

# AgriProfit\$

## Economics of Beekeeping in Alberta 2011



ECONOMICS OF BEEKEEPING  
IN ALBERTA

2011

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**Emmanuel Anum Laate**

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# SECTION I

## INTRODUCTION

Costs and returns for livestock, crops and several other enterprises have been monitored in the province in an extensive way since the 1960s. These studies have been viewed as an important tool for assisting producers in their cropping decisions and the federal and provincial governments in developing policies and programs for the different farm enterprises. Where information gaps existed in other provinces, results from these studies have served as the basis to fill those gaps.

The beekeeping sector is a vital component of the agricultural industry in Alberta. The major enterprises of the beekeeping industry in Alberta are honey production and pollination. A business analysis of beekeeping operations in 2011 across the province shows that a third enterprise – selling of bees (queens, over wintered nuclei (nucs), and hives) is emerging. Currently, there are 880 beekeepers and 282,000 bee colonies in Alberta. Approximately 85 percent of bee colonies are in commercial operations. Over 75,000 bee colonies are annually rented for pollinating pedigreed hybrid canola seed to ensure high yield of canola seed for farmers.

This report provides detailed information on the economics of beekeeping in the province, specifically for honey production and pollination during the 2011 production year. The 2011 costs and return study is a continuing effort to monitor honey/pollination enterprise production in the province which has been done periodically by the Economics Branch of Alberta Agriculture and Rural Development since the early 1970s. The last cost of production survey was completed in 2008. Information presented in this report can be used for several purposes including preparation of feasibility studies, program evaluation and policy development for the honey/pollination industry, etc. It would also assist individual study participants to compare their costs and returns with the group averages to better develop/manage their operations.

### **Objectives of the Study**

Following are the objectives of this study:

1. To determine production costs and returns associated with beekeeping in Alberta.



2. To establish physical input/output relationships for beekeeping in Alberta.
3. To provide each study participant with a detailed analysis of his/her beekeeping operation and opportunity to compare the operation with the group averages.
4. To observe regional differences in costs and returns for beekeeping operations across the province.
5. To document how variation in size of operation affects net returns.
6. To provide an up-to-date economic report on the beekeeping in Alberta to assist governments in developing programs and policies for this industry.

### **The Study Sample**

The sample for the 2011 study was randomly selected from the list of honey producers. The random selection of the sample ensured a representative cross section of producers in the province. A total of 76 producers were selected to be surveyed personally to obtain detailed cost and return information. About twenty one (21) beekeepers across the province completed the questionnaires for the 2011 study. Fourteen (14) beekeepers produced only honey while the remaining seven (7) study participants rented their hives for pollination and extracted honey also. Regional breakdown of the 21 beekeepers producing honey and renting out hives for pollination is as follows:

<b>REGION</b>	<b>NUMBER OF PARTICIPANTS</b>	<b>AVERAGE NUMBER OF HIVES PER BEEKEEPER</b>
Southern, Central and North East	9	2,890
North West	5	1,022
Peace River	7	1,412
<b>TOTAL</b>	<b>21</b>	<b>1,952</b>

The study sample of 21 beekeepers was further divided into the following two groups by size of operation.

<b>BY SIZE OF BEEKEEPING OPERATION</b>	<b>NUMBER OF PARTICIPANTS</b>	<b>AVERAGE NUMBER OF HIVES PER BEEKEEPER</b>
Up to 1,000 hives	10	527
Over 1,000 hives	11	3,248

<b>TOTAL</b>	<b>21</b>	<b>1,952</b>
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Furthermore, the study sample was classified by beekeepers producing only honey and those renting out hives for pollination and extracting honey as well. Following is classification by region and by size of operation.

	<b>HONEY</b>		<b>POLLINATION</b>	
	NUMBER OF PARTICIPANTS	AVERAGE NUMBER OF HIVES	NUMBER OF PARTICIPANTS	AVERAGE NUMBER OF HIVES
<b>BY REGION</b>				
GROUP I - Southern, Central and North East	3	1,149	6	3,025
GROUP II - North West	5	1,022	-	-
GROUP III - Peace River	6	1,140	1	N/A
<b>TOTAL</b>	<b>14</b>	<b>1,100</b>	<b>7</b>	<b>3,657</b>
<b>BY SIZE OF OPERATION</b>				
GROUP IV - Less than 1,000 hives	9	495	1	N/A
GROUP V - More than 1,000 hives	5	2,188	6	4,132
<b>TOTAL</b>	<b>14</b>	<b>1,100</b>	<b>7</b>	<b>3,657</b>

N/A = Not Available. Data not published to maintain confidentiality.

In total, the number of hives for both honey production and pollination in the study sample was approximately 41,000. This represents about 15 percent the total number of hives in the province in 2011. The survey data showed that the largest beekeeper operated approximately 9,000 hives and the smallest 136 hives. Although the sample size for the costs and return data was somewhat small, yet it provided enough information that the results could be used as guidelines.

### **Method of Analysis**

The raw data obtained from the 21 beekeepers across the province was reviewed for information gaps before entering into the computer for analysis. Individual analyses, provincial and group averages (by region and size of operation) were developed using the Paradox program. Individual analyses were mailed to study participants for their review and feedback before

finalizing the group averages for this report. The terminologies used in the report are defined as follows:

***Total Value of Honey:***

This refers to the value of honey produced over the course of the production year. Total value of honey is based on:

- Bulk honey sales
- Bulk honey inventory
- Consumer pack sales
- Consumer pack inventory, and
- Other honey sales.

***Total Value of Production:***

In addition to total value of honey, total value of production includes:

- Wax sales
- Pollen sales
- Crop insurance receipts
- Miscellaneous income (any program payments)
- Less honey purchase of resale, and
- Hive rental - pollination.

The study participants were asked to provide actual sales and an estimate of expected price for any honey held in inventory and/or any other stock.

***Variable Costs:***

Most of the inputs used in honey production were purchased during the production year and recorded as such in the year-end statement. The study participants were asked to provide estimates for those costs for which actual records were not available, i.e., an inventory carried from last year. In 2011, the average hourly wage for hired labour was the actual wage reported by the study participant. Operating interest was the actual amount paid by the study participant. Operators and family labour under 16 years (unpaid labour) were valued at \$10.50 and \$7.50 per hour, respectively. The study participants were asked to provide estimates of hours spent on the

honey operation by their family member(s) and themselves.

***Capital Costs:***

Capital costs include land rent/lease, building rent and forage access, bee equipment, and vehicles, etc. Capital interest was the actual amount paid by the study participants for capital purchases.

***Cash Costs:***

Cash costs represent all out-of-pocket costs incurred during the production period and marketing of honey. It does not include costs associated with operators and family labour and depreciation for buildings and equipment.

***Total Production Costs:***

Total production costs comprise of variable costs and capital costs.

***Management Indicators:***

Management indicators presented at the bottom of various tables show gross margin, return to unpaid labour, investment and equity. These indicators provide profit margins and economic viability of production at the provincial level by regions and by size of operations.

- Gross margin - gross revenue less cash costs.
- Return to unpaid labour - gross revenue less total production costs plus unpaid labour.
- Return to Investment - gross revenue less total production costs plus capital interest.
- Return to Equity - gross revenue less total production costs

## SECTION II

### BEEKEEPING INDUSTRY STATISTICS IN ALBERTA

Table 1 shows historical summary of the number of beekeepers, colonies, colonies per beekeeper, production and price of honey received by beekeepers in Alberta from 1980 to 2012. In 2012, there were 880 beekeepers, up 10 percent from 2011 and the highest since 1989. As reported by the Provincial Apiculturist, there is a significant increase in the number of hobby beekeepers in Alberta especially in urban districts. Preliminary statistics indicate that while Alberta accounts for a relatively small percentage of the nation's total beekeepers, it had about 40 percent of honey producing colonies in 2012.

As shown in Table 1, the number of beekeepers has varied considerably in the province. It declined from 1,800 beekeepers in 1980 to 620 in 2008, a decrease of about 66 percent. The number of honey producing colonies per beekeeper however increased by more than 300 percent over the period and this clearly shows that the industry has consolidated over the years. Bee colony numbers ranged from 143,500 in 1989 to 282,000 in 2012. The increase in the number of colonies in 2012 was due to a low winterkill in 2011-2012 and healthy colonies in spring of 2012.

Figure 1 shows trends in honey production in Alberta from 1980 to 2012. The highest honey production was recorded in 2006. This was followed by two consecutive years of decline in 2007 and 2008. The decrease in honey production in 2007 and 2008 respectively was due to high winterkill of bee colonies. Honey production has been increasing consistently since 2008 with the exception of 2011. The low production in 2011 was due to several factors including a long winter, rainy spring and increased splitting of colonies. The 2012 production at 38.9 million pounds is the second highest on record, and represents approximately 14 percent increase from 2011.

Figures 2, 3 and 4 show the trends in the number of bee colonies, production per colony and honey price per pound, respectively over the period 1980 to 2012 in Alberta. During the past five years (2008 to 2012) the number of bee colonies, production per colony and the price of honey averaged 259,920 colonies, 125 pounds and \$1.65 per pound respectively.

**Table 1: Historical Data on Honey Production in Alberta, 1980 – 2012**

Year	Number of Beekeepers	Number of Colonies	Colonies Per Beekeeper	Production Per Colony (lb)	Honey Production (lb)	Price Per Pound (cents)
1980	1,800	160,000	89	141	22,560,000	58
1981	1,700	170,000	100	116	19,720,000	64
1982	1,650	174,000	105	104	18,096,000	62
1983	1,610	172,000	107	146	25,112,000	60
1984	1,600	180,000	113	154	27,720,000	49
1985	1,700	181,000	106	102	18,462,000	56
1986	1,700	190,000	112	126	23,940,000	60
1987	1,480	193,000	130	132	25,476,000	42
1988	1,140	150,000	132	153	22,950,000	40
1989	855	143,500	168	120	17,220,000	49
1990	840	152,000	181	153	23,256,000	58
1991	830	147,000	177	143	21,021,000	58
1992	800	148,000	185	156	23,088,000	59
1993	761	148,000	194	160	23,680,000	69
1994	750	159,000	212	195	31,005,000	68
1995	750	175,000	233	122	21,350,000	83
1996	750	175,000	233	116	20,300,000	125
1997	725	175,000	241	135	23,625,000	110
1998	730	205,000	281	187	38,335,000	89
1999	725	205,000	283	121	24,805,000	81
2000	747	217,000	290	111	24,087,000	83
2001	739	227,000	307	118	26,786,000	103
2002	702	227,000	323	131	29,737,000	198
2003	754	221,000	293	126	27,846,000	204
2004	693	248,000	358	135	33,480,000	176
2005	728	251,000	345	127	31,877,000	99
2006	733	254,000	347	184	46,736,000	96
2007	726	237,000	326	122	28,914,000	98
2008	620	226,000	365	115	25,990,000	151
2009	683	251,000	367	116	29,116,000	168
2010	769	266,000	346	130	34,580,000	163
2011	798	274,600	344	124	34,050,400	174
2012	880	282,000 <sup>P</sup>	320 <sup>P</sup>	138 <sup>P</sup>	38,900,000 <sup>P</sup>	170 <sup>P</sup>
2011/2008*	29%	22%	-6%	8%	31%	15%
% CAGR**	6.5%	5.0%	-1.4%	1.9%	7.0%	3.5%

Source: Agriculture Statistics Yearbook, Statistics and Data Development Branch, ARD.

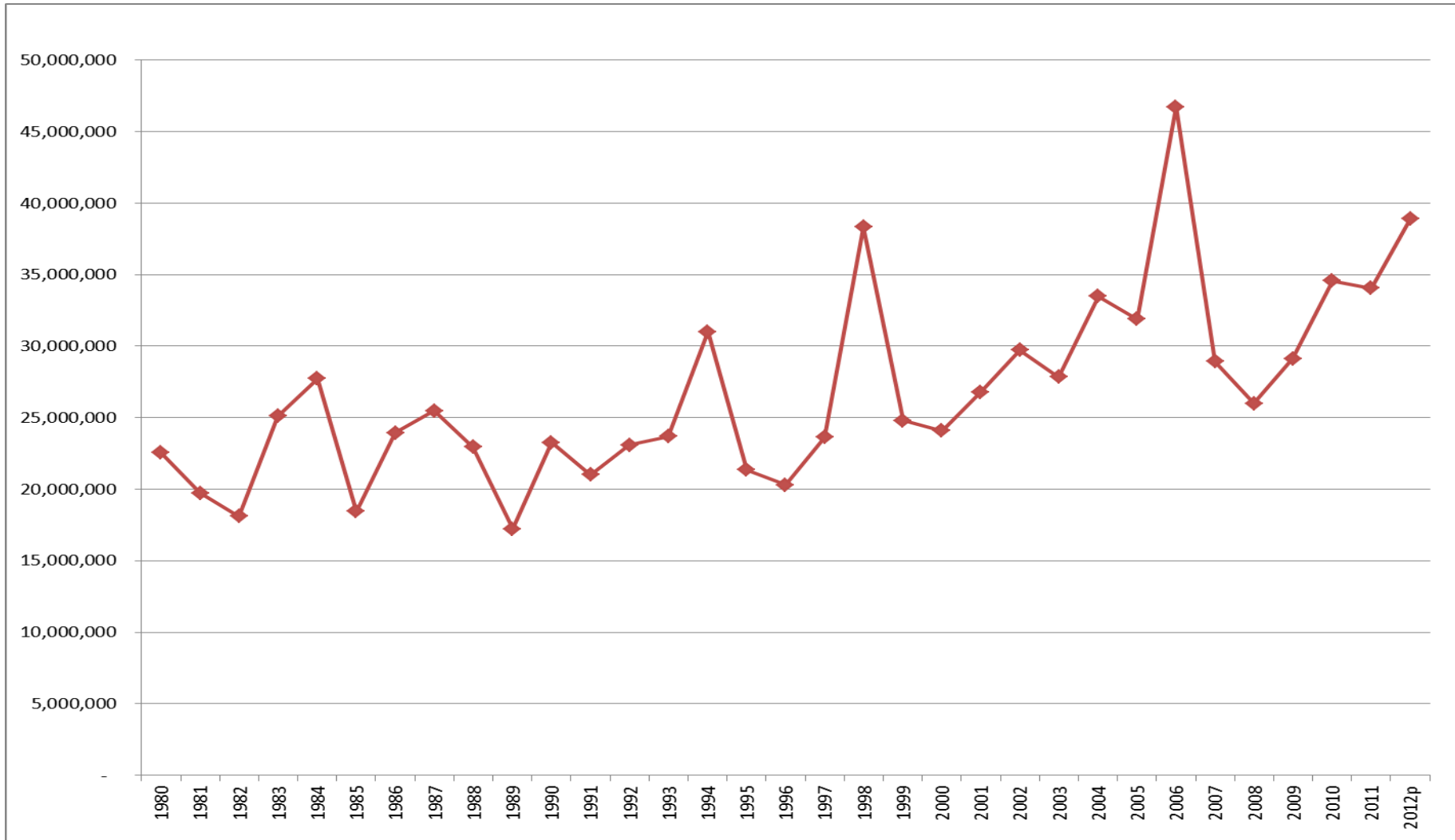
P = Preliminary

2011/2008\* = 2011/2008 Percentage Change

% CAGR\*\* = 2008-2011 Compound Annual Growth Rate

Included in Table 1, is a 2011/2008 percentage change as well as a compound annual growth rate which shows the year-over-year growth rate observed in the industry from 2008 to 2011. Since the current and previous costs of production studies were completed in 2011 and 2008 respectively, these percentages provide an idea of how the industry has generally performed. Compared to 2008, the number of beekeepers, bee colonies, production per colony, and price per pound of honey in 2011 in Alberta increased by 29 percent, 22 percent, 8 percent and 15 percent respectively. This translates to a compound annual growth rate for number of beekeepers, bee colonies, production per colony and price per pound of honey of 6.5 percent, 5 percent, 1.9 percent and 3.5 percent respectively.

