

Alberta 2009 Beekeepers' Survey Results



Acknowledgements

The Statistics and Data Development Branch of Alberta Agriculture and Rural Development (ARD) gratefully acknowledge and thank the many producers who participated in the Alberta 2009 Beekeepers' survey. Without their participation, this report would not have been possible.

As well, the Branch wishes to acknowledge several staff members of ARD, including Reynold Jaipaul, Gail Atkinson, Guangzhi Liu, Nabi Chaudhary, John Paul Emunu, Roy Larsen, Melodie Mynzak, and Medhat Nasr for their contributions to this report.

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)

To obtain additional copies, please contact:

Alberta Agriculture and Rural Development
Economics and Competitiveness Division
Statistics and Data Development Branch
#302, 7000-113 Street
Edmonton, Alberta
T6H 5T6
Phone: 780-427-4011

Table of Contents

	Page
Acknowledgements	i
Table of Contents	ii

Alberta 2009 Beekeepers' Survey Results

Purpose of Survey	1
Methodology	1
Highlights of the Alberta 2008/2009 Beekeeping Surveys	3
Honey Production in Alberta.....	7

List of Tables

Table 1 - 2008 and 2009 Beekeeping Survey Results	5
Table 2 - 2009 Honey Production Estimate - Alberta.....	8
Table 3 - Alberta Honey Statistics, 1990-2009	11
Table 4 - Honey Production by Region in Alberta, 2002-2009	12

Region Classification

Map of ARD Regions in Alberta	9
Alberta Municipalities Classified by Region.....	10

Alberta 2009 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) Branch conducts a survey of beekeepers in the province. The survey is used to assist in the development of provincial and regional estimates for selected honey variables such as colony numbers, yield, production and prices. The survey information along with information from other sources, are then used to estimate the provincial and regional honey statistics. Furthermore, these estimates, along with the survey results, are shared with survey participants, industry and other stakeholders.

This report focuses on the results of the Alberta 2009 Beekeepers' Survey and the related estimates generated.

Methodology

The Alberta Beekeepers' Survey, which is provincial in scope, collects data from producers through a non-probability survey. In January 2010, survey questionnaires were mailed out to 411 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 2009.

Participants were made aware that participation 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 Branch is governed and operates. In return for their participation, respondents who were interested in the survey results were mailed the Branch's publication highlighting the results of the 2009 Beekeepers' survey. As of June 18th, 2010, a total of 250 questionnaires were received of which 239 were usable and formed the basis for the Alberta 2009 honey production estimates.

Survey responses received were reviewed for data completeness, validated and entered into an electronic database. The data was then subjected to some 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 and Alberta Agriculture and Rural Development (ARD) subject area/provincial specialists, were used to develop provincial and regional estimates on the number of producers, colonies, yield and production. The provincial data are collected by the Alberta Provincial Apiculturist based on the annual registration of Alberta beekeepers. This annual registration is required by Alberta Bee Act.

It should be noted that the derived estimates are 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.

For further information regarding the survey or survey results, please do not hesitate to contact:

John Paul Emunu
Livestock Statistician
Alberta Agriculture and Rural Development
Economics and Competitiveness Division
Statistics and Data Development Branch
Phone: 780-427-4243; Fax 780-427-5220
E-mail: john.paul.emunu@gov.ab.ca

Highlights of the Alberta 2008/2009 Paired Beekeeping Surveys

The following survey highlights are based on the responses of 119 producers in Alberta who participated in both the 2008 and 2009 Alberta Beekeepers' Surveys. For more detailed information, please refer to Table 1.

