - ALBERTA*
(GROUP AVERAGES)**

DESCRIPTION	2016	2017	17/'16 (%)
PACKAGES/NUCS:			
Average number of packages/nucs purchased in spring per beekeeper:	38.25	24.00	-37.2
Package queen/nuc deathloss (%):	9.65	11.23	16.4
Percent of packages/nucs purchased:			
- Locally (Alberta) (%)	3.14	4.03	28.2
- Imported (%)	96.86	95.97	-0.9
Distribution of imported packages purchased:			
- New Zealand (%)	99.70	98.54	-1.2
- Australia (%)	0.25	0.44	75.6
- Other (%)	0.04	1.02	n/a
Distribution of nucs purchased:			
- Alberta (%)	14.46	24.75	71.1
- British Columbia (%)	85.40	72.05	-15.6
- Other Canadian provinces (%)	0.14	3.20	n/a
Average price per package (2 lb equivalent) purchased from:			
- New Zealand (\$)	215.60	214.24	-0.6
- Australia (\$)	216.20	224.56	3.9
- Other (\$)	217.50	220.00	1.1
Average price per nuc purchased from:			
- Alberta (\$)	229.40	230.17	0.3
- British Columbia (\$)	225.13	224.43	-0.3
- Other Canadian provinces (\$)	265.00	242.63	-8.4
INDIVIDUAL QUEENS:			
Average number of queens purchased in spring per beekeeper:	206.84	162.34	-21.5
Purchased individual queen deathloss (%):	8.07	4.44	-44.9
Percent of individual queens purchased:			
- Locally (Alberta) (%)	0.92	0.43	-53.0
- Imported (%)	99.08	99.57	0.5
Distribution of imported queens:			
- British Columbia (%)	1.80	1.58	-12.0
- Saskatchewan (\$)	0.26	0.22	-14.9
- Other Canadian provinces (%)	0.03	0.03	n/a
- New Zealand (%)	2.22	4.05	82.1
- Australia (%)	0.13	0.32	146.3
- Hawaii (%)	69.48	60.98	-12.2
- Other United States (%)	26.05	32.45	24.6
- Chile (%)	-	0.07	n/a
- Other (%)	0.04	0.30	735.9
Average price per individual queen purchased from:			
- British Columbia (\$)	39.83	31.90	-19.9
- Saskatchewan (\$)	32.86	35.99	9.5
- Other Canadian provinces (\$)	40.00	50.00	25.0
- New Zealand (\$)	41.77	39.82	-4.7
- Australia (\$)	38.43	34.69	-9.7
- Hawaii (\$)	32.55	35.47	9.0
- Other United States (\$)	30.62	36.88	20.5
- Chile (\$)	-	28.87	n/a
- Other (\$)	36.92	38.28	3.7

* 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) - 2016 AND 2017 BEEKEEPING SURVEY RESULTS - ALBERTA*
(GROUP AVERAGES)****

DESCRIPTION	2016	2017	17/'16 (%)
OTHER SELECTED STATISTICS:			
Honey in inventory as of June 30th, per beekeeper (lbs.):	5,216.74	2,078.74	-60.2
Experience in beekeeping (years):	9.18	10.25	11.7
Estimated number of colonies per active beekeeper:	285.41	228.23	-20.0
Over-wintering intentions for active colonies:			
- indoors in Alberta (%)	22.18	15.66	-29.4
- outdoors in Alberta (%)	71.43	78.87	10.4
- in British Columbia (%)	6.39	5.47	-14.4
Experience in over-wintering (years):			
- indoors	14.71	15.00	2.0
- outdoors	8.07	8.60	6.5
Price received for 2016 honey crop:			
- Retail (\$/cwt)	389.05***	354.40****	-----
- Wholesale (\$/cwt)	124.43***	124.41****	-----
Price expected for 2017 honey crop:			
- Retail (\$/cwt)	n/a	358.58	-----
- Wholesale (\$/cwt)	n/a	157.97	-----

* Based on paired sample ** Weighted *** Expected price in 2016 **** Actual price received in 2016 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 2017, there were 1,420 beekeepers in Alberta, down 2.3 per cent from 2016 (see tables 3 and 4), and the second highest number since 1987 (1,480 beekeepers). The growth in the number of beekeepers is largely due to an increase in the number of hobby beekeepers. Colony numbers rose for the fourth consecutive year setting a new record of 317,000 colonies, up 2.6 per cent from the 2016. Preliminary statistics indicate that while Alberta accounts for a relatively small percentage (12.9 per cent) of the nation's total beekeepers, it accounted for 43.2 per cent of the honey producing colonies in Canada.

Alberta produced more honey in 2017 than was previously forecasted. Final estimates show total production at 40.6 million pounds, compared to the preliminary fall 2017 forecast of 39.8 million pounds. Even so, the final 2017 production was 1.0 per cent higher than the 2016 production of 40.2 million pounds.