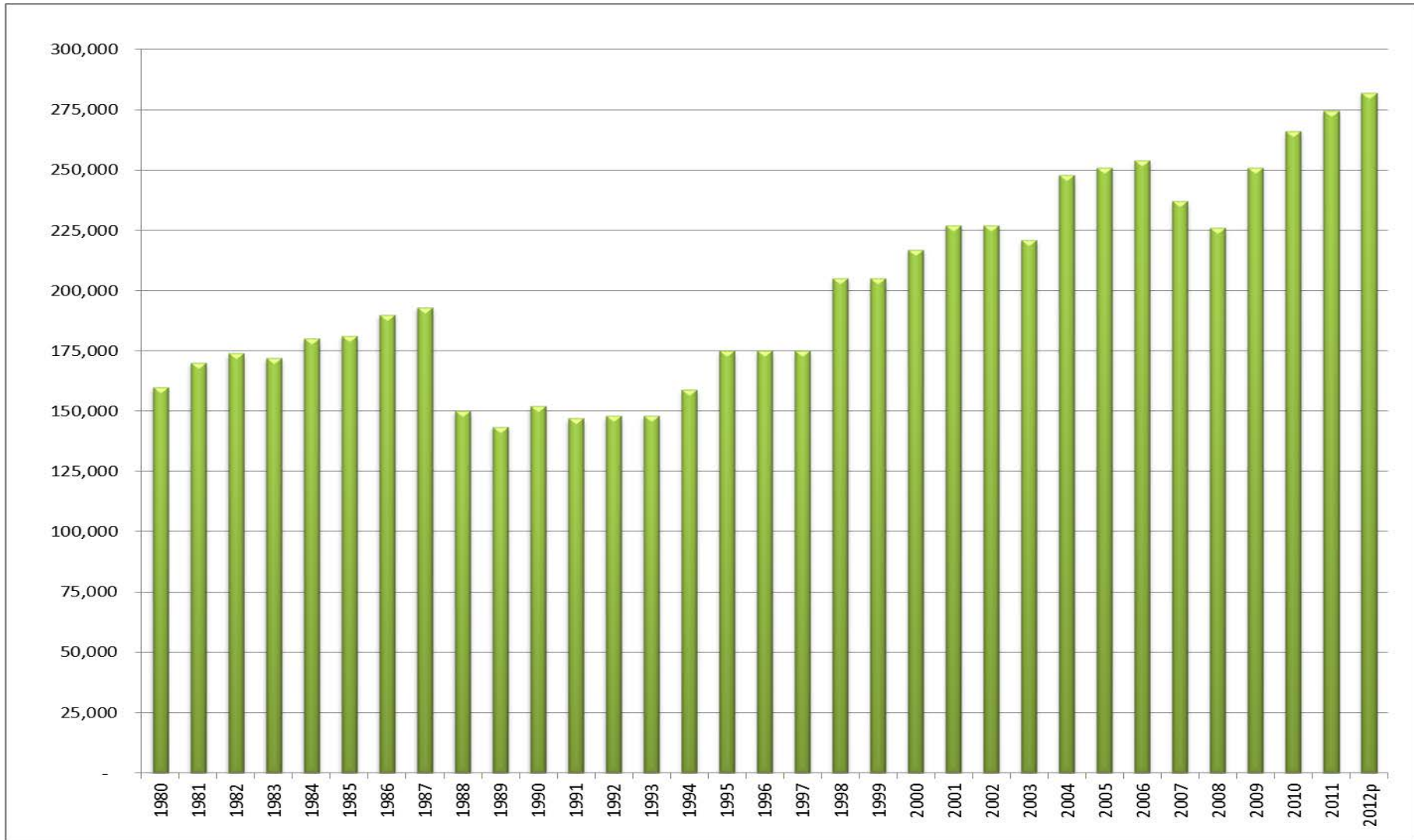
**Figure 1: Honey Production in Alberta, 1980-2012 (lb)**



P = preliminary

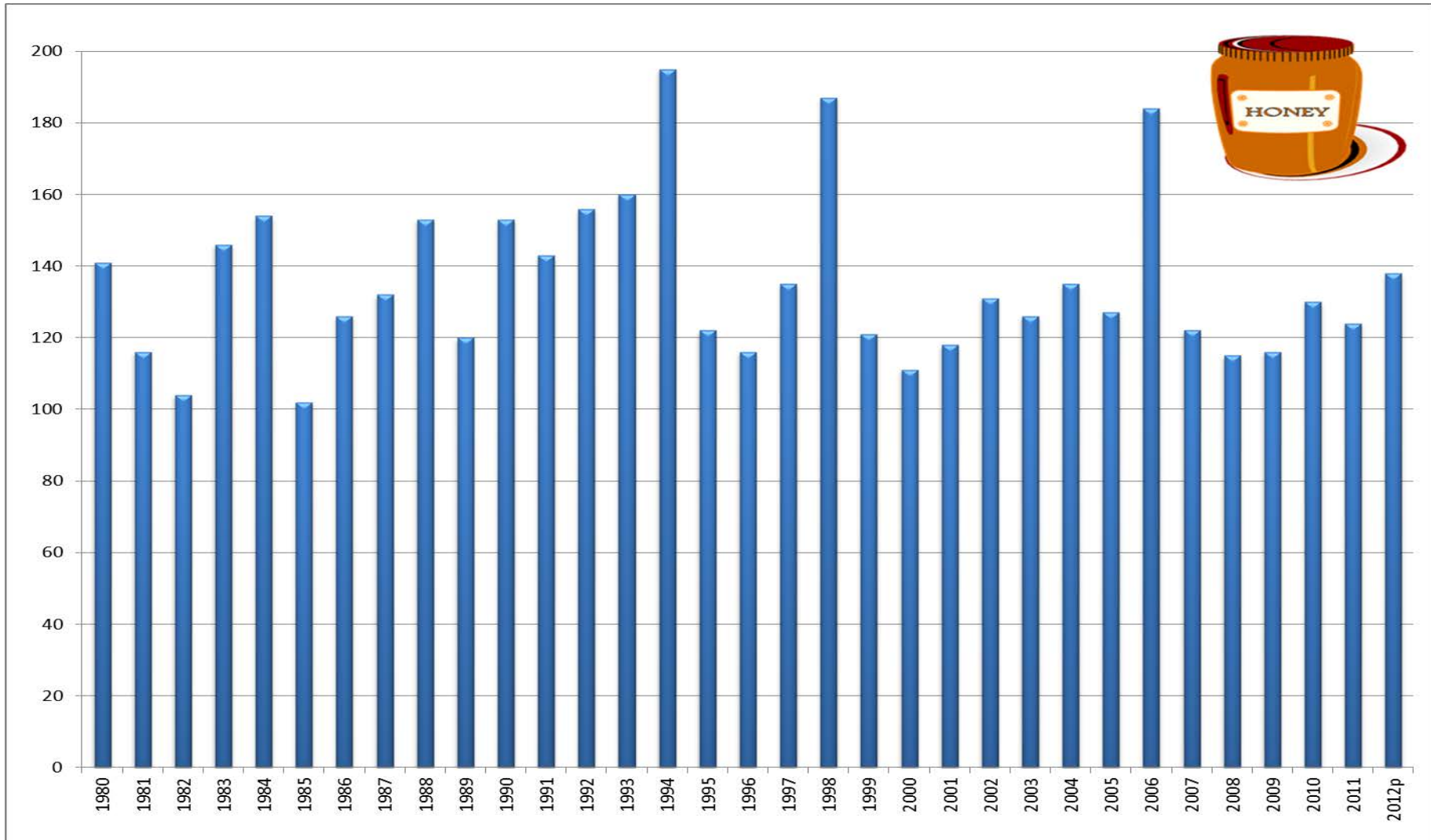


**Figure 2: Number of Colonies in Alberta, 1980-2012**



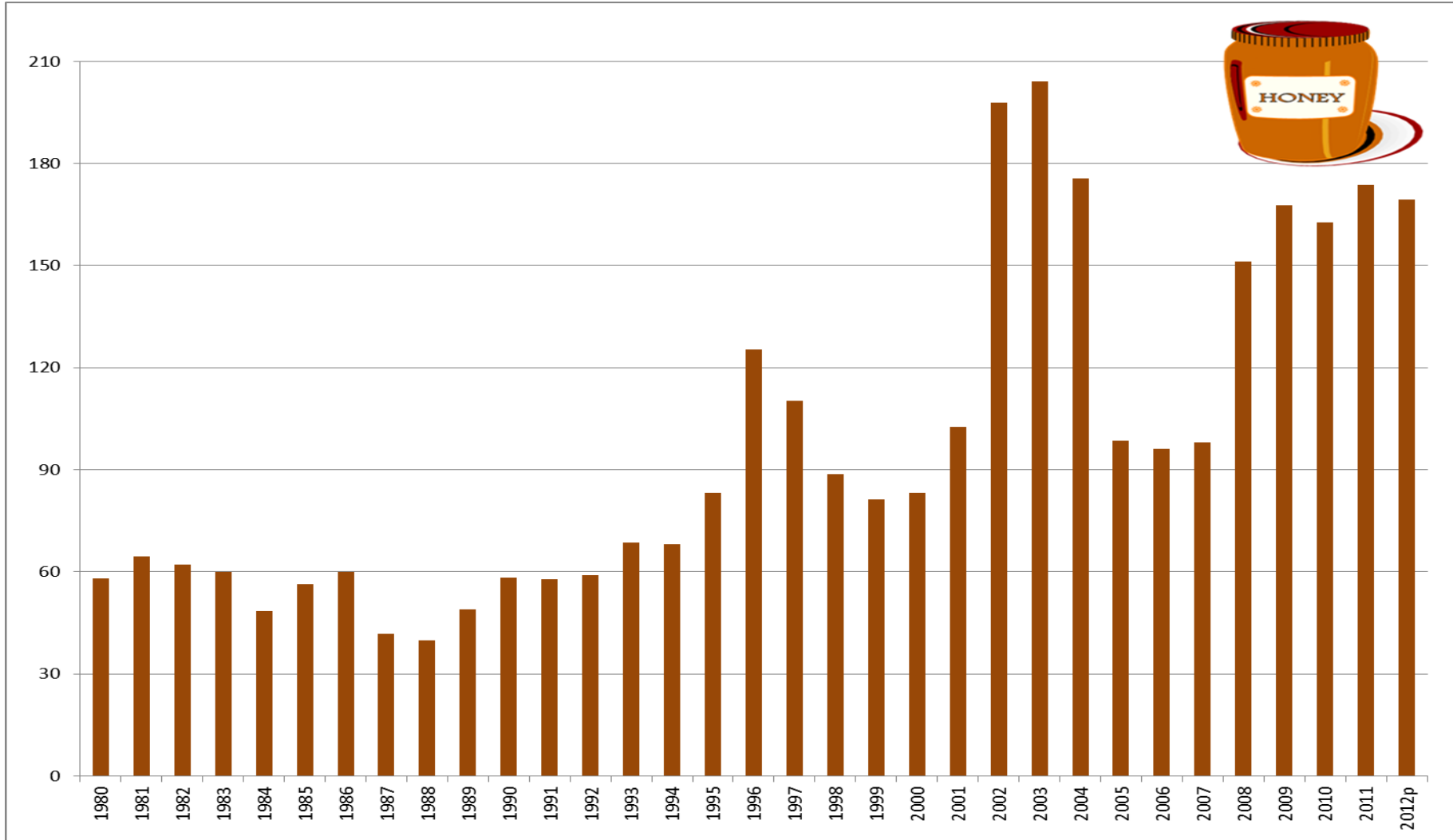
P = preliminary

**Figure 3: Production Per Colony in Alberta, 1980-2011 (lb)**



P = preliminary

**Figure 4: Honey Price in Alberta, 1980-2011 (cents per pound)**



P = preliminary

## SECTION III

### HONEY PRODUCTION COSTS AND RETURNS IN ALBERTA, 2011

The results in Table 2 are based on data provided by 14 beekeepers across the province. In 2011, honey produced for sale by an average study participant was 158,223 pounds, of which 144,380 pounds (91 percent) were sold as bulk honey. Bulk honey inventory was estimated at 2,767 pounds (2 percent); consumer pack sales at 4,068 pounds (3 percent); consumer pack inventory at 6,829 pounds (4 percent) and other honey sales amounted to 180 pounds (0.1 percent).

The average number of hives per study participant was 1,100. The average yield per hive was estimated at 144 pounds. The average honey production per hive for this group of beekeepers was higher by 20 pounds compared to the provincial average of 124 pounds shown in Table 1. Due to the relatively small sample size and location of the participants for the cost and return study, readers or users of this report are to note that production per hive is difficult to compare. Details on honey, wax and pollen sales and other income are presented in Table 2.

Total value of honey produced (bulk honey sales, inventory, consumer pack sales, consumer pack inventory, other honey sales) amounted to \$252,231 in 2011. This translates to an average value per hive of \$229 or \$1.59 per pound of honey produced. When wax/pollen sales; crop insurance and other miscellaneous receipts were included to the value of honey, the total value of production (A) increased to about \$298,709 or \$272 per hive (\$1.89 per pound of honey produced). Honey prices in 2011 increased by approximately 7 percent over the price in 2010 and by 4 percent in 2009. Estimated price for the 2012 honey crop was 170 cents per pound, about 2.5 percent lower than the 2011 price.

#### **Variable Costs:**

Variable costs (B) were estimated at \$173,058 per average study participant in 2011. In terms of variable costs per hive, average amount was \$157 per hive (\$1.09 per pound). Due to the producers' interest in knowing their variable costs for each basic unit of production, these costs were broken into as much detail as possible. The most significant inputs that made up major portions of variable costs were paid labour and benefits followed by expenses associated with sugar for feeding machine and building repairs, fuel, small tools, supplies and miscellaneous

expenses, unpaid labour and bee purchases.

**Capital Costs:**

Capital costs (C) are comprised of land rent/lease, building rent and forage access, taxes, licenses and general insurance, depreciation for buildings, bee equipment and vehicles, lease payments and capital interest paid. Average total capital cost amounted to \$80,035 or \$73 per hive or \$0.51 per pound of honey produced.

**Cash Costs:**

Cash costs (D) include all out of pocket costs incurred during the honey production period. These costs amounted to \$179,947 per average beekeeper in the study for the 2011 honey production. In terms of average cash costs per hive, the amount was \$164 or \$1.14 per pound of honey produced.

**Total Production Costs:**

Average total production cost (E) was estimated at \$253,092 for an average honey operation with 1,100 hives. Average production cost per hive or per pound of honey produced was \$230 or \$1.60 respectively. Details on total production cost for an average study participant are presented in Table 2.

**Management Indicators:**

When cash costs were deducted from the total value of honey production (A-D), average study participant showed a positive gross margin of \$118,762 per beekeeping operation. Gross margin per hive was \$108 or \$0.75 per pound of honey produced. Average return to unpaid labour in 2011 was positive at \$58,715 per study participant. In terms of return to unpaid labour per hive, it amounted to positive \$53 or \$0.37 per pound of honey produced. Average return to investment was positive at \$50,786 per operation or \$46 per hive (\$0.32 per pound). Return to equity per hive was also positive at \$45,617 per average beekeeper or \$41 per hive (\$0.29 per pound) for honey produced in 2011.