Paired Sample Highlights:

- ▶ In 2009, beekeepers purchased less queen packages/nucs than in 2008. Purchases decreased approximately 20 per cent, with the average beekeeper buying 124 packages/nucs, compared to 155 in 2008. The majority of packages/nucs purchased were imported (99 per cent), with the remainder purchased locally.
- ▶ In 2009, the distribution of imported packages was as follows: New Zealand (84 per cent), and Australia (16 per cent). Compared to 2008, imports of packages from New Zealand decreased, while imports from Australia increased.
- ▶ Beekeepers sourced 62 per cent of their nuc purchases from British Columbia, 38 per cent from other Canadian provinces and under one per cent from Alberta. In 2009, imports of nucs from British Columbia and Alberta were down compared to the previous year, while those from other Canadian provinces were up. The 2009 average nuc price in British Columbia was \$110.68, while other prices included \$125.71 for Alberta nucs and \$140.53 for nucs from other Canadian provinces.
- ▶ Individual queen purchases increased four per cent in 2009, with producers purchasing 199 queens on average, compared to 191 in 2008. Hawaii continues to be the primary source of imports, accounting for 89 per cent of the total, while other US States were second with five per cent and Chile third, with three per cent.
- ▶ Average queen prices in 2009 ranged from \$19.77 to \$30.00, depending upon the source of purchase. Prices were lowest for Australian queens at \$19.77 per queen, followed by Chile at \$20.07, then Hawaii at \$20.24 per queen. Prices were the highest for the "other" category at \$30.00 per queen.
- ▶ In 2009, the percentage deathloss for queens purchased in packages and nucs increased almost five fold, to 24 per cent, compared to four per cent in 2008. Average deathloss of individual queens increased to 25 per cent, from 18 per cent in 2008.
- ▶ On June 30, 2009, there was less honey in inventory than a year earlier. Producers on average had 5,929 pounds in stock, down 30 per cent from 8,438 pounds in 2008.
- ▶ Survey respondents indicated that Alberta was the preferred location for producers to over-winter their bees with 98 per cent of the over-wintering activity done in the

province in 2009. Approximately two per cent of over-wintering was done in British Columbia.

- ▶ "Outdoor" over-wintering is still the preferred practice, accounting for 70 per cent of total colonies over-wintered in 2009.
- ▶ The average beekeeper had about 18 years of beekeeping experience. Years of experience in over-wintering "outdoor" and "indoor" colonies were lower, approximately 15 years and 13 years, respectively.
- ▶ Producer prices received in 2008 for honey were higher than expected for retail and lower than expected for wholesale. The average price realized for wholesale honey was \$150.31 per cwt, \$1.28 lower than the expected price of \$151.59 per cwt. The realized price for retail honey was \$275.72 per cwt, \$6.01 higher than the expected price of \$269.71 per cwt. The 2009 expected prices for honey are \$156.34 per cwt wholesale, and \$259.84 per cwt retail.

Table 1 - 2008 AND 2009 BEEKEEPING SURVEY RESULTS - ALBERTA*
(GROUP AVERAGES)**

DESCRIPTION	2008	2009	09/08 (%)
PACKAGES/NUCS:			
Average number of packages/nucs purchased in spring per beekeeper:	155.13	124.49	-19.8
Package queen/nuc deathloss (%):	3.99	23.87	498.7
Percent of packages/nucs purchased:			
- Locally (Alberta) (%)	2.15	0.77	-64.1
- Imported (%)	97.86	99.23	1.4
Distribution of imported packages purchased:			
- New Zealand (%)	99.80	83.62	-16.2
- Australia (%)	0.39	16.38	4088.8
Distribution of nucs purchased:			
- Alberta (%)	6.45	0.47	-92.7
- British Columbia (%)	88.97	61.98	-30.3
- Other Canadian provinces (%)	4.59	37.55	718.1
Average price per package (2 lb equivalent) purchased from:			
- New Zealand (\$)	120.42	121.14	0.6
- Australia (\$)	120.00	120.06	0.1
Average price per nuc purchased from:			
- Alberta (\$)	109.89	125.71	14.4
- British Columbia (\$)	104.82	110.68	5.6
- Other Canadian provinces (\$)	120.00	140.53	n/a
INDIVIDUAL QUEENS:			
Average number of queens purchased in spring per beekeeper:	190.82	198.63	4.1
Purchased individual queen deathloss (%):	18.02	24.72	37.2
Percent of individual queens purchased:			
- Locally (Alberta) (%)	0.28	2.55	810.7
- Imported (%)	99.72	97.45	-2.3
Distribution of imported queens:			
- British Columbia (%)	1.15	1.00	-13.0
- Other Canadian provinces (%)	0.33	1.69	n/a
- New Zealand (%)	0.22	0.26	18.2
- Australia (%)	0.08	0.55	587.5
- Hawaii (%)	87.48	88.75	1.5
- Other United States (%)	5.05	4.61	-8.7
- Chile (%)	-	3.10	n/a
- Other (%)	5.69	0.04	-99.3
Average price per individual queen purchased from:			
- British Columbia (\$)	24.96	25.00	0.2
- Other Canadian provinces (\$)	18.71	21.05	12.5
- New Zealand (\$)	20.52	21.18	3.2
- Australia (\$)	17.83	19.77	10.9
- Hawaii (\$)	19.95	20.24	1.5
- Other United States (\$)	22.11	22.82	3.2
- Chile (\$)	-	20.07	n/a
- Other (\$)	20.46	30.00	46.6