Preliminary estimates by Statistics Canada peg total Canadian honey production in 2017 at 92.1 million pounds, 2.6 per cent lower than the 94.6 million pounds in 2016. Based on the preliminary estimates, Alberta accounted for 43.2 per cent of the nation's honey production in 2017.

In 2017, honey production was down across all regions in Alberta with the exception of the Peace and South regions (see tables 2 and 4). The decrease in production in most regions was attributed to several factors including poor queens, the presence of varroa mites, starvation, and weak colonies in the fall of 2016, coupled with bad weather in the early spring of 2017. At 13.7 million pounds, the North West region produced the highest amount of honey and accounted for 33.7 per cent of the total provincial production of 40.6 million pounds. The Peace region was second with 13.2 million pounds, (or 32.5 per cent), followed by the South region with 5.4 million pounds (or 13.3 per cent). The Central region had the lowest production with 3.7 million pounds (or 9.0 per cent), followed by the North East region at 4.7 million pounds (or 11.5 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.

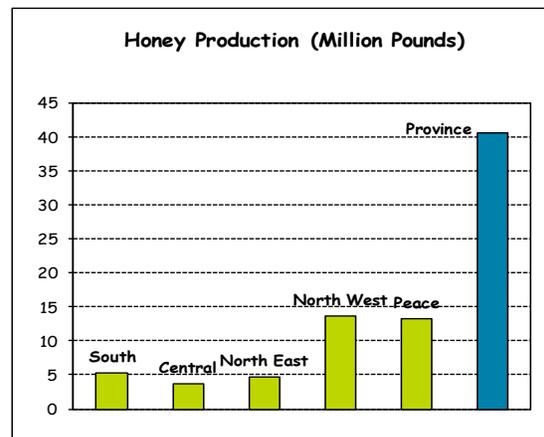
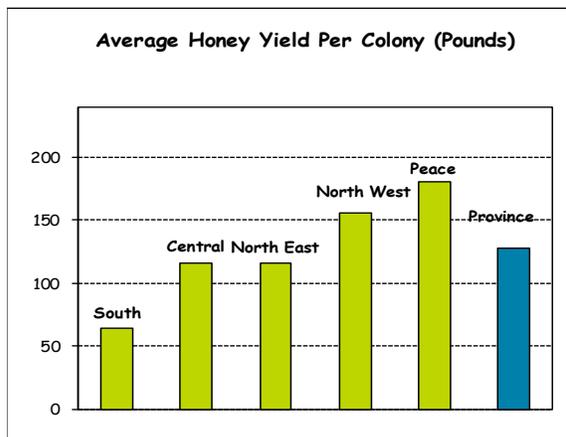
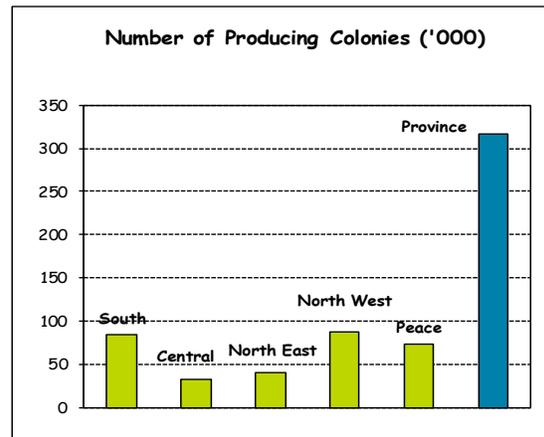
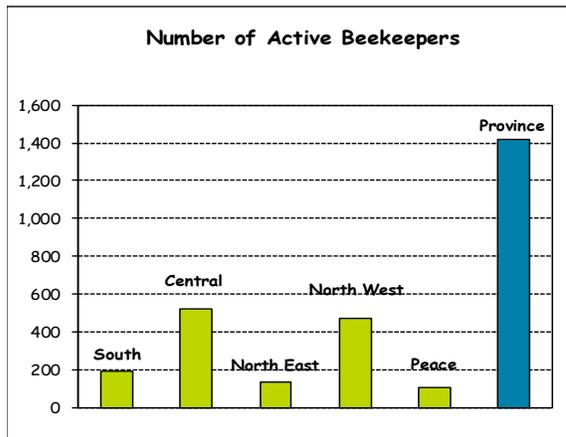
The Alberta Beekeepers' Survey also included questions regarding the pollination of crops. Based on the survey results (which did not include all beekeepers involved in pollination activities), 24,288 colonies were rented for pollination in 2017, with an average rental charge of \$160.25 per colony (Note: 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).