**Table 2: Honey Production Costs and Returns, Alberta, 2011**

		<b>Total \$</b>	<b>\$/Hive</b>	<b>\$/lb</b>
<b>(A)</b>				
1. Bulk Honey Sales	144,379.82 lb	225,162.46	204.71	1.56
2. Bulk Honey Inventory	2,766.50 lb	4,310.57	3.92	
3. Consumer Pack Sales	4,067.86 lb	12,053.35	10.96	
4. Consumer Pack Inventory	6,829.07 lb	10,502.04	9.55	
5. Other Honey Sales	179.71 lb	202.24	0.18	
6. Wax/Pollen/Other Sales	2,825.86 lb	9,152.11	8.32	
7. Bee Sales		0.00	0.00	
8. Crop Insurance Receipts		13,347.50	12.13	
9. Miscellaneous Receipts		1,693.00	1.54	
10. Less: Honey Purchase for Resale		22,285.71	20.26	
<b>VALUE OF PRODUCTION</b>		<b>298,708.98</b>	<b>271.57</b>	<b>1.89</b>
<b>(B)</b>				
1. Bee Purchases - Package Bees		1,377.50	1.25	
2. Bee Purchases - Queens		8,491.43	7.72	
3. Bee Purchases - Nucs		1,757.14	1.60	
4. Freight and Trucking		4,748.10	4.32	
5. Sugar for Feeding		30,190.62	27.45	
6. Pollen Supplement Feeding		1,433.14	1.30	
7. Medicinal Sugar/Bee Repellent		8,810.47	8.01	
8. Product and Crop Insurance		4,517.79	4.11	
9. Fuel		13,671.48	12.43	
10. Repairs - Machine		10,136.22	9.22	
11. Repairs - Buildings and Improvements		3,973.47	3.61	
12. Utilities and Heating Fuel		7,626.06	6.93	
13. Custom Work and Machine Rental		1,459.43	1.33	
14. Assoc. Dues, Prof'l Fees, Promotion and Travel		6,106.56	5.55	
15. Small Tools, Supplies and Miscellaneous Expenses		13,283.75	12.08	
16. Operating Interest		2,645.50	2.41	
17. Paid Labour and Benefits	2,525.27 hours	39,730.91	36.12	
18. Unpaid Labour	1,247.43 hours	13,098.00	11.91	
<b>VARIABLE COSTS</b>		<b>173,057.57</b>	<b>157.34</b>	<b>1.09</b>
<b>(C)</b>				
1. Land Rent/Lease, Bldg. Rent and Forage Access		3,050.64	2.77	
2. Taxes, Licences and General Insurance		11,767.32	10.70	
3. Equipment and Building a) Depreciation		60,047.19	54.59	
	b) Lease Payments	0.00	0.00	
4. Paid Capital Interest		5,169.46	4.70	
<b>TOTAL CAPITAL COSTS</b>		<b>80,034.61</b>	<b>72.76</b>	<b>0.51</b>
<b>(D)</b>	<b>CASH COSTS (B+C-B18-C3a)</b>	<b>179,946.99</b>	<b>163.60</b>	<b>1.14</b>
<b>(E)</b>	<b>TOTAL PRODUCTION COSTS (B+C)</b>	<b>253,092.18</b>	<b>230.10</b>	<b>1.60</b>
<b>(F)</b>	<b>GROSS MARGIN (A-D)</b>	<b>118,761.99</b>	<b>107.97</b>	<b>0.75</b>
	<b>RETURN TO UNPAID LABOUR (A-E+B18)</b>	<b>58,714.80</b>	<b>53.38</b>	<b>0.37</b>
	<b>RETURN TO INVESTMENT (A-E+C4) 8.5%</b>	<b>50,786.26</b>	<b>46.17</b>	<b>0.32</b>
	<b>RETURN TO EQUITY (A-E)</b>	<b>45,616.80</b>	<b>41.47</b>	<b>0.29</b>
<b>MANAGEMENT</b>				
	Number of Hives		1,099.93	
	Average Yield per Hive (lb)		143.85	
	Honey Produced (lb)		158,222.97	

**Investment Costs:**

Investment costs were divided into four categories, namely land, buildings, bee equipment (including machinery), and vehicles. The study participants were asked to provide market value of land, buildings, bee equipment, machinery and vehicles to estimate total investment and depreciation for an average beekeeping operation. Actual interest paid on capital was used to arrive at total capital cost which also included depreciation for buildings, bee equipment, and vehicles.

For the study sample, land associated with the beekeeping operation was over 19 acres, valued at \$24,420 (\$1,248 per acre) or \$22 per hive. Building investment per study participant was estimated at \$154,528 or \$140 per hive. Bee equipment investment was \$386,089 per average operation or \$351 per hive. Machinery (automotive) investment was based on the percentage use of vehicles for the honey operation. This investment was estimated at \$104,176 or \$95 per hive in 2011. When all of the investment items were added together, total investment amounted to \$669,212 per average beekeeping operation or \$608 per hive. Details on land, buildings, and bee equipment and machinery investment are presented in Table 3.

**Table 3: Honey Production Enterprise Investment, Alberta, 2011**

<b>INVESTMENT SUMMARY:</b>		<b>Total \$</b>	<b>\$/Hive</b>	
Land	19.57 acres	24,419.64	22.20	
Buildings		154,527.68	140.49	
Bee Equipment		386,088.50	351.01	
Machinery		104,175.86	94.71	
<b>TOTAL INVESTMENT</b>		<b>669,211.68</b>	<b>608.41</b>	
<b>INVESTMENT DETAIL:</b>		Enterprise Value (\$)	Age (Years)	Depreciation (\$)
<b>Land</b>		<b>24,419.64</b>		
Honey House		115,228.57	14.50	5,761.43
Wintering Shed		0.00	0.00	0.00
Houses (25%)		19,888.39	21.07	994.42
Other Buildings		19,410.71	17.59	970.54
<b>Buildings Sub-Total</b>		<b>154,527.67</b>		<b>7,726.39</b>
Hives		257,275.00	10.60	29,586.63
Pallets		22,842.43	7.75	2,626.88
Fork Lift		1,892.86	1.64	151.43
Hive Feeders		6,162.86	7.71	708.73
Super Elevator		0.00	0.00	0.00
Uncapping Machines		8,194.79	8.43	655.58
Honey Extractor		19,414.29	14.29	1,553.14
Dryer/Heat Exchanger		964.29	1.93	77.14
Wax Spinner/Separator		4,750.00	8.64	380.00
Honey Tank and Pipe		8,642.86	13.11	993.93
Feed Tank		3,939.29	10.00	453.02
Storage Vessel		0.00	0.00	0.00
Boiler Furnace		1,907.14	8.14	152.57
Water System		0.00	0.00	0.00
Compressor		489.29	6.55	39.14
Pressure Washer		2,314.29	5.36	185.14
Fuel Tank		0.00	0.00	0.00
Scales		1,217.86	10.07	140.05
Barrels		3,347.07	2.29	384.91
Barrel Loader		0.00	0.00	0.00
Carts		596.43	8.00	68.59
Fencers/Shockers		1,182.43	13.75	135.98
Shop Tools		5,807.14	6.29	667.82
Staplers		440.00	3.64	50.60
Office Equipment		0.00	0.00	0.00
Lawn Mower		3,257.86	4.46	260.63
Over-Wintering Insulation		6,771.79	4.07	778.76
Miscellaneous Equipment		24,678.57	13.41	1,974.29
<b>Equipment Sub - Total</b>		<b>386,088.54</b>		<b>42,024.96</b>
Trucks		44,614.29	8.90	3,569.14
Tractors		0.00	0.00	0.00
Other Machinery		59,561.57	8.68	280.86
<b>Power Equipment Sub - Total</b>		<b>104,175.86</b>		<b>3,850.00</b>
<b>TOTAL INVESTMENT</b>		<b>669,211.71</b>		<b>53,601.35</b>

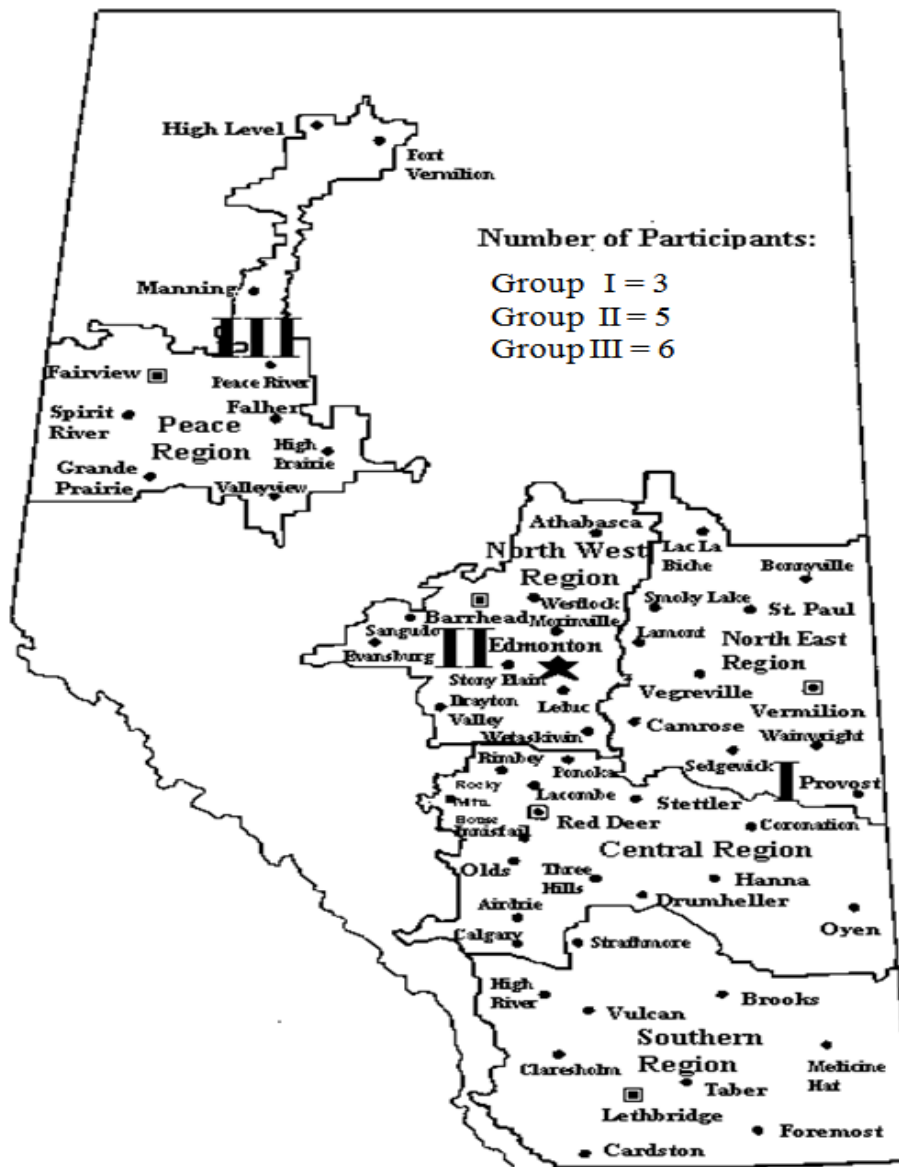


## SECTION IV

### HONEY PRODUCTION COSTS AND RETURNS BY REGIONS

The study sample of 14 beekeepers was divided into three groups by regions, i.e., Southern, Central and North East Regions (Group I); North West (Group II); and Peace River (Group III). The number of beekeepers in Group I was three (3). Group II, the North West Region had five (5) beekeepers and Group III, the Peace River Region had six (6). Figure 5 shows the distribution of the study sample by region.

**Figure 5: Distribution of Study Sample by Region**



**Group I (Southern, Central and North East Regions):**

Results presented in Table 4 are based on the averages for three (3) study participants. Average size of the beekeeping operation for Group I was 1,149 hives. Yield per hive for this group was about 151 pounds, about 27 pounds higher than the provincial average. Average honey production for this group was 173,827 pounds of marketable honey. Total value of production including wax/pollen and miscellaneous receipts for this group amounted to \$276,779 per average beekeeper or \$241 per hive (\$1.59 per pound).

Average variable costs for Group I participants were estimated at \$162,993 per study participant or \$142 per hive or \$0.94 per pound of honey produced. Average capital costs for Group I participants amounted to \$56,268 per operation, or \$49 per hive (\$0.32 per pound). Average total production cost for study participants in the Southern, Central and North East Regions was estimated at \$219,261 per beekeeping operation and \$191 per hive or \$1.26 per pound of honey produced in 2011. Details on total value of production, variable costs, capital costs, cash costs and total production cost for Group I participants are given in Table 4.

Honey prices during the last few years have increased, thus resulting into relatively positive returns. Gross margin for study participants in Group I (Southern, Central and North East Regions) was \$111,531 per beekeeping operation with 1,149 hives or \$97 per hive or \$0.64 per pound of honey produced. Average return to unpaid labour was positive at \$70,454 per operation and \$61 per hive (\$0.41 per pound). Return to investment for this group was positive at \$65,920 or \$57 per hive. Average return to equity was also positive at \$57,518 per beekeeping operation. In terms of return to equity per hive and per pound of honey produced, it amounted to \$50 and \$0.33 respectively. Details on gross margin, returns to unpaid labour, investment and equity are presented in Table 4, Section F.

Average total investment for land, buildings, bee equipment, and machinery for this group of honey producers is presented in Table 5. Average total investment for honey producers in this group amounted to \$648,818 per operation or \$563 per hive for the 2011 honey production year.