* Based on paired sample ** Weighted n/a Not applicable Note: Some totals may not add up due to rounding.

Source: Alberta Agriculture and Rural Development, Economics and Competitiveness Division, Statistics and Data Development Branch

**Table 1 (Cont'd) - 2008 AND 2009 BEEKEEPING SURVEY RESULTS - ALBERTA*
(GROUP AVERAGES)****

DESCRIPTION	2008	2009	09/08 (%)
OTHER SELECTED STATISTICS:			
Honey in inventory as of June 30th, per beekeeper (lbs.):	8,438.24	5,929.15	-29.7
Experience in beekeeping (years):	16.88	17.98	6.5
Estimated number of colonies per active beekeeper:	385.23	492.31	27.8
Over-wintering intentions for active colonies:			
- indoors in Alberta (%)	27.03	28.17	4.2
- outdoors in Alberta (%)	71.04	69.90	-1.6
- in British Columbia (%)	1.93	1.92	-0.3
Experience in over-wintering (years):			
- indoors	13.80	13.36	-3.2
- outdoors	14.19	15.15	6.8
Price received for 2008 honey crop:			
- Retail (\$/cwt)	269.71***	275.72****	----
- Wholesale (\$/cwt)	151.59 ***	150.31****	----
Price expected for 2009 honey crop:			
- Retail (\$/cwt)	n/a	259.84	----
- Wholesale (\$/cwt)	n/a	156.34	----

* Based on paired sample ** Weighted *** Expected price in 2008 **** Actual price received in 2008 n/a Not applicab

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

Source: Alberta Agriculture and Rural Development, Economics and Competitiveness Division,
Statistics and Data Development Branch

Honey Production in Alberta

The estimated number of beekeepers in Alberta increased in 2009. There was approximately 10 per cent more beekeepers in the province at 683, compared to 620 in 2008 (see tables 3 and 4). Also, colony numbers were higher compared to 2008. There were 251,000 colonies in the province up 11 per cent from the 2008 total of 226,000 colonies. Preliminary statistics indicate that while Alberta has about nine per cent of the nation's beekeepers, it accounted for 40 per cent of the honey producing colonies in Canada.

Alberta produced more honey in 2009 than was previously estimated. Final estimates show total production at 29.1 million pounds, compared to the preliminary fall estimate of 25.9 million pounds. The final estimate represents a 12 per cent increase in honey production compared to 2008. This increase in production is linked to the rise in the number of colonies and yield per colony. The yield per colony went up by one per cent to 116 pounds, compared to 2008.

Preliminary estimates by Statistics Canada peg total Canadian honey production in 2009 at 64.8 million pounds, compared to 64.9 million pounds a year earlier. Based on the initial estimates, Alberta accounts for 40 per cent of the nation's honey production.