Table 2 - 2017 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	192	84,155	64	29	5,378,895	2,440
Central	519	31,567	116	53	3,665,699	1,663
North East	136	40,427	116	52	4,676,057	2,121
North West	471	87,739	156	71	13,671,543	6,201
Peace	102	73,112	180	64	13,183,805	5,980
Province	1,420	317,000	128	58	40,576,000	18,405

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

**2017 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

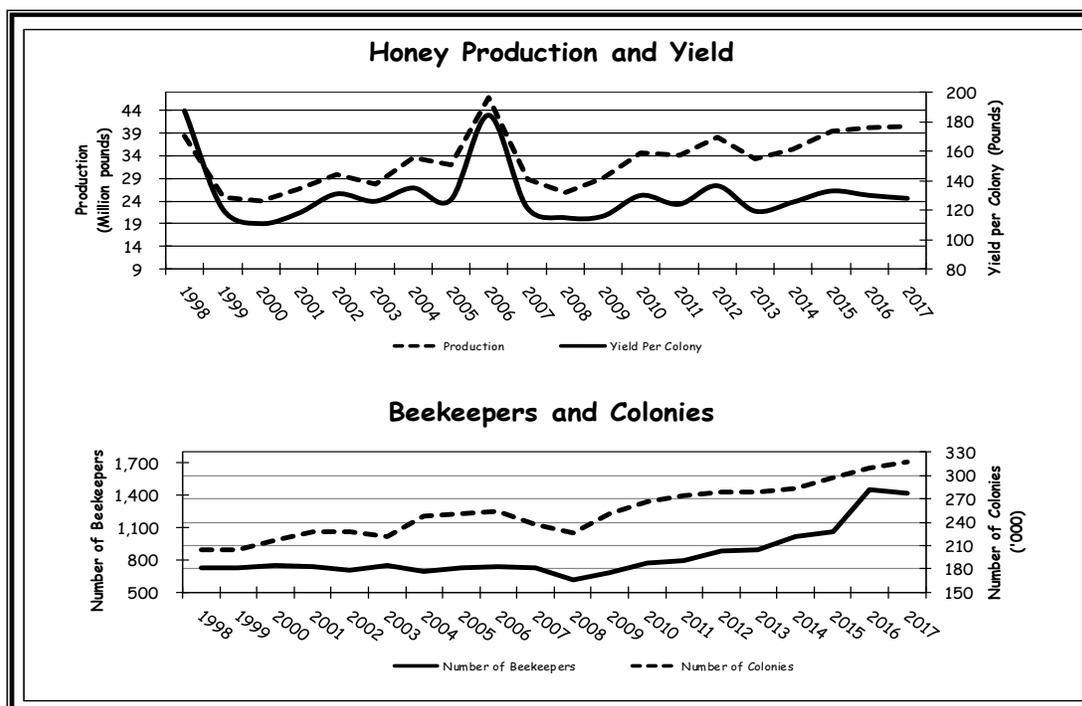
Note: Alberta Agriculture and Forestry regional boundaries no longer exist; however, these have been maintained to facilitate historical comparisons.



Table 3 - ALBERTA HONEY STATISTICS, 1998-2017

Year	No. of Beekeepers	No. of Colonies	Production ('000 pounds)	Yield per Colony (pounds)	No. of Colonies Per Beekeeper
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
2017	1,420	317,000	40,576	128	223

Alberta Honey Production, Yield, Beekeepers and Colonies, 1998-2017



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

Table 4 - HONEY PRODUCTION BY REGION IN ALBERTA (2010-2017)

Region	2010	2011	2012	2013	2014	2015	2016	2017
Number of Active Beekeepers								
South	94	101	111	108	126	140	190	192
Central	176	216	266	292	341	363	516	519
North East	118	107	109	104	114	119	148	136
North West	274	274	294	287	322	338	482	471
Peace	107	100	103	99	112	104	117	102
Province	769	798	883	890	1,015	1,064	1,453	1,420
Number of Producing Colonies								
South	73,039	83,948	86,437	83,565	84,002	84,664	85,684	84,155
Central	20,742	22,501	25,571	27,182	24,400	28,537	32,683	31,567
North East	27,682	26,111	27,720	27,177	31,833	32,694	37,727	40,427
North West	73,183	75,757	72,022	74,708	78,109	83,076	81,032	87,739
Peace	71,354	66,283	66,651	65,468	64,556	67,910	71,875	73,112
Province	266,000	274,600	278,400	278,100	282,900	296,880	309,000	317,000
Average Yield (pounds per colony)								
South	64	92	78	116	69	73	40	64
Central	144	130	96	145	129	128	146	116
North East	154	156	139	135	115	138	157	116
North West	122	154	163	142	146	167	208	156
Peace	140	134	142	155	151	137	140	180
Province	116	130	124	136	119	125	133	128
Honey Production ('000 pounds)								
South	6,745	6,557	10,011	5,751	6,162	3,372	4,898	5,379
Central	2,704	2,150	3,709	3,519	3,122	4,163	3,988	3,666
North East	4,323	3,618	3,743	3,118	4,386	5,148	6,187	4,676
North West	11,243	12,320	10,201	10,916	13,014	17,265	13,914	13,672
Peace	9,565	9,406	10,335	9,895	8,816	9,513	11,183	13,184
Province	34,580	34,050	38,000	33,200	35,500	39,461	40,170	40,576

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

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