**Table 4: Honey Production Costs and Returns, Southern, Central and North East Regions, 2011**

(A)			<b>Total \$</b>	<b>\$/Hive</b>	<b>\$/lb</b>
1.	Bulk Honey Sales	168,405.33 lb	261,278.27	227.40	1.55
2.	Bulk Honey Inventory	747.00 lb	1,157.85	1.01	
3.	Consumer Pack Sales	2,639.00 lb	8,470.28	7.37	
4.	Consumer Pack Inventory	2,036.00 lb	0.00	0.00	
5.	Other Honey Sales	0.00 lb	0.00	0.00	
6.	Wax/Pollen/Other Sales	2,648.33 lb	5,668.25	4.93	
7.	Bee Sales		0.00	0.00	
8.	Crop Insurance Receipts		0.00	0.00	
9.	Miscellaneous Receipts		204.36	0.18	
10.	Less: Honey Purchase for Resale		0.00	0.00	
<b>VALUE OF PRODUCTION</b>			<b>276,779.01</b>	<b>240.89</b>	<b>1.59</b>
(B)					
1.	Bee Purchases - Package Bees		2,250.00	1.96	0.01
2.	Bee Purchases - Queens		10,642.33	9.26	0.06
3.	Bee Purchases - Nucs		0.00	0.00	0.00
4.	Freight and Trucking		3,672.33	3.20	0.02
5.	Sugar for Feeding		31,289.00	27.23	0.18
6.	Pollen Supplement Feeding		1,053.33	0.92	0.01
7.	Medicinal Sugar/Bee Repellent		9,406.33	8.19	0.05
8.	Product and Crop Insurance		5,322.00	4.63	0.03
9.	Fuel		16,300.33	14.19	0.09
10.	Repairs - Machine		6,148.33	5.35	0.04
11.	Repairs - Buildings and Improvements		3,370.33	2.93	0.02
12.	Utilities and Heating Fuel		11,435.33	9.95	0.07
13.	Custom Work and Machine Rental		647.00	0.56	0.00
14.	Assoc. Dues, Prof'l Fees, Promotion and Travel		3,745.67	3.26	0.02
15.	Small Tools, Supplies and Miscellaneous Expenses		7,623.67	6.64	0.04
16.	Operating Interest		350.00	0.30	0.00
17.	Paid Labour and Benefits	2,173.76 hours	36,800.67	32.03	0.21
18.	Unpaid Labour	1,232.00 hours	12,936.00	11.26	0.07
<b>VARIABLE COSTS</b>			<b>162,992.65</b>	<b>141.86</b>	<b>0.94</b>
(C)					
1.	Land Rent/Lease, Bldg. Rent and Forage Access		1,528.33	1.33	0.01
2.	Taxes, Licences and General Insurance		5,261.33	4.58	0.03
3.	Equipment and Building a) Depreciation		41,077.11	35.75	0.24
	b) Lease Payments		0.00	0.00	0.00
4.	Paid Capital Interest		8,401.50	7.31	0.05
<b>TOTAL CAPITAL COSTS</b>			<b>56,268.27</b>	<b>48.97</b>	<b>0.32</b>
(D)	<b>CASH COSTS</b>	<b>(B+C-B18-C3a)</b>	<b>165,247.81</b>	<b>143.82</b>	<b>0.95</b>
(E)	<b>TOTAL PRODUCTION COSTS</b>	<b>(B+C)</b>	<b>219,260.92</b>	<b>190.83</b>	<b>1.26</b>
(F)	<b>GROSS MARGIN</b>	<b>(A-D)</b>	<b>111,531.20</b>	<b>97.07</b>	<b>0.64</b>
	<b>RETURN TO UNPAID LABOUR</b>	<b>(A-E+B18)</b>	<b>70,454.09</b>	<b>61.32</b>	<b>0.41</b>
	<b>RETURN TO INVESTMENT</b>	<b>(A-E+C4) 10.2%</b>	<b>65,919.59</b>	<b>57.37</b>	<b>0.38</b>
	<b>RETURN TO EQUITY</b>	<b>(A-E)</b>	<b>57,518.09</b>	<b>50.06</b>	<b>0.33</b>
<b>MANAGEMENT</b>					
	Number of Hives			1,149.00	
	Average Yield per Hive (lb)			151.29	
	Honey Produced (lb)			173,827.33	

**Table 5: Honey Production Enterprise Investment, Southern, Central and North East Regions, 2011**

<b>INVESTMENT SUMMARY:</b>		<b>Total \$</b>	<b>\$/Hive</b>	
Land	33 acres	48,666.67	42.36	
Buildings		350,573.33	305.11	
Bee Equipment		165,460.33	144.00	
Machinery		82,118.00	71.47	
<b>TOTAL INVESTMENT</b>		<b>646,818.33</b>	<b>562.94</b>	
<b>INVESTMENT DETAIL:</b>		<b>Enterprise Value (\$)</b>	<b>Age (Years)</b>	<b>Depreciation (\$)</b>
<b>Land</b>		<b>48,666.67</b>		
Honey House		281,666.67	24.33	14,083.33
Wintering Shed		0.00	0.00	0.00
Houses (25%)		52,500.00	21.67	2,625.00
Other Buildings		16,406.67	15.39	820.33
<b>Buildings Sub-Total</b>		<b>350,573.34</b>		<b>17,528.66</b>
Hives		45,833.33	8.33	5,270.83
Pallets		2,000.00	6.67	230.00
Fork Lift		0.00	0.00	0.00
Hive Feeders		4,016.67	4.98	461.92
Super Elevator		0.00	0.00	0.00
Uncapping Machines		2,509.00	5.67	200.72
Honey Extractor		19,933.33	22.00	1,594.67
Dryer/Heat Exchanger		0.00	0.00	0.00
Wax Spinner/Separator		6,500.00	7.67	520.00
Honey Tank and Pipe		6,166.67	15.00	709.17
Feed Tank		5,800.00	12.67	667.00
Storage Vessel		0.00	0.00	0.00
Boiler Furnace		3,666.67	1.00	293.33
Water System		0.00	0.00	0.00
Compressor		533.33	4.89	42.67
Pressure Washer		2,833.33	3.00	226.67
Fuel Tank		0.00	0.00	0.00
Scales		266.67	11.67	30.67
Barrels		1,733.33	6.00	199.33
Barrel Loader		0.00	0.00	0.00
Carts		833.33	11.33	95.83
Fencers/Shockers		3,368.00	60.00	387.32
Shop Tools		9,500.00	3.33	1,092.50
Staplers		800.00	0.00	92.00
Office Equipment		0.00	0.00	0.00
Lawn Mower		1,333.33	3.67	106.67
Over-Wintering Insulation		4,166.67	1.67	479.17
Miscellaneous Equipment		43,666.67	11.00	3,493.33
<b>Equipment Sub - Total</b>		<b>165,460.33</b>		<b>16,193.80</b>
Trucks		50,133.33	7.98	4,010.67
Tractors		0.00	0.00	0.00
Other Machinery		31,984.67	4.73	764.00
<b>Power Equipment Sub - Total</b>		<b>82,118.00</b>		<b>4,774.67</b>
<b>TOTAL INVESTMENT</b>		<b>646,818.34</b>		<b>38,497.13</b>

**Group II (North West Region):**

Information presented in Table 6 is based on the averages of five (5) study participants. On average, the number of hives for this group was 1,022 with average yield being 150 pounds per hive. Honey production for Group II study participants was almost 26 pounds per hive higher than the provincial average. Amount of honey produced by an average participant in Group II was 152,837 pounds. Average total value of production including wax/pollen and miscellaneous receipts for this group was \$326,048 per operation and \$319 per hive or \$2.13 per pound of honey produced.

Variable costs for Group II participants in the North West Region amounted \$166,454 per operation and \$163 per hive or \$1.09 per pound. When capital costs were added to variable costs, average total production cost was estimated at \$248,399 per average beekeeper in this group and \$243 per hive or \$1.63 per pound of honey produced.

Gross margin was \$152,276 per beekeeping operation in Group II. It was estimated at \$149 per hive or \$1.00 per pound for honey produced. Return to unpaid labour for these study participants was \$89,982 on average or \$88 per hive (\$0.59 per pound). Average returns to investment and equity were \$83,578 and \$77,649 respectively. In terms of returns per hive, these were estimated at \$82 (\$0.55 per pound) for return to investment and \$76 (\$0.51 per pound) for return to equity.

Details on honey sales (returns), variable and capital costs and management indicators are presented in Table 6.

Average total investment for land, buildings, bee equipment, and machinery (vehicles) for Group II study participants (North West Region) amounted to \$673,709 per operation or \$659 per hive. Details on investment and investment costs for this group are presented in Table 7.

**Table 6: Honey Production Costs and Returns, North West Region, 2011**

(A)		Total \$	\$/Hive	\$/lb
1. Bulk Honey Sales	143,755.00 lb	227,271.30	222.38	1.58
2. Bulk Honey Inventory	0.00 lb	0.00	0.00	
3. Consumer Pack Sales	9,012.00 lb	26,966.00	26.39	
4. Consumer Pack Inventory	70.00 lb	192.50	0.19	
5. Other Honey Sales	0.00 lb	0.00	0.00	
6. Wax/Pollen/Other Sales	2,808.68 lb	7,253.27	7.10	
7. Bee Sales		0.00	0.00	
8. Crop Insurance Receipts		1,850.60	1.81	
9. Miscellaneous Receipts		114.00	0.11	
10. Less: Honey Purchase for Resale		62,400.00	61.06	
<b>VALUE OF PRODUCTION</b>		<b>326,047.67</b>	<b>319.04</b>	<b>2.13</b>
(B)				
1. Bee Purchases - Package Bees		2,507.00	2.45	
2. Bee Purchases - Queens		7,923.40	7.75	
3. Bee Purchases - Nucs		0.00	0.00	
4. Freight and Trucking		3,407.90	3.33	
5. Sugar for Feeding		28,273.00	27.66	
6. Pollen Supplement Feeding		1,900.40	1.86	
7. Medicinal Sugar/Bee Repellent		10,882.40	10.65	
8. Product and Crop Insurance		4,912.40	4.81	
9. Fuel		9,742.43	9.53	
10. Repairs - Machine		8,696.80	8.51	
11. Repairs - Buildings and Improvements		3,697.52	3.62	
12. Utilities and Heating Fuel		6,787.77	6.64	
13. Custom Work and Machine Rental		151.00	0.15	
14. Assoc. Dues, Prof'l Fees, Promotion and Travel		6,678.91	6.54	
15. Small Tools, Supplies and Miscellaneous Expenses		14,622.15	14.31	
16. Operating Interest		1,360.60	1.33	
17. Paid Labour and Benefits	2,536.20 hours	42,577.20	41.66	
18. Unpaid Labour	1,174.60 hours	12,333.30	12.07	
<b>VARIABLE COSTS</b>		<b>166,454.18</b>	<b>162.87</b>	<b>1.09</b>
(C)				
1. Land Rent/Lease, Bldg. Rent and Forage Access		1,069.00	1.05	
2. Taxes, Licences and General Insurance		12,652.82	12.38	
3. Equipment and Building a) Depreciation		62,293.63	60.95	
b) Lease Payments		0.00	0.00	
4. Paid Capital Interest		5,929.20	5.80	
<b>TOTAL CAPITAL COSTS</b>		<b>81,944.65</b>	<b>80.18</b>	<b>0.54</b>
(D)	<b>CASH COSTS (B+C-B18-C3a)</b>	<b>173,771.90</b>	<b>170.03</b>	<b>1.14</b>
(E)	<b>TOTAL PRODUCTION COSTS (B+C)</b>	<b>248,398.83</b>	<b>243.05</b>	<b>1.63</b>
(F)	<b>GROSS MARGIN (A-D)</b>	<b>152,275.77</b>	<b>149.00</b>	<b>1.00</b>
	<b>RETURN TO UNPAID LABOUR (A-E+B18)</b>	<b>89,982.14</b>	<b>88.05</b>	<b>0.59</b>
	<b>RETURN TO INVESTMENT (A-E+C4) 14.9%</b>	<b>83,578.04</b>	<b>81.78</b>	<b>0.55</b>
	<b>RETURN TO EQUITY (A-E)</b>	<b>77,648.84</b>	<b>75.98</b>	<b>0.51</b>
<b>MANAGEMENT</b>				
	Number of Hives		1,022.00	
	Average Yield per Hive (lb)		149.55	
	Honey Produced (lb)		152,837.00	

**Table 7: Honey Production Enterprise Investment, North West Region, 2011**

<b>INVESTMENT SUMMARY:</b>		<b>Total \$</b>	<b>\$/Hive</b>	
Land	11.6 acres	16,700.00	16.34	
Buildings		143,313.50	140.23	
Bee Equipment		437,813.80	428.39	
Machinery		75,881.60	74.25	
<b>TOTAL INVESTMENT</b>		<b>673,708.90</b>	<b>659.21</b>	
<b>INVESTMENT DETAIL:</b>		<b>Enterprise Value (\$)</b>	<b>Age (Years)</b>	<b>Depreciation (\$)</b>
<b>Land</b>		<b>16,700.00</b>		
Honey House		97,640.00	10.40	4,882.00
Wintering Shed		0.00	0.00	0.00
Houses (25%)		16,187.50	32.00	809.38
Other Buildings		29,486.00	23.88	1,474.30
<b>Buildings Sub-Total</b>		<b>143,313.50</b>		<b>7,165.68</b>
Hives		272,690.00	12.49	31,359.35
Pallets		56,802.80	7.20	6,532.32
Fork Lift		0.00	0.00	0.00
Hive Feeders		3,086.00	8.60	354.89
Super Elevator		0.00	0.00	0.00
Uncapping Machines		6,600.00	11.80	528.00
Honey Extractor		23,600.00	13.40	1,888.00
Dryer/Heat Exchanger		2,000.00	3.40	160.00
Wax Spinner/Separator		5,500.00	11.00	440.00
Honey Tank and Pipe		11,800.00	15.40	1,357.00
Feed Tank		5,750.00	11.00	661.25
Storage Vessel		0.00	0.00	0.00
Boiler Furnace		2,080.00	11.00	166.40
Water System		0.00	0.00	0.00
Compressor		640.00	5.20	51.20
Pressure Washer		3,660.00	5.20	292.80
Fuel Tank		0.00	0.00	0.00
Scales		1,300.00	8.40	149.50
Barrels		3,755.00	1.60	431.82
Barrel Loader		0.00	0.00	0.00
Carts		730.00	8.20	83.95
Fencers/Shockers		600.00	2.00	69.00
Shop Tools		5,060.00	5.40	581.90
Staplers		232.00	4.80	26.68
Office Equipment		0.00	0.00	0.00
Lawn Mower		6,572.00	4.10	525.76
Over-Wintering Insulation		13,356.00	5.00	1,535.94
Miscellaneous Equipment		12,000.00	11.86	960.00
<b>Equipment Sub - Total</b>		<b>437,813.80</b>		<b>48,155.76</b>
Trucks		47,820.00	12.91	3,825.60
Tractors		0.00	0.00	0.00
Other Machinery		28,061.60	11.89	184.00
<b>Power Equipment Sub - Total</b>		<b>75,881.60</b>		<b>4,009.60</b>
<b>TOTAL INVESTMENT</b>		<b>673,708.90</b>		<b>59,331.04</b>

**Group III (Peace River Region):**

Six (6) honey producers provided detailed information on their operations from the Peace River Region. Group averages for these study participants resulted in 1,140 hives per operation. Average yield for producers in the Peace Region was 136 pounds per hive, about 12 pounds higher than the provincial average. Average total value of production including wax/pollen and miscellaneous receipts for this group amounted to \$286,892 per beekeeping operation or \$252 per hive (\$1.85 per pound).

Average variable costs for the six honey producers in the Peace Region amounted to \$183,593 per operation and \$161 per hive or \$1.19 per pound. Average capital costs amounted to \$90,326 per operation, or \$79 per hive (\$0.58 per pound). When capital costs were added to variable costs, average total production cost amounted to \$273,919 per average beekeeper in this group and \$240 per hive or \$1.77 per pound of honey produced. Details on total value of production, variable costs, capital costs, cash costs and total production cost for the six honey producers in the Peace Region are presented in Table 8.

Average gross margin for the beekeepers in the Peace River Region was positive at \$94,449 per beekeeper. Gross margin per hive was \$83 and \$0.61 per pound. Return to unpaid labour was positive at \$26,789 per average beekeeping operation and \$23 per hive (\$0.17 per pound of honey produced). Average return to investment for this group of honey producers was estimated at \$15,893 per beekeeping operation, \$14 per hive or \$0.10 per pound of honey produced. Return to equity in the Peace Region was estimated at \$12,973 per average beekeeping operation. In terms of return to equity per hive, it was positive at \$11 and \$0.08 per pound of honey produced. Details on gross margin and returns to unpaid labour, investment and equity are presented in Table 8.

Investment for land, buildings, bee equipment, machinery and vehicles for the six study participants in the Peace River Region amounted to \$676,661 per beekeeping operation or \$593 per hive. Details on land, buildings, and bee equipment and machinery investments for the beekeepers in the Peace River Region are presented in Table 9.