Regionally in Alberta, honey production was the highest in the North West region in 2009 (see tables 2 and 4). This region produced 9.0 million pounds of honey, or 31 per cent of the total provincial production of 29.1 million pounds. The Peace region was second with roughly 8.9 million pounds, (or 31 per cent), followed by the South with approximately 4.3 million pounds (or 15 per cent). The Central region had the lowest production with 2.8 million pounds (or 10 per cent), followed by the North East with 4.1 million pounds (or 14 per cent). It cannot be over emphasized that estimated honey production on a regional basis is directly tied to colony numbers and yield, hence, explaining the variation among regions. Beekeepers from various regions tend to move their bees from honey producing locations to Southern Alberta for Hybrid canola seed production. Thus, the honey yield of these colonies is reduced due to high density of colonies per acre when used for pollination.

Just to note, the Alberta Beekeepers' Survey had included some questions regarding the pollination of crops. Based upon the survey results (which do not include all beekeepers involved in pollination activities), 31,322 colonies were rented for pollination in 2009, with an average rental charge of \$137.86 per colony. For some producers, this was one strategy employed to diversify their incomes and provide needed efficient managed pollinators, i.e. honey bees for crop production.

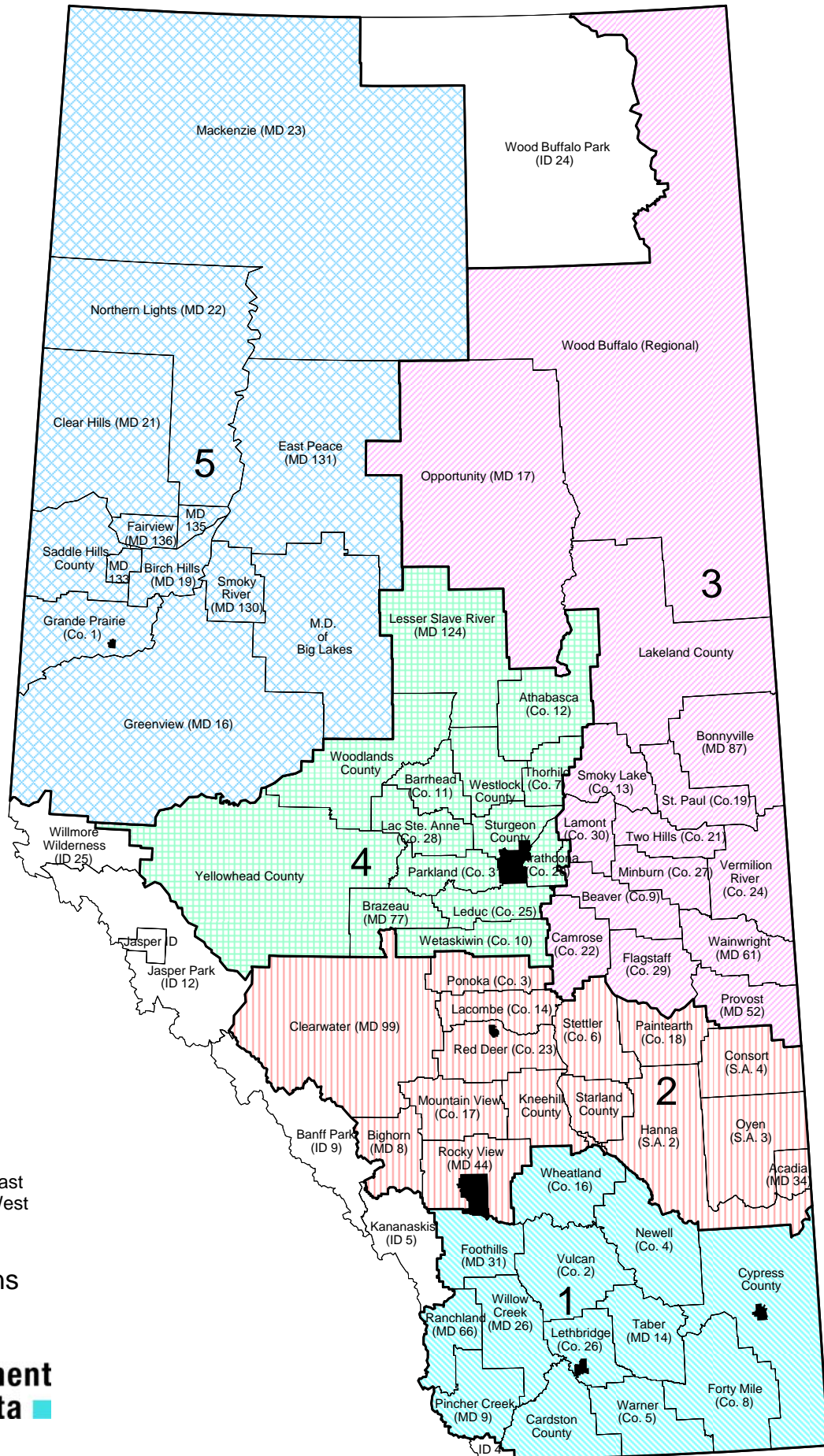
Region	Number of Active Beekeepers	Number of Producing Colonies	Honey Yield Per Colony		Total Honey Produced	
			lbs	kg	lbs	tonnes
South	94	66,934	64	29	4,250,287	1,928
Central	147	19,611	144	65	2,829,458	1,283
North East	96	26,689	154	70	4,105,725	1,862
North West	244	74,209	122	55	9,043,223	4,102
Peace	102	63,558	140	64	8,887,308	4,031
Province	683	251,000	116	53	29,116,000	13,207






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

**2009 REGIONAL DISTRIBUTION OF ALBERTA'S ESTIMATED HONEY PRODUCTION
(SELECTED HONEY STATISTICS)**



Source: Alberta Agriculture and Rural Development, Economics and Competitiveness Division, Statistics and Data Development Branch



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

ARD Regions



Alberta Municipalities Classified by Region

South Region*

<u>Legal Name</u>	<u>AMC</u>	<u>Reference</u>
Cardston County	-----	M.D. No. 6
Cypress County	-----	M.D. No. 1
Foothills No. 31	MD 31	M.D. No. 31
Forty Mile County No. 8	CO 8	County No. 8
Lethbridge County	-----	County No. 26
Newell County No. 4	CO 4	County No. 4
Pincher Creek No. 9	MD 9	M.D. No. 9
Ranchland No. 66	MD 66	M.D. No. 66
Taber	MD	M.D. No. 14
Vulcan County	-----	County No. 2
Warner County No. 5	CO 5	County No. 5
Wheatland County	-----	County No. 16
Willow Creek No. 26	MD 26	M.D. No. 26

Central Region*

<u>Legal Name</u>	<u>AMC</u>	<u>Reference</u>
Acadia No. 34	MD 34	M.D. No. 34
Bighorn No. 8	MD 8	M.D. No. 8
Calgary	-----	Calgary
Clearwater County	-----	M.D. No. 99
Kneehill County	-----	M.D. No. 48
Lacombe County	-----	County No. 14
Mountain View County	-----	County No. 17
Paintearth County No. 18	CO 18	County No. 18
Ponoka County	-----	County No. 3
Red Deer County	-----	County No. 23
Rocky View No. 44	MD 44	M.D. No. 44
Special Area No. 2	SA 2	S.A. No. 2
Special Area No. 3	SA 3	S.A. No. 3
Special Area No. 4	SA 4	S.A. No. 4
Starland County	-----	M.D. No. 47
Stettler County No. 6	CO 6	County No. 6