**Table 8: Honey Production Costs and Returns, Peace River Region, 2011**

(A)		<b>Total \$</b>	<b>\$/Hive</b>	<b>\$/lb</b>
1. Bulk Honey Sales	13,2887.76 lb	205,347.19	180.08	1.55
2. Bulk Honey Inventory	6,081.67 lb	9,479.08	8.31	
3. Consumer Pack Sales	662.17 lb	1,417.67	1.24	
4. Consumer Pack Inventory	14,858.17 lb	24,344.34	21.35	
5. Other Honey Sales	419.33 lb	471.90	0.41	
6. Wax/Pollen/Other Sales	2,928.93 lb	12,476.42	10.94	
7. Bee Sales		0.00	0.00	
8. Crop Insurance Receipts		29,602.00	25.96	
9. Miscellaneous Receipts		3,753.17	3.29	
10. Less: Honey Purchase for Resale		0.00	0.00	
<b>VALUE OF PRODUCTION</b>		<b>286,891.77</b>	<b>251.59</b>	<b>1.85</b>
(B)				
1. Bee Purchases - Package Bees		0.00	0.00	
2. Bee Purchases - Queens		7,889.33	6.92	
3. Bee Purchases - Nucs		4,100.00	3.60	
4. Freight and Trucking		6,402.81	5.61	
5. Sugar for Feeding		31,239.44	27.40	
6. Pollen Supplement Feeding		1,233.67	1.08	
7. Medicinal Sugar/Bee Repellent		6,785.92	5.95	
8. Product and Crop Insurance		3,786.83	3.32	
9. Fuel		15,631.26	13.71	
10. Repairs - Machine		13,329.68	11.69	
11. Repairs - Buildings and Improvements		4,505.00	3.95	
12. Utilities and Heating Fuel		6,420.00	5.63	
13. Custom Work and Machine Rental		2,956.00	2.59	
14. Assoc. Dues, Prof'l Fees, Promotion and Travel		6,810.05	5.97	
15. Small Tools, Supplies and Miscellaneous Expenses		14,998.47	13.15	
16. Operating Interest		4,864.00	4.27	
17. Paid Labour and Benefits	2,691.92 hours	38,824.13	34.05	
18. Unpaid Labour	1,315.83 hours	13,816.22	12.12	
<b>VARIABLE COSTS</b>		<b>183,592.81</b>	<b>161.00</b>	<b>1.19</b>
(C)				
1. Land Rent/Lease, Bldg. Rent and Forage Access		5,463.17	4.79	
2. Taxes, Licences and General Insurance		14,282.39	12.52	
3. Equipment and Building a) Depreciation		67,660.21	59.33	
b) Lease Payments		0.00	0.00	
4. Paid Capital Interest		2,920.33	2.56	
<b>TOTAL CAPITAL COSTS</b>		<b>90,326.10</b>	<b>79.21</b>	<b>0.58</b>
(D)	<b>CASH COSTS</b>	<b>(B+C-B18-C3a)</b>	<b>192,442.48</b>	<b>168.76</b>
(E)	<b>TOTAL PRODUCTION COSTS</b>	<b>(B+C)</b>	<b>273,918.91</b>	<b>240.21</b>
(F)	<b>GROSS MARGIN</b>	<b>(A-D)</b>	<b>94,449.29</b>	<b>82.83</b>
	<b>RETURN TO UNPAID LABOUR</b>	<b>(A-E+B18)</b>	<b>26,789.08</b>	<b>23.49</b>
	<b>RETURN TO INVESTMENT</b>	<b>(A-E+C4) 2.4%</b>	<b>15,893.19</b>	<b>13.94</b>
	<b>RETURN TO EQUITY</b>	<b>(A-E)</b>	<b>12,972.86</b>	<b>11.38</b>
<b>MANAGEMENT</b>				
	Number of Hives		1,140.33	
	Average Yield per Hive (lb)		135.85	
	Honey Produced (lb)		154,909.09	

**Table 9: Honey Production Enterprise Investment, Peace River Region, 2011**

<b>INVESTMENT SUMMARY:</b>		<b>Total \$</b>	<b>\$/Hive</b>
Land	19.5 acres	18,729.17	16.42
Buildings		65,850.00	57.75
Bee Equipment		453,298.17	397.51
Machinery		138,783.33	121.70
<b>TOTAL INVESTMENT</b>		<b>676,660.67</b>	<b>593.39</b>

<b>INVESTMENT DETAIL:</b>	<b>Enterprise Value (\$)</b>	<b>Age (Years)</b>	<b>Depreciation (\$)</b>
<b>Land</b>	<b>18,729.17</b>		
Honey House	46,666.67	13.00	2,333.33
Wintering Shed	0.00	0.00	0.00
Houses (25%)	6,666.67	11.67	333.33
Other Buildings	12,516.67	13.44	625.83
<b>Buildings Sub-Total</b>	<b>65,850.01</b>		<b>3,292.49</b>
Hives	350,150.00	10.17	40,267.25
Pallets	4,963.33	8.75	570.78
Fork Lift	4,416.67	3.83	353.33
Hive Feeders	9,800.00	8.33	1,127.00
Super Elevator	0.00	0.00	0.00
Uncapping Machines	12,366.67	7.00	989.33
Honey Extractor	15,666.67	11.17	1,253.33
Dryer/Heat Exchanger	583.33	1.67	46.67
Wax Spinner/Separator	3,250.00	7.17	260.00
Honey Tank and Pipe	7,250.00	10.25	833.75
Feed Tank	1,500.00	7.83	172.50
Storage Vessel	0.00	0.00	0.00
Boiler Furnace	883.33	9.33	70.67
Water System	0.00	0.00	0.00
Compressor	341.67	8.50	27.33
Pressure Washer	933.33	6.67	74.67
Fuel Tank	0.00	0.00	0.00
Scales	1,625.00	10.67	186.88
Barrels	3,814.00	1.00	438.61
Barrel Loader	0.00	0.00	0.00
Carts	366.67	6.17	42.17
Fencers/Shockers	575.00	0.42	66.13
Shop Tools	4,583.33	8.50	527.08
Staplers	433.33	4.50	49.83
Office Equipment	0.00	0.00	0.00
Lawn Mower	1,458.33	5.17	116.67
Over-Wintering Insulation	2,587.50	4.50	297.56
Miscellaneous Equipment	25,750.00	15.92	2,060.00
<b>Equipment Sub - Total</b>	<b>453,298.16</b>		<b>49,831.54</b>
Trucks	39,183.33	6.02	3,134.67
Tractors	0.00	0.00	0.00
Other Machinery	99,600.00	7.98	120.00
<b>Power Equipment Sub - Total</b>	<b>138,783.33</b>		<b>3,254.67</b>
<b>TOTAL INVESTMENT</b>		<b>676,660.67</b>	<b>56,378.70</b>

## SECTION V

### HONEY PRODUCTION COSTS AND RETURNS BY SIZE OF OPERATION

The study sample of 14 beekeepers was further divided into two groups by size of operation. The main objective of analyzing data by size of operation was to study the economies of scale, i.e., whether the size of operation had any effect on net returns and overall production costs. Following are the two groups by size of operation.

GROUP	SIZE OF OPERATION	NUMBER OF PARTICIPANTS	AVERAGE NUMBER OF HIVES PER BEEKEEPER
IV	Up to 1,000 Hives	9	495
V	Over 1,000 Hives	5	2,188
TOTAL		14	1,100

#### Group IV (Up to 1,000 Hives):

Table 10 presents the results for nine study participants in Group IV, i.e., up to 1,000 hives. The number of hives per average study participant for this group was 495. Number of hives owned by this group of participants ranged from 136 to 980 hives. In 2011, average honey production per hive for this group was 159 pounds, about 15 pounds per hive higher than the study sample. The total value of production (bulk honey sales, bulk honey inventory, consumer pack sales, consumer pack inventory, wax/pollen sales and other honey sales) amounted to \$147,075 per operation (\$297 per hive) or \$1.86 per pound of honey produced.

#### Variable Costs:

Average variable costs for this group of honey producers: i.e., up to 1,000 hives, are presented in Table 10. These costs amounted to \$95,813 per operation or \$193 per hive or \$1.21 per pound of honey produced in 2011. The most significant costs for this group of beekeepers were paid labour and benefits at \$28 per hive or \$0.17 per pound of honey produced followed by sugar for feeding, unpaid labour and benefits, small tools, supplies and miscellaneous expenses, repairs, bee purchases, fuel, utilities and heating fuel, medicinal sugar/bee repellent, freight and trucking.

**Capital Costs:**

Average land rent/lease, depreciation for buildings, bee equipment and vehicles, and capital interest paid by the nine study participants in Group IV amounted to \$40,289 or \$81 per hive or \$0.51 per pound of honey produced. Breakdown of capital costs is also shown in Table 10.

**Total Production Costs:**

Average total production cost per study participant was estimated at \$136,102 for honey operation with 495 hives. Production costs per hive and per pound of honey produced was \$275 and \$1.72 respectively.

**Management Indicators:**

Average gross margin (return to value of production over cash costs) for Group IV participants (up to 1,000 hives) was estimated at \$52,816 per beekeeping operation. It was \$107 per hive or \$0.67 per pound of honey produced. Average return to unpaid labour was positive at \$47 per hive or \$0.29 per pound of honey produced. Return to investment and equity were positive at \$28 and \$22 per hive, respectively. Average return to investment was estimated at 4 percent for honey producers with up to 1,000 hives in 2011. Details on cash, operator and family labour, capital costs, and management indicators are given in Table 10.

**Investment Costs:**

Average total investment for honey producers in the up to 1,000 hives group was \$340,669 per operation or \$688 per hive. Land area associated with the honey operation for this group was about 13 acres, valued at \$13,597 or \$1,046 per acre (\$27 per hive). Bee equipment investment was estimated at \$393 per hive, followed by buildings at \$176, and machinery including vehicles, at \$91 per hive. Table 11 presents details on land, buildings, bee equipment, machinery and vehicles investment for Group IV in 2011.

**Table 10: Honey Production Costs and Returns, By Size of Operation (up to 1,000 Hives), 2011**

(A)			Total \$	\$/Hive	\$/lb
1. Bulk Honey Sales	66,011.17 lb		105,827.76	213.60	1.56
2. Bulk Honey Inventory	4303.44 lb		6,705.34	13.53	
3. Consumer Pack Sales	6,327.78 lb		18,749.65	37.84	
4. Consumer Pack Inventory	2,013.00 lb		2,130.00	4.30	
5. Other Honey Sales	279.56 lb		314.60	0.63	
6. Wax/Pollen/Other Sales	1985.11 lb		8,927.78	18.02	
7. Bee Sales			0.00	0.00	
8. Crop Insurance Receipts			1,849.89	3.73	
9. Miscellaneous Receipts			2,570.23	5.19	
10. Less: Honey Purchase for Resale			0.00	0.00	
<b>VALUE OF PRODUCTION</b>			<b>147,075.25</b>	<b>296.86</b>	<b>1.86</b>
(B)					
1. Bee Purchases - Package Bees			2,142.78	4.33	
2. Bee Purchases - Queens			4,551.56	9.19	
3. Bee Purchases - Nucs			1,233.33	2.49	
4. Freight and Trucking			3,391.04	6.84	
5. Sugar for Feeding			12,773.96	25.78	
6. Pollen Supplement Feeding			310.00	0.63	
7. Medicinal Sugar/Bee Repellent			4,746.72	9.58	
8. Product and Crop Insurance			2,927.67	5.91	
9. Fuel			7,047.08	14.22	
10. Repairs - Machine			6,839.79	13.81	
11. Repairs - Buildings and Improvements			2,616.40	5.28	
12. Utilities and Heating Fuel			5,186.98	10.47	
13. Custom Work and Machine Rental			1,064.11	2.15	
14. Assoc. Dues, Prof'l Fees, Promotion and Travel			2,844.31	5.74	
15. Small Tools, Supplies and Miscellaneous Expenses			11,132.40	22.47	
16. Operating Interest			931.11	1.88	
17. Paid Labour and Benefits	897.61 hours		13,772.67	27.80	
18. Unpaid Labour	1,171.56 hours		12,301.38	24.83	
<b>VARIABLE COSTS</b>			<b>95,813.29</b>	<b>193.39</b>	<b>1.21</b>
(C)					
1. Land Rent/Lease, Bldg. Rent and Forage Access			1,136.00	2.29	
2. Taxes, Licences and General Insurance			6,730.94	13.59	
3. Equipment and Building a) Depreciation			29,541.49	59.63	
b) Lease Payments			0.00	0.00	
4. Paid Capital Interest			2,880.72	5.81	
<b>TOTAL CAPITAL COSTS</b>			<b>40,289.15</b>	<b>81.32</b>	<b>0.51</b>
(D)	<b>CASH COSTS</b>	<b>(B+C-B18-C3a)</b>	<b>94,259.57</b>	<b>190.25</b>	<b>1.19</b>
(E)	<b>TOTAL PRODUCTION COSTS</b>	<b>(B+C)</b>	<b>136,102.44</b>	<b>274.71</b>	<b>1.72</b>
(F)	<b>GROSS MARGIN</b>	<b>(A-D)</b>	<b>52,815.68</b>	<b>106.60</b>	<b>0.67</b>
	<b>RETURN TO UNPAID LABOUR</b>	<b>(A-E+B18)</b> 4.1%	<b>23,274.19</b>	<b>46.98</b>	<b>0.29</b>
	<b>RETURN TO INVESTMENT</b>	<b>(A-E+C4)</b>	<b>13,853.53</b>	<b>27.96</b>	<b>0.18</b>
	<b>RETURN TO EQUITY</b>	<b>(A-E)</b>	<b>10,972.81</b>	<b>22.15</b>	<b>0.14</b>
<b>MANAGEMENT</b>					
	Number of Hives			495.44	
	Average Yield per Hive (lb)			159.32	
	Honey Produced (lb)			78,934.95	

**Table 11: Honey Production Enterprise Investment, By Size of Operation (up to 1,000 Hives), 2011**

<b>INVESTMENT SUMMARY:</b>		<b>Total \$</b>	<b>\$/Hive</b>
Land	12.56 acres	13,597.22	27.44
Buildings		87,269.44	176.15
Bee Equipment		194,628.33	392.84
Machinery		45,173.56	91.18
<b>TOTAL INVESTMENT</b>		<b>340,668.55</b>	<b>687.61</b>

<b>INVESTMENT DETAIL:</b>	Enterprise Value (\$)	Age (Years)	Depreciation (\$)
<b>Land</b>	<b>13,597.22</b>		
Honey House	53,133.33	12.00	2,656.67
Wintering Shed	0.00	0.00	0.00
Houses (25%)	20,347.22	21.22	1,017.36
Other Buildings	13,788.89	12.58	689.44
<b>Buildings Sub-Total</b>	<b>87,269.44</b>		<b>4,363.47</b>
Hives	128,044.44	11.44	14,725.11
Pallets	1,893.78	7.78	217.78
Fork Lift	1,555.56	1.78	124.44
Hive Feeders	5,497.78	7.33	632.24
Super Elevator	0.00	0.00	0.00
Uncapping Machines	8,080.78	8.22	646.46
Honey Extractor	9,533.33	15.67	762.67
Dryer/Heat Exchanger	0.00	0.00	0.00
Wax Spinner/Separator	1,722.22	7.56	137.78
Honey Tank and Pipe	3,777.78	13.11	434.44
Feed Tank	1,183.33	11.56	136.08
Storage Vessel	0.00	0.00	0.00
Boiler Furnace	1,577.78	6.33	126.22
Water System	0.00	0.00	0.00
Compressor	222.22	6.67	17.78
Pressure Washer	1,688.89	5.67	135.11
Fuel Tank	0.00	0.00	0.00
Scales	661.11	10.22	76.03
Barrels	763.89	2.67	87.85
Barrel Loader	0.00	0.00	0.00
Carts	494.44	7.67	56.86
Fencers/Shockers	900.44	21.11	103.55
Shop Tools	4,033.33	6.89	463.83
Staplers	351.11	4.00	40.38
Office Equipment	0.00	0.00	0.00
Lawn Mower	1,484.44	5.22	118.76
Over-Wintering Insulation	6,883.89	4.67	791.65
Miscellaneous Equipment	14,277.78	12.92	1,142.22
<b>Equipment Sub - Total</b>	<b>194,628.32</b>		<b>20,977.24</b>
Trucks	24,677.78	9.50	1,974.22
Tractors	0.00	0.00	0.00
Other Machinery	20,495.78	6.78	298.22
<b>Power Equipment Sub - Total</b>	<b>45,173.56</b>		<b>2,272.44</b>
<b>TOTAL INVESTMENT</b>	<b>340,668.54</b>		<b>27,613.15</b>

**Group V (Over 1,000 Hives):**

Average number of hives for this group of five (5) beekeepers was 2,188 hives, with an average production of 138 pounds per hive. The number of hives owned by this group of participants ranged from 1,140 to 3,000. Section A in Table 12 presents total value of production (bulk honey sales, consumer pack sales, and honey held in inventory, wax/pollen sales and miscellaneous receipts, and other honey sales). It was estimated at \$571,650 per beekeeping operation or \$261 per hive (\$1.90 per pound).

**Variable Costs:**

Average variable costs for Group V (Over 1,000 hives) of beekeepers were estimated at \$312,097 per beekeeping operation or \$143 per hive (\$1.04 per pound). Average paid labour and benefits were \$40 per hive, the largest expense item in variable costs. Expenses associated with sugar for feeding, fuel, machine and building repairs and bee purchases were the next four largest expense items.

**Capital Costs:**

Average land rent/lease, depreciation for buildings, bee equipment and vehicles, and capital interest paid by the five study participants in Group V amounted to \$151,576 or \$69 per hive (\$0.50 per pound of honey produced). Breakdown of capital costs is also shown in Table 12.

**Total Production Costs:**

Average total production costs for honey producers in this size group, were \$463,674 per average beekeeping operation. In terms of per hive and per pound of honey produced, average production cost for this group was \$212 and \$1.54 respectively.

**Management Indicators:**

Gross margin for Group V participants (Over to 1,000 hives) was estimated at \$237,465 per average beekeeping operation. It was \$109 per hive or \$0.79 per pound of honey produced. Average return to unpaid labour was positive at \$56 per hive or \$0.41 per pound of honey produced. Return to investment and equity were positive at \$54 and \$49 per hive, respectively. Average return to investment was estimated at approximately 11 percent for honey producers with over 1,000 hives in 2011. Details on management indicators are presented in Table 12.

**Investment Costs:**

Average total investment for the study participants in Group V (Over to 1,000 hives) was \$1,260,589 per operation or \$576 per hive. Land area associated with the honey operation for this group was about 32 acres, valued at \$43,900 or \$1,372 per acre (\$20 per hive). Bee equipment investment was estimated at \$334 per hive, followed by buildings at \$126, and machinery including vehicles, at \$96 per hive. Details on land, buildings, bee equipment, machinery and vehicles investment are presented in Table 13.



**Table 12: Honey Production Costs and Returns, By Size of Operation (over 1,000 Hives), 2011**

(A)		Total \$	\$/Hive	\$/lb
1. Bulk Honey Sales	285,443.40 lb	439,964.92	201.08	1.54
2. Bulk Honey Inventory	0.00 lb	0.00	0.00	
3. Consumer Pack Sales	0.00 lb	0.00	0.00	
4. Consumer Pack Inventory	15,498.00 lb	25,571.70	11.69	
5. Other Honey Sales	0.00 lb	0.00	0.00	
6. Wax/Pollen/Other Sales	4,339.20 lb	9,555.92	4.37	
7. Bee Sales		0.00	0.00	
8. Crop Insurance Receipts		34,043.20	15.56	
9. Miscellaneous Receipts		114.00	0.05	
10. Less: Honey Purchase for Resale		62,400.00	28.52	
<b>VALUE OF PRODUCTION</b>		<b>571,649.74</b>	<b>261.27</b>	<b>1.90</b>
(B)				
1. Bee Purchases - Package Bees		0.00	0.00	
2. Bee Purchases - Queens		15,583.20	7.12	
3. Bee Purchases - Nucs		2,700.00	1.23	
4. Freight and Trucking		7,190.80	3.29	
5. Sugar for Feeding		61,540.60	28.13	
6. Pollen Supplement Feeding		3,454.80	1.58	
7. Medicinal Sugar/Bee Repellent		16,125.20	7.37	
8. Product and Crop Insurance		7,380.00	3.37	
9. Fuel		25,595.40	11.70	
10. Repairs - Machine		16,069.80	7.34	
11. Repairs - Buildings and Improvements		6,416.20	2.93	
12. Utilities and Heating Fuel		12,016.40	5.49	
13. Custom Work and Machine Rental		2,171.00	0.99	
14. Assoc. Dues, Prof'l Fees, Promotion and Travel		11,978.60	5.47	
15. Small Tools, Supplies and Miscellaneous Expenses		17,156.20	7.84	
16. Operating Interest		5,731.40	2.62	
17. Paid Labour and Benefits	5,455.06 hours	86,455.75	39.51	
18. Unpaid Labour	1,384.00 hours	14,532.00	6.64	
<b>VARIABLE COSTS</b>		<b>312,097.35</b>	<b>142.64</b>	<b>1.04</b>
(C)				
1. Land Rent/Lease, Bldg. Rent and Forage Access		6,497.00	2.97	
2. Taxes, Licences and General Insurance		20,832.80	9.52	
3. Equipment and Building a) Depreciation		114,957.46	52.54	
b) Lease Payments		0.00	0.00	
4. Paid Capital Interest		9,289.20	4.25	
<b>TOTAL CAPITAL COSTS</b>		<b>151,576.46</b>	<b>69.28</b>	<b>0.50</b>
(D)	<b>CASH COSTS (B+C-B18-C3a)</b>	<b>334,184.35</b>	<b>152.74</b>	<b>1.11</b>
(E)	<b>TOTAL PRODUCTION COSTS (B+C)</b>	<b>463,673.81</b>	<b>211.92</b>	<b>1.54</b>
(F)	<b>GROSS MARGIN (A-D)</b>	<b>237,465.39</b>	<b>108.53</b>	<b>0.79</b>
	<b>RETURN TO UNPAID LABOUR (A-E+B18)</b>	<b>122,507.93</b>	<b>55.99</b>	<b>0.41</b>
	<b>RETURN TO INVESTMENT (A-E+C4) 10.6%</b>	<b>117,265.13</b>	<b>53.59</b>	<b>0.39</b>
	<b>RETURN TO EQUITY (A-E)</b>	<b>107,975.93</b>	<b>49.35</b>	<b>0.36</b>
<b>MANAGEMENT</b>				
	Number of Hives		2,188.000	
	Average Yield per Hive (lb)		137.540	
	Honey Produced (lb)		300,941.400	

**Table 13: Honey Production Enterprise Investment, By Size of Operation (over 1,000 Hives), 2011**

<b>INVESTMENT SUMMARY:</b>		<b>Total \$</b>	<b>\$/Hive</b>	
Land	32.20 acres	43,900.00	20.06	
Buildings		275,592.50	125.96	
Bee Equipment		730,716.80	333.97	
Machinery		210,380.00	96.15	
<b>TOTAL INVESTMENT</b>		<b>1,260,589.30</b>	<b>576.14</b>	
<b>INVESTMENT DETAIL:</b>		<b>Enterprise Value (\$)</b>	<b>Age (Years)</b>	<b>Depreciation (\$)</b>
<b>Land</b>		<b>43,900.00</b>		
Honey House		227,000.00	19.00	11,350.00
Wintering Shed		0.00	0.00	0.00
Houses (25%)		19,062.50	20.80	953.13
Other Buildings		29,530.00	26.60	1,476.50
<b>Buildings Sub-Total</b>		<b>275,592.50</b>		<b>13,779.63</b>
Hives		489,890.00	9.09	56,337.35
Pallets		60,550.00	7.70	6,963.25
Fork Lift		2,500.00	1.40	200.00
Hive Feeders		7,360.00	8.40	846.40
Super Elevator		0.00	0.00	0.00
Uncapping Machines		8,400.00	8.80	672.00
Honey Extractor		37,200.00	11.80	2,976.00
Dryer/Heat Exchanger		2,700.00	5.40	216.00
Wax Spinner/Separator		10,200.00	10.60	816.00
Honey Tank and Pipe		17,400.00	13.10	2,001.00
Feed Tank		8,900.00	7.20	1,023.50
Storage Vessel		0.00	0.00	0.00
Boiler Furnace		2,500.00	11.40	200.00
Water System		0.00	0.00	0.00
Compressor		970.00	6.33	77.60
Pressure Washer		3,440.00	4.80	275.20
Fuel Tank		0.00	0.00	0.00
Scales		2,220.00	9.80	255.30
Barrels		7,996.80	1.60	919.63
Barrel Loader		0.00	0.00	0.00
Carts		780.00	8.60	89.70
Fencers/Shockers		1,690.00	0.50	194.35
Shop Tools		9,000.00	5.20	1,035.00
Staplers		600.00	3.00	69.00
Office Equipment		0.00	0.00	0.00
Lawn Mower		6,450.00	3.10	516.00
Over-Wintering Insulation		6,570.00	3.00	755.55
Miscellaneous Equipment		43,400.00	14.30	3,472.00
<b>Equipment Sub - Total</b>		<b>730,716.80</b>		<b>79,910.83</b>
Trucks		80,500.00	7.81	6,440.00
Tractors		0.00	0.00	0.00
Other Machinery		129,880.00	12.11	249.60
<b>Power Equipment Sub - Total</b>		<b>210,380.00</b>		<b>6,689.60</b>
<b>TOTAL INVESTMENT</b>		<b>1,260,589.30</b>		<b>100,380.06</b>

## SECTION VI

### SUMMARY - HONEY COSTS AND RETURNS BY REGION AND SIZE

This section provides a summary of the total value of production for the various groups by region and by size of operation (bulk honey sales and inventory, consumer pack sales and inventory, and any other honey sales, receipts from wax/pollen, crop insurance receipts, and miscellaneous income). It also provides estimates of cash costs, operator and family labour, capital costs and management indicators. Details on the honey cost and returns for the various groups by region and size of operation are presented in Table 14. Comparison of these costs and returns are also presented in Figure 6.

Average yield per hive for the study sample was 144 pounds during the 2011 production year. This was significantly higher than the provincial average of 124 pounds per hive. Group III (Peace River) had the lowest yield (about 136 pounds per hive). Honey producers in Group I (Southern, Central and North East Region) and Group II (North West) had comparable yields (about 151 and 150 pounds per hive respectively. Honey production per hive by size of operation was 159 pounds for beekeepers with up to 1,000 hives and 138 pounds for those with over 1,000 hives.

Average total value of production (bulk honey sales, other honey sales and miscellaneous income) was \$272 per hive for the study sample. It ranged from \$241 per hive in the Southern, Central and North East Regions to \$319 per hive in the North West Region. The producers in Group (II) North West Region on average sold their bulk honey for about three cents per pound higher compared to those in Southern, Central and North East Region (Group I) and Peace River Region (Groups III). By size of operation, average value of production was \$297 per hive for Group IV (up to 1,000 hives) and \$261 per hive for Group V (over 1,000 hives).

Average variable costs were estimated at \$157 per hive or \$1.09 per pound of honey produced for the study sample. It ranged from \$142 per hive in the Southern, Central and North East Regions to \$163 per hive in the North West Region. Expenses associated with sugar for feeding was estimated at \$64 per hive or \$0.44 cents per pound of honey produced. This translates to

about 40 percent of Total Variable Cost, 39 percent of Total Cash Costs or 28 percent of Total Production Costs. It ranged from \$59 per hive (41 percent of Total Cash Costs or 29 percent of Total Production Costs) in the Southern, Central and North East Regions to \$69 per hive in the North West Region (36 percent of Total Cash Costs or 26 percent of Total Production Costs). By size of operation, sugar for feeding and hired labour costs were \$54 per hive for Group IV (up to 1,000 hives) and \$68 per hive for Group V (over 1,000 hives).

Average total production cost was estimated at \$230 per hive for the study sample (\$1.60 per pound of honey produced). These costs ranged from \$191 per hive in the Southern, Central and North East Regions to \$243 per hive in the Peace River Region. By size of operation, total production cost was \$275 per hive (\$1.72 per pound) for honey producers with up to 1,000 hives and \$212 per hive (\$1.54 per pound) for those with over 1,000 hives.

The net returns were positive for the study sample and all groups (by regions and size of operation). Honey producers in the North West Region had the highest gross margin of \$149 per hive (\$1.00 per pound). It was \$97 in the Southern, Central and North East Region and \$83 per hive in the Peace River Region. Details on management indicators for the study sample, and all groups (by regions and size of operation) are presented in Table 14.