North East Region*

<u>Legal Name</u>	<u>AMC</u>	<u>Reference</u>
Beaver County	-----	County No. 9
Bonnyville No. 87	MD 87	M.D. No. 87
Camrose County No. 22	CO 22	County No. 22
Flagstaff County	-----	County No. 29
Lakeland County	-----	M.D. No. 87
Lamont County	-----	County No. 30
Minburn County No. 27	CO 27	County No. 27
Opportunity No. 17	MD 17	M.D. No. 17
Provost No. 52	MD 52	M.D. No. 52
Smoky Lake County	-----	County No. 13
St. Paul County No. 19	CO 19	County No. 19
Two Hills County No. 21	CO 21	County No. 21
Vermilion River County No. 24	CO 24	County No. 24
Wainwright No. 61	MD 61	M.D. No. 61

North West Region*

<u>Legal Name</u>	<u>AMC</u>	<u>Reference</u>
Athabasca County No. 12	CO 12	County No. 12
Barrhead County No. 11	CO 11	County No. 11
Brazeau No. 77	MD 77	M.D. No. 77
Edmonton	-----	Edmonton
Lac Ste. Anne County	-----	County No. 28
Leduc County	-----	County No. 25
Lesser Slave River No. 124	MD 124	M.D. No. 124
Parkland County	-----	County No. 31
Strathcona County	-----	County No. 20
Sturgeon County	-----	M.D. No. 90
Thorhild County No. 7	CO 7	County No. 7
Westlock County	-----	M.D. No. 92
Wetaskiwin County No. 10	CO 10	County No. 10
Woodlands County	-----	M.D. No. 15
Yellowhead County	-----	M.D. No. 94

Peace Region*

<u>Legal Name</u>	<u>AMC</u>	<u>Reference</u>
Big Lakes	MD	M.D. BGL
Birch Hills County	-----	M.D. No. 19
Clear Hills No. 21	MD 21	M.D. No. 21
East Peace No. 131	MD 131	M.D. No. 131
Fairview No. 136	MD 136	M.D. No. 136
Greenview No. 16	MD 16	M.D. No. 16
Grande Prairie County No. 1	CO 1	County No. 1
Mackenzie No. 23	MD 23	M.D. No. 23
Northern Lights No. 22	MD 22	M.D. No. 22
Peace No. 135	MD 135	M.D. No. 135
Saddle Hills County	-----	M.D. No. 20
Smoky River No. 130	MD 130	M.D. No. 130
Spirit River No. 133	MD 133	M.D. No. 133

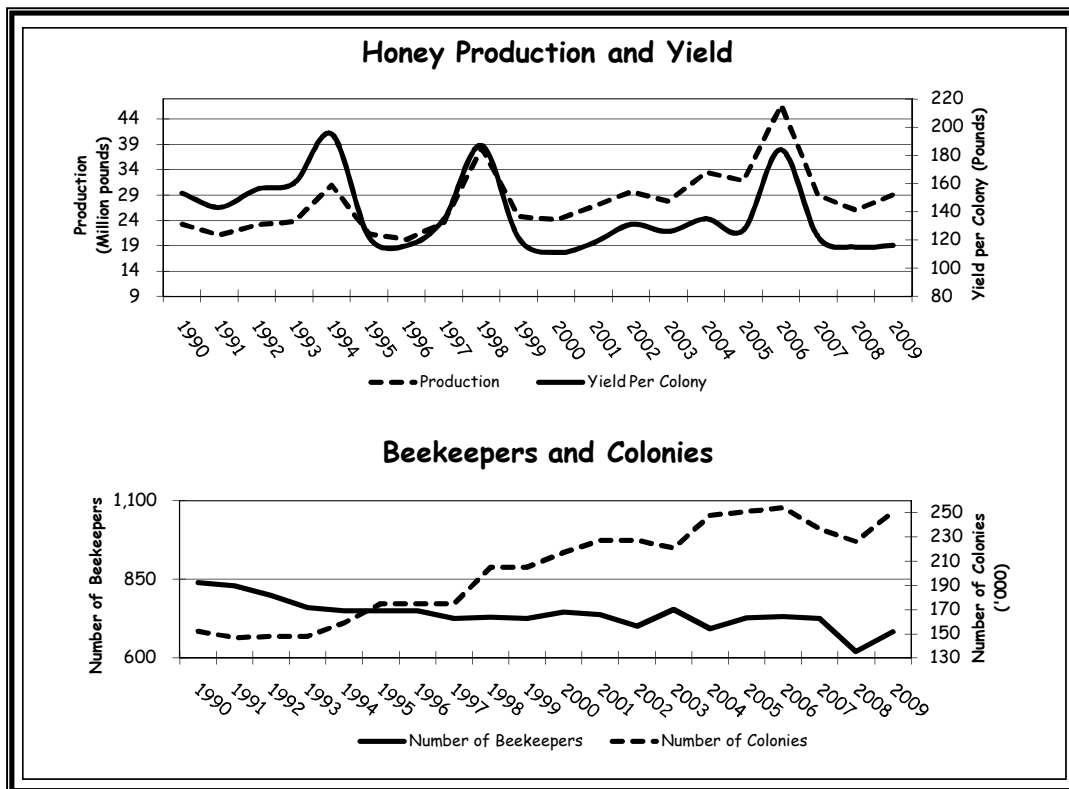
AMC – Abbreviated Municipality Code
Reference – Prior Legal Name