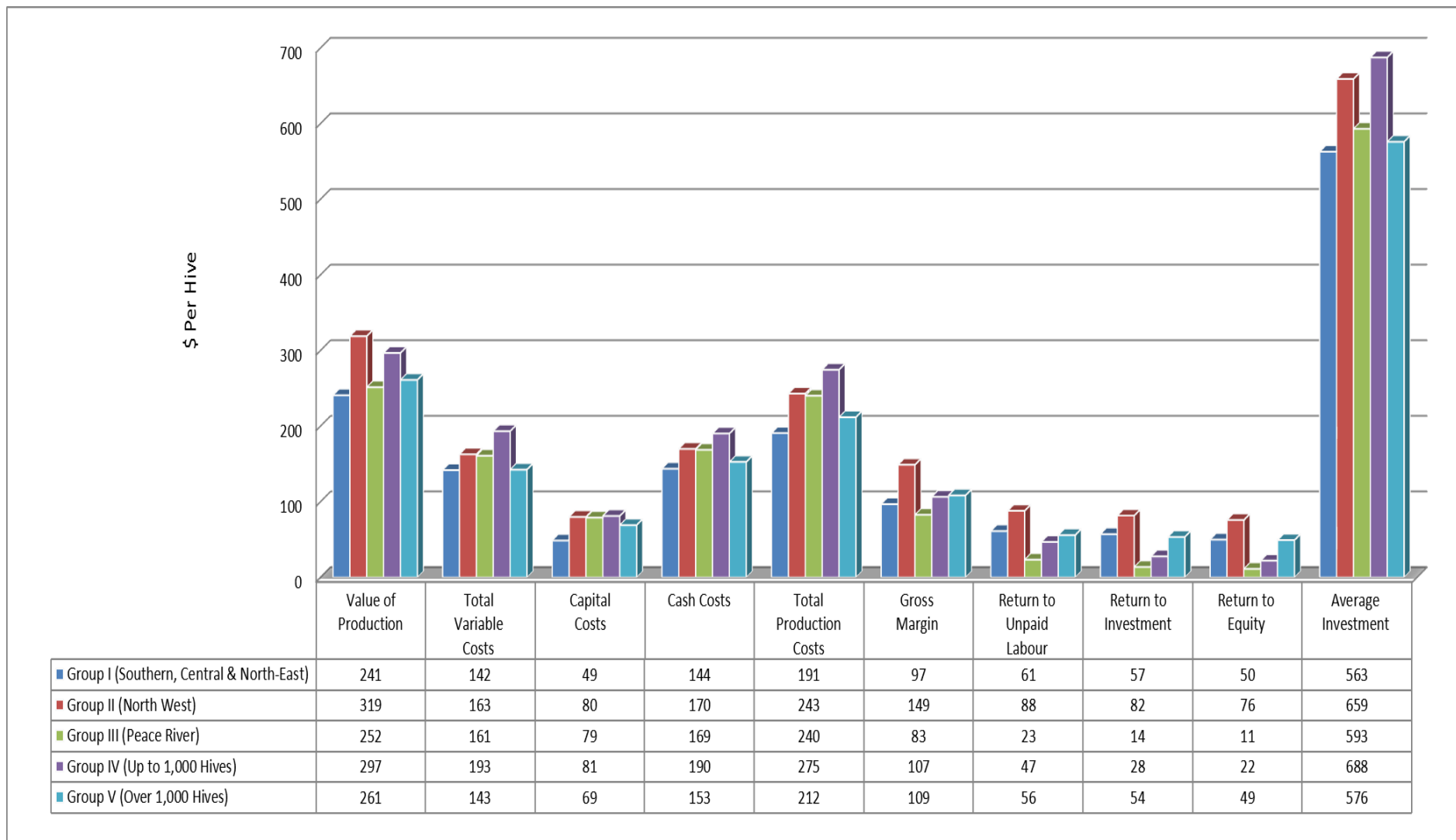
Honey producers with more than 1,000 hives in the sample made more money compared to those with up to 1000 hives. This may be due to the following reasons. The total value of production per pound of honey produced for producers with over 1,000 hives was 2 percent (\$0.04) higher than those with up to 1,000 hives. In addition, the total production costs per pound of honey produced for those with over 1,000 hives on average was lower by about 11 percent (\$0.18) compared to those with up to 1,000 hives.

As shown in Table 14, the average investment per hive for the study sample of 21 beekeepers was estimated at \$608. By regions, investment per hive ranged from \$563 for producers in Group I (Southern, Central and North East Region) to \$659 in Group II (North West Region). By size of operation, average investment per hive was \$688 for Group IV (up to 1,000 hives) and \$576 for Group V (over 1,000 hives).

**Table 14: Summary of Honey Production Costs and Returns by Regions and Size of Operation, 2011**

	ALBERTA		REGION						SIZE OF OPERATION			
			SOUTH, CENTRAL AND NORTH-EAST		NORTH-WEST		PEACE RIVER		UP TO 1,000 HIVES		OVER 1,000 HIVES	
Number of Producers	14		3		5		6		9		5	
Average Number of Hives	1,100		1,149		1,022		1,140		495		2,188	
Average Yield Per Hive (lb)	144		151.3		149.6		136		159		138	
Honey Produced (lb)	158,223		173,827		152,837		154,909		78,935		300,941	
	<b>\$/Hive</b>	<b>\$/lb</b>	<b>\$/Hive</b>	<b>\$/lb</b>	<b>\$/Hive</b>	<b>\$/lb</b>	<b>\$/Hive</b>	<b>\$/lb</b>	<b>\$/Hive</b>	<b>\$/lb</b>	<b>\$/Hive</b>	<b>\$/lb</b>
Bulk Honey Sales	204.71	1.42	227.40	1.50	222.38	1.49	180.08	1.33	213.60	1.34	201.08	1.46
Other Honey Sales/Inventory*	32.93	0.23	13.31	0.09	33.68	0.23	42.26	0.31	74.33	0.47	16.05	0.12
Miscellaneous Income**	33.93	0.24	0.18	0.00	62.98	0.42	29.25	0.22	8.92	0.06	44.13	0.32
<b>TOTAL VALUE OF PRODUCTION</b>	<b>271.57</b>	<b>1.89</b>	<b>240.89</b>	<b>1.59</b>	<b>319.04</b>	<b>2.13</b>	<b>251.59</b>	<b>1.85</b>	<b>296.86</b>	<b>1.86</b>	<b>261.27</b>	<b>1.90</b>
Feed – Sugar	27.45	0.19	27.23	0.18	27.66	0.18	27.40	0.20	25.78	0.16	28.13	0.20
Hired Labour	36.12	0.25	32.03	0.21	41.66	0.28	34.05	0.25	27.80	0.17	39.51	0.29
Operator and Family Labour	11.91	0.08	11.26	0.07	12.07	0.08	12.12	0.09	24.83	0.16	6.64	0.05
Other Variable Costs	81.86	0.57	71.34	0.47	81.48	0.54	87.44	0.64	114.98	0.72	68.36	0.50
Total Capital Costs	72.76	0.51	48.97	0.32	80.18	0.54	79.21	0.58	81.32	0.51	69.28	0.50
<b>TOTAL CASH COSTS</b>	<b>163.60</b>	<b>1.14</b>	<b>143.82</b>	<b>0.95</b>	<b>170.03</b>	<b>1.14</b>	<b>168.76</b>	<b>1.24</b>	<b>190.25</b>	<b>1.19</b>	<b>152.74</b>	<b>1.11</b>
<b>TOTAL PRODUCTION COSTS</b>	<b>230.10</b>	<b>1.60</b>	<b>190.83</b>	<b>1.26</b>	<b>243.05</b>	<b>1.63</b>	<b>240.21</b>	<b>1.77</b>	<b>274.71</b>	<b>1.72</b>	<b>211.92</b>	<b>1.54</b>
<b>GROSS MARGIN</b>	<b>107.97</b>	<b>0.75</b>	<b>97.07</b>	<b>0.64</b>	<b>149.00</b>	<b>1.00</b>	<b>82.83</b>	<b>0.61</b>	<b>106.60</b>	<b>0.67</b>	<b>108.53</b>	<b>0.79</b>
<b>RETURN TO UNPAID LABOUR</b>	<b>53.38</b>	<b>0.37</b>	<b>61.32</b>	<b>0.41</b>	<b>88.05</b>	<b>0.59</b>	<b>23.49</b>	<b>0.17</b>	<b>46.98</b>	<b>0.29</b>	<b>55.99</b>	<b>0.41</b>
<b>RETURN TO INVESTMENT</b>	<b>46.17</b>	<b>0.32</b>	<b>57.37</b>	<b>0.38</b>	<b>81.78</b>	<b>0.55</b>	<b>13.94</b>	<b>0.10</b>	<b>27.96</b>	<b>0.18</b>	<b>53.59</b>	<b>0.39</b>
<b>RETURN TO EQUITY</b>	<b>41.47</b>	<b>0.29</b>	<b>50.06</b>	<b>0.33</b>	<b>75.98</b>	<b>0.51</b>	<b>11.38</b>	<b>0.08</b>	<b>22.15</b>	<b>0.14</b>	<b>49.35</b>	<b>0.36</b>
Average Investment Per Hive (\$)	608.41	4.23	562.94	3.72	659.21	4.41	593.39	4.37	687.61	4.32	576.14	4.19
* Includes consumer pack sales, honey inventory and wax/pollen/other sales												
** Includes crop insurance and miscellaneous receipts												

**Figure 6: Honey Production Costs and Returns by Regions and Size, 2011 (\$ per Acre)**



## **SECTION VII**

### **COSTS AND RETURNS FOR POLLINATING HIVES IN ALBERTA, 2011**

Honeybees have been used for pollinating crops to improve yield and seed production for centuries. In Alberta, commercial use of honeybees to pollinate crops started about eighteen years ago with introduction of transgenic canola. Other crops for which bees have been used for pollination are borage, alfalfa and clover, etc. Over the last few years, the number of pollinating hives has more than tripled from about 20,000 hives in 1996 to about 75,000 hives in 2012. During the last few years the number of pollinating hives continued to increase as the area for transgenic canola and other crops expanded. However, due to some concerns regarding the markets for hybrid canola, demand for pollinating hives decreased marginally for the 2000 crop but has picked up again.

Seven (7) beekeepers who rented their hives for pollination purposes provided detailed information on their operations for the 2011 production year. These seven beekeepers also extracted honey as well. Before discussing costs and returns data for this group of beekeepers, it is important for readers or users of this report to note that on average about 51 percent of the income for this group was generated from renting beehives for pollination purposes. Balance of the income was received from honey sales, wax and pollen and miscellaneous receipts.

The total number of hives for the pollination group of beekeepers was 25,600 with an average of 3,657 hives per beekeeper. Average yield for honey production was about 116 pounds per hive. Average honey production per operation for this group was 423,249 pounds per beekeeping operation. Almost 73 percent of the honey produced was sold as bulk honey. Average wax and pollen sales amounted to \$63,271 per operation or \$17 per hive.

Average honey sales (bulk, consumer pack sales and inventory, wax/pollen sales and miscellaneous receipts) for this group amounted to \$726,437 or \$199 per hive (\$1.72 per pound of honey produced). When hive rental income for pollination was combined with honey sales and miscellaneous receipts average value of production increased to \$1,105,100 per operation. In terms of income per hive, it was estimated at \$302 or (\$2.61 per pound of honey produced). Details on value of production (honey and pollination) are presented in Table 15.

**Variable Costs:**

Average variable costs for the pollination group of beekeepers were estimated at \$575,919 or \$157 per hive. Paid labour and benefits was the leading expense item at \$45 per hive, followed by bee purchases and sugar feeding cost. Other notable expenses for this group were supplies and miscellaneous expenses, fuel, medicinal sugar/bee repellent, unpaid labour and machine repairs.

**Capital Costs:**

Average capital costs for the seven beekeepers in the pollination group were estimated at \$247,658 per operation or \$68 per hive. The most significant cost item for this group was equipment and building depreciation at \$55 per hive.

**Total Production Costs:**

Average total production costs for the pollination beekeepers group were calculated at \$823,577 per operation. In terms of total production cost per hive, it was \$225 for an average pollination operation. Total production cost comprised of 70 percent variable costs and about 30 percent capital costs. Details on variable and capital costs are presented in Table 15.

**Management Indicators:**

Average gross margin for the pollination group of beekeepers was \$511,467 per operation or \$140 per hive. Return to unpaid labour for this group was positive at \$310,908 per operation (\$85 per hive). Average return to investment and equity were also positive at \$83 and \$77 per hive, respectively. Details on gross margin and return to unpaid labour, investment and equity are presented in Table 15.

**Investment Costs:**

Average total investment for land, buildings, bee equipment and machinery for the seven beekeepers in the pollination group was estimated at \$2,140,947 per operation or \$585 per hive. Land area associated with pollination group was about 42 acres. It was valued at \$65,571 in total or \$1500 per acre or \$17 per hive. Bee equipment investment was estimated at \$348 per hive, followed by machinery including vehicles, at \$121, and buildings at \$100 per hive. Details on investment are presented in Table 16.



**Table 15: Pollination Production Costs and Returns, Alberta, 2011**

(A)		Total \$	\$/Hive	\$/lb
1. Bulk Honey Sales	308,491.71 lb	476,564.07	130.31	1.54
2. Bulk Honey Inventory	29,028.57 lb	43,542.86	11.91	
3. Consumer Pack Sales	2,442.86 lb	6,148.57	1.68	
4. Consumer Pack Inventory	83,071.43 lb	125,760.71	34.39	
5. Other Honey Sales	214.29 lb	428.57	0.12	
6. Wax/Pollen/Other Sales	14,123.71 lb	63,271.17	17.30	
7. Bee Sales		0.00	0.00	
8. Crop Insurance Receipts		10,285.71	2.81	
9. Miscellaneous Receipts		435.57	0.12	
10. Less: Honey Purchase for Resale		0.00	0.00	
11. Hive Rental - Pollination		378,662.86	154.07	
<b>VALUE OF PRODUCTION</b>		<b>1,105,100.09</b>	<b>302.18</b>	<b>2.61</b>
(B)				
1. Bee Purchases - Package Bees		36,234.11	9.91	0.09
2. Bee Purchases - Queens		50,960.71	13.93	0.12
3. Bee Purchases - Nucs		9,285.71	2.54	0.02
4. Freight and Trucking		10,327.57	2.82	0.02
5. Sugar for Feeding		76,411.29	20.89	0.18
6. Pollen Supplement Feeding		12,583.43	3.44	0.03
7. Medicinal Sugar/Bee Repellent		30,561.29	8.36	0.07
8. Product and Crop Insurance		13,264.29	3.63	0.03
9. Fuel		32,617.14	8.92	0.08
10. Repairs - Machine		17,807.71	4.87	0.04
11. Repairs - Buildings and Improvements		11,223.29	3.07	0.03
12. Utilities and Heating Fuel		16,198.86	4.43	0.04
13. Custom Work and Machine Rental		5,378.14	1.47	0.01
14. Assoc. Dues, Prof'l Fees, Promotion and Travel		19,954.50	5.46	0.05
15. Small Tools, Supplies and Miscellaneous Expenses		35,356.43	9.67	0.08
16. Operating Interest		3,946.43	1.08	0.01
17. Paid Labour and Benefits	10,339.57 hours	164,422.86	44.96	0.39
18. Unpaid Labour	2,798.57 hours	29,385.00	8.03	0.07
<b>VARIABLE COSTS</b>		<b>575,918.76</b>	<b>157.48</b>	<b>1.36</b>
(C)				
1. Land Rent/Lease, Bldg. Rent and Forage Access		9,886.57	2.70	0.02
2. Taxes, Licences and General Insurance		15,802.71	4.32	0.04
3. Equipment and Building a) Depreciation		200,558.55	54.84	0.47
b) Lease Payments		0.00	0.00	0.00
4. Paid Capital Interest		21,410.14	5.85	0.05
<b>TOTAL CAPITAL COSTS</b>		<b>247,657.97</b>	<b>67.72</b>	<b>0.59</b>
(D)	<b>CASH COSTS (B+C-B18-C3a)</b>	<b>593,633.18</b>	<b>162.32</b>	<b>1.40</b>
(E)	<b>TOTAL PRODUCTION COSTS (B+C)</b>	<b>823,576.73</b>	<b>225.20</b>	<b>1.95</b>
(F)	<b>GROSS MARGIN (A-D)</b>	<b>511,466.91</b>	<b>139.85</b>	<b>1.21</b>
	<b>RETURN TO UNPAID LABOUR (A-E+B18)</b>	<b>310,908.36</b>	<b>85.01</b>	<b>0.73</b>
	<b>RETURN TO INVESTMENT (A-E+C4) 6.30%</b>	<b>302,933.50</b>	<b>82.83</b>	<b>0.72</b>
	<b>RETURN TO EQUITY (A-E)</b>	<b>281,523.36</b>	<b>76.98</b>	<b>0.67</b>
<b>MANAGEMENT</b>				
	Number of Hives		3,657.14	
	Average Yield per Hive (lb)		115.73	
	Honey Produced (lb)		423,248.86	

**Table 16: Pollination Production Enterprise Investment, Alberta, 2011**

<b>INVESTMENT SUMMARY:</b>		<b>Total \$</b>	<b>\$/Hive</b>
Land	41.71 acres	62,571.43	17.11
Buildings		364,928.57	99.79
Bee Equipment		1,271,328.57	347.63
Machinery		442,118.57	120.89
<b>TOTAL INVESTMENT</b>		<b>2,140,947.14</b>	<b>585.42</b>