* ARD Regional boundaries no longer exist; however, these have been maintained to facilitate historical comparisons.

Table 3 - ALBERTA HONEY STATISTICS, 1990-2009

Year	No. of Beekeepers	No. of Colonies	Production ('000 pounds)	Yield per Colony (pounds)	No. of Colonies Per Beekeeper
1990	840	152,000	23,294	153	181
1991	830	147,000	21,032	143	177
1992	800	148,000	23,088	156	185
1993	761	148,000	23,745	160	194
1994	750	159,000	31,005	195	212
1995	750	175,000	21,306	122	233
1996	750	175,000	20,215	116	233
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

Alberta Honey Production, Yield, Beekeepers and Colonies



Source: Alberta Agriculture and Rural Development, Economics and Competitiveness Division, Statistics and Data Development Branch

Table 4 - HONEY PRODUCTION BY REGION IN ALBERTA (2002-2009)

Region	2002	2003	2004	2005	2006	2007	2008	2009
Number of Active Beekeepers								
South	80	90	87	90	90	94	90	94
Central	151	159	138	150	151	141	128	147
North East	100	109	106	117	115	110	87	96
North West	256	272	252	255	262	267	227	244
Peace	115	124	110	116	115	114	88	102
Province	702	754	693	728	733	726	620	683
Number of Producing Colonies								
South	61,317	57,100	57,861	66,923	65,671	66,895	66,901	66,934
Central	16,120	15,921	20,885	17,100	18,240	17,819	17,604	19,611
North East	29,622	30,429	33,858	33,297	30,799	27,780	25,439	26,689
North West	58,767	57,615	64,968	68,564	73,076	64,480	63,546	74,209
Peace	61,174	59,936	70,427	65,116	66,213	60,026	52,510	63,558
Province	227,000	221,000	248,000	251,000	254,000	237,000	226,000	251,000
Average Yield (pounds per colony)								
South	54	122	50	60	117	72	49	64
Central	78	112	131	142	198	103	76	144
North East	154	95	147	129	225	139	160	154
North West	174	124	162	175	253	164	137	122
Peace	170	151	175	140	152	131	164	140
Province	131	126	135	127	184	122	115	116
Honey Production ('000 pounds)								
South	3,330	6,951	2,905	4,036	7,702	4,842	3,306	4,250
Central	1,256	1,785	2,740	2,430	3,611	1,827	1,334	2,829
North East	4,570	2,892	4,978	4,306	6,928	3,850	4,058	4,106
North West	10,205	7,161	10,539	12,015	18,455	10,551	8,700	9,043
Peace	10,376	9,056	12,318	9,090	10,040	7,844	8,591	8,887
Province	29,737	27,846	33,480	31,877	46,736	28,914	25,990	29,116

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

Source: Alberta Agriculture and Rural Development, Economics and Competitiveness Division, Statistics and Data Development Branch