<b>INVESTMENT DETAIL:</b>	Enterprise Value (\$)	Age (Years)	Depreciation (\$)
<b>Land</b>	<b>62,571.43</b>		
Honey House	177,142.86	11.57	8,857.14
Wintering Shed	0.00	0.00	0.00
Houses (25%)	35,357.14	12.71	1,767.86
Other Buildings	152,428.57	17.80	7,621.43
<b>Buildings Sub-Total</b>	<b>364,928.57</b>		<b>18,246.43</b>
Hives	942,142.86	11.71	108,346.43
Pallets	35,842.86	6.14	4,121.93
Fork Lift	12,857.14	3.73	1,028.57
Hive Feeders	32,500.00	5.57	3,737.50
Super Elevator	0.00	0.00	0.00
Uncapping Machines	9,500.00	8.86	760.00
Honey Extractor	31,428.57	8.57	2,514.29
Dryer/Heat Exchanger	6,214.29	4.57	497.14
Wax Spinner/Separator	17,857.14	4.79	1,428.57
Honey Tank and Pipe	13,228.57	9.00	1,521.29
Feed Tank	5,200.00	9.14	598.00
Storage Vessel	0.00	0.00	0.00
Boiler Furnace	4,928.57	4.14	394.29
Water System	0.00	0.00	0.00
Compressor	1,121.43	3.57	89.71
Pressure Washer	1,857.14	7.43	148.57
Fuel Tank	0.00	0.00	0.00
Scales	2,914.29	7.71	335.14
Barrels	11,785.71	2.00	1,355.36
Barrel Loader	0.00	0.00	0.00
Carts	414.29	6.43	47.64
Fencers/Shockers	2,428.57	1.71	279.29
Shop Tools	14,071.43	7.57	1,618.21
Staplers	564.29	2.86	64.89
Office Equipment	0.00	0.00	0.00
Lawn Mower	8,842.86	4.00	707.43
Over-Wintering Insulation	39,914.29	5.43	4,590.14
Miscellaneous Equipment	75,714.29	10.43	6,057.14
<b>Equipment Sub - Total</b>	<b>1,271,328.57</b>		<b>140,241.54</b>
Trucks	228,680.00	7.16	18,294.40
Tractors	0.00	0.00	0.00
Other Machinery	213,438.57	7.07	1,792.57
<b>Power Equipment Sub - Total</b>	<b>442,118.57</b>		<b>20,086.97</b>
<b>TOTAL INVESTMENT</b>	<b>2,140,947.14</b>		<b>178,574.94</b>

## **Pollination Production Costs and Returns (Southern, Central and North East Regions)**

Results presented in Table 17 are based on the average of six beekeepers that rented their hives for pollination and also produced honey in 2011. Average size of the beekeeping operation was 3,760 hives. Honey production for this group was almost 111 pounds per hive, about five pounds less than the sample size for pollination. Honey produced for bulk sales amounted to 296,412 pounds. Approximately 71 percent of the honey produced was sold as bulk honey. Average wax and pollen sales amounted to \$11,375 per operation or \$3 per hive.

Average value of honey sales including wax and miscellaneous receipts for these beekeepers was \$658,477 per beekeeper or \$175 per hive (\$1.58 per pound). When hive rental income was added to the value of honey and wax sales the total value of production amounted to \$1,098,417 or \$292 per hive or \$2.64 per pound. Income from hive rental for pollination purposes was about 54 percent of total value of production. Details on value of production (honey and pollination) are presented in Table 17.

Average variable costs for this group of participants were estimated at \$600,345 per beekeeper and \$160 per hive or \$1.44 per pound of honey produced. Average capital costs for this group amounted to \$253,268 per operation, \$67 per hive (\$0.61 per pound). Average total production costs for beekeepers in this group were calculated at \$853,614 per operation and \$227 per hive or \$2.05 per pound of honey produced.

Average gross margin for the six beekeepers in this group was estimated at \$485,935 per operation with 3,760 hives. It was \$129 per hive or \$1.17 per pound of honey produced. Average return to unpaid labour was positive at \$276,566 per operation and \$74 per hive (\$0.66 per pound). Returns to investment and equity were also positive. Details on gross margin, returns to unpaid labour, investment and equity are given in Table 17.

Average total investment for land, buildings, bee equipment and machinery for this group was estimated at \$2,245,855 per operation or \$597 per hive. Details on investment are presented in Table 18.

**Table 17: Pollination Production Costs and Returns, South, Central and North East, 2011**

A)		Total \$	\$/Hive	\$/lb
1. Bulk Honey Sales	296,412.33 lb	454,399.95	120.85	1.53
2. Bulk Honey Inventory	33,866.67 lb	50,800.00	13.51	
3. Consumer Pack Sales	2,183.33 lb	5,506.67	1.46	
4. Consumer Pack Inventory	83,583.33 lb	125,387.50	33.35	
5. Other Honey Sales	250.00 lb	500.00	0.13	
6. Wax/Pollen/Other Sales	4,875.00 lb	11,375.00	3.03	
7. Bee Sales		0.00	0.00	
8. Crop Insurance Receipts		10,000.00	2.66	
9. Miscellaneous Receipts		508.17	0.14	
10. Less: Honey Purchase for Resale		0.00	0.00	
11. Hive Rental - Pollination		439,940.00	157.08	
<b>VALUE OF PRODUCTION</b>		<b>1,098,417.28</b>	<b>292.13</b>	<b>2.64</b>
<b>(B)</b>				
1. Bee Purchases - Package Bees		42,273.12	11.24	
2. Bee Purchases - Queens		56,620.83	15.06	
3. Bee Purchases - Nucs		10,833.33	2.88	
4. Freight and Trucking		8,215.50	2.18	
5. Sugar for Feeding		78,313.17	20.83	
6. Pollen Supplement Feeding		13,014.00	3.46	
7. Medicinal Sugar/Bee Repellent		32,321.50	8.60	
8. Product and Crop Insurance		13,808.33	3.67	
9. Fuel		32,886.67	8.75	
10. Repairs - Machine		17,275.67	4.59	
11. Repairs - Buildings and Improvements		8,427.17	2.24	
12. Utilities and Heating Fuel		16,182.00	4.30	
13. Custom Work and Machine Rental		5,941.17	1.58	
14. Assoc. Dues, Prof'l Fees, Promotion and Travel		18,280.25	4.86	
15. Small Tools, Supplies and Miscellaneous Expenses		37,582.50	10.00	
16. Operating Interest		2,937.50	0.78	
17. Paid Labour and Benefits	10,814.50 hours	173,670.00	46.19	
18. Unpaid Labour	3,025.00 hours	31,762.50	8.45	
<b>VARIABLE COSTS</b>		<b>600,345.21</b>	<b>159.67</b>	<b>1.44</b>
<b>(C)</b>				
1. Land Rent/Lease, Bldg. Rent and Forage Access		10,234.33	2.72	
2. Taxes, Licences and General Insurance		14,903.17	3.96	
3. Equipment and Building	a) Depreciation	209,369.14	55.68	
	b) Lease Payments	0.00	0.00	
4. Paid Capital Interest		18,761.83	4.99	
<b>TOTAL CAPITAL COSTS</b>		<b>253,268.48</b>	<b>67.36</b>	<b>0.61</b>
<b>(D)</b>	<b>CASH COSTS (B+C-B18-C3a)</b>	<b>612,482.04</b>	<b>162.89</b>	<b>1.47</b>
<b>(E)</b>	<b>TOTAL PRODUCTION COSTS (B+C)</b>	<b>853,613.68</b>	<b>227.02</b>	<b>2.05</b>
<b>(F)</b>	<b>GROSS MARGIN (A-D)</b>	<b>485,935.24</b>	<b>129.24</b>	<b>1.17</b>
	<b>RETURN TO UNPAID LABOUR (A-E+B18)</b>	<b>276,566.10</b>	<b>73.55</b>	<b>0.66</b>
	<b>RETURN TO INVESTMENT (A-E+C4) 11.8 %</b>	<b>263,565.44</b>	<b>70.10</b>	<b>0.63</b>
	<b>RETURN TO EQUITY (A-E)</b>	<b>244,803.60</b>	<b>65.11</b>	<b>0.59</b>
<b>MANAGEMENT</b>				
	Number of Hives		3,760.00	
	Average Yield per Hive (lb)		110.72	
	Honey Produced (lb)		416,295.67	

**Table 18: Pollination Production Enterprise Investment, South, Central and North East, 2011**

<b>INVESTMENT SUMMARY:</b>		<b>Total \$</b>	<b>\$/Hive</b>	
Land	45.83 acres	68,750.00	18.28	
Buildings		383,416.67	101.97	
Bee Equipment		1,323,966.67	352.12	
Machinery		469,721.67	124.93	
<b>TOTAL INVESTMENT</b>		<b>2,245,855.00</b>	<b>597.30</b>	
<b>INVESTMENT DETAIL:</b>		<b>Enterprise Value (\$)</b>	<b>Age (Years)</b>	<b>Depreciation (\$)</b>
<b>Land</b>		<b>68,750.00</b>		
Honey House		183,333.33	12.33	9,166.67
Wintering Shed		0.00	0.00	0.00
Houses (25%)		37,083.33	14.50	1,854.17
Other Buildings		163,000.00	19.10	8,150.00
<b>Buildings Sub-Total</b>		<b>383,416.67</b>		<b>19,170.83</b>
Hives		965,833.33	10.33	111,070.83
Pallets		39,316.67	5.50	4,521.42
Fork Lift		12,083.33	2.17	966.67
Hive Feeders		36,666.67	5.67	4,216.67
Super Elevator		0.00	0.00	0.00
Uncapping Machines		10,083.33	9.83	806.67
Honey Extractor		30,000.00	9.50	2,400.00
Dryer/Heat Exchanger		7,250.00	5.33	580.00
Wax Spinner/Separator		19,166.67	5.08	1,533.33
Honey Tank and Pipe		14,600.00	10.00	1,679.00
Feed Tank		4,733.33	9.00	544.33
Storage Vessel		0.00	0.00	0.00
Boiler Furnace		5,750.00	4.83	460.00
Water System		0.00	0.00	0.00
Compressor		1,141.67	3.67	91.33
Pressure Washer		2,000.00	8.17	160.00
Fuel Tank		0.00	0.00	0.00
Scales		3,066.67	7.33	352.67
Barrels		13,750.00	2.33	1,581.25
Barrel Loader		0.00	0.00	0.00
Carts		483.33	7.50	55.58
Fencers/Shockers		833.33	0.33	95.83
Shop Tools		15,583.33	7.17	1,792.08
Staplers		658.33	3.33	75.71
Office Equipment		0.00	0.00	0.00
Lawn Mower		9,816.67	3.83	785.33
Over-Wintering Insulation		46,150.00	5.17	5,307.25
Miscellaneous Equipment		85,000.00	7.17	6,800.00
<b>Equipment Sub - Total</b>		<b>1,323,966.67</b>		<b>145,875.96</b>
Trucks		256,710.00	7.15	20,536.80
Tractors		0.00	0.00	0.00
Other Machinery		213,011.67	6.85	1,624.67
<b>Power Equipment Sub - Total</b>		<b>469,721.67</b>		<b>22,161.47</b>
<b>TOTAL INVESTMENT</b>		<b>2,245,855.00</b>		<b>187,208.26</b>

## **SECTION VIII**

### **KEY OBSERVATION FROM THE COSTS AND RETURNS STUDY, 2011**

As previously mentioned in the introduction, the costs and returns data collected from the twenty one (21) beekeeping operations in 2011 shows that a third enterprise – selling of bees (queens, nucs, and hives) is emerging in Alberta. This key observation is an encouraging sign for industry development and growth. The income from bee sales was excluded from the analysis in order to accurately track the performance of the two major enterprises – honey production and the provision of pollination services.

In total, five producers generated income from the sale of queens, nucs, and hives. Four out of these five beekeepers operated 2,000 or more hives. The remaining operation had less than 1,000 hives. The queens, nucs and hives were sold at \$25, \$100 and \$175 per unit respectively. Although the sample size is small, yet the data collected so far provides enough information that could serve as a guide to producers.

## **APPENDICES**

## Appendix 1: Honey Production Costs and Returns, Alberta, 2008

(A)		Total \$	\$/Hive	\$/lb
1. Bulk Honey Sales	139,519.88 lb	199,720.16	170.64	1.43
2. Bulk Honey Inventory	0.00 lb	0.00	0.00	
3. Consumer Pack Sales	542.81 lb	1,020.00	.87	
4. Consumer Pack Inventory	39,971.00 lb	58,081.09	49.62	
5. Other Honey Sales	0.00 lb	0.00	0.00	
6. Wax/Pollen/Other Sales	4,290.66 lb	10,369.06	8.86	
7. Crop Insurance Receipts		6,486.75	5.54	
8. Miscellaneous Receipts		5,891.25	5.03	
9. Less: Honey Purchase for Resale		0.00	0.00	
<b>VALUE OF PRODUCTION</b>		<b>281,568.31</b>	<b>240.57</b>	<b>1.56</b>
(B)				
1. Bee Purchases - Package Bees		0.00	0.00	
2. Bee Purchases - Queens		14,498.84	12.39	
3. Freight and Trucking		7,834.06	6.69	
4. Feed - Sugar		20,510.61	17.52	
5. Medicinal Sugar/Bee Repellent		8,781.24	7.50	
6. Product and Crop Insurance		1,802.06	1.54	
7. Fuel		13,331.78	11.39	
8. Repairs - Machine		6,901.15	5.90	
9. Repairs - Buildings and Improvements		4,771.20	4.08	
10. Utilities and Heating Fuel		7,725.73	6.60	
11. Custom Work and Machine Rental		1,303.04	1.11	
12. Association Dues, Prof'l Fees, Promotion and Travel		6,069.81	5.19	
13. Small Tools, Supplies and Misc. Expenses		10,241.31	8.75	
14. Operating Interest		1,573.50	1.34	
15. Paid Labour and Benefits	4,899.25 hours	71,428.23	61.03	
16. Unpaid Labour	1,335.00 hours	13,537.50	11.57	
<b>VARIABLE COSTS</b>		<b>190,310.06</b>	<b>162.60</b>	<b>1.06</b>
(C)				
1. Land Rent/Lease, Bldg. Rent and Forage Access		2,407.06	2.06	
2. Taxes, Licenses and General Insurance		8,858.30	7.57	
3. Equipment and Building	a) Depreciation	56,710.10	48.45	
	b) Lease Payments	0.00	0.00	
4. Paid Capital Interest		6,613.30	5.65	
<b>TOTAL CAPITAL COSTS</b>		<b>74,588.76</b>	<b>63.73</b>	<b>0.41</b>
(D) CASH COSTS	(B+C-B16-C3a)	<b>194,651.22</b>	<b>166.31</b>	<b>1.08</b>
(E) TOTAL PRODUCTION COSTS	(B+C)	<b>264,898.81</b>	<b>226.32</b>	<b>1.47</b>
(F) GROSS MARGIN	(A-D)	<b>86,917.10</b>	<b>74.26</b>	<b>0.48</b>
RETURN TO UNPAID LABOUR	(A-E+B16)	<b>30,207.00</b>	<b>25.81</b>	<b>0.17</b>
RETURN TO INVESTMENT	(A-E+C4) 3.4%	<b>23,282.80</b>	<b>19.89</b>	<b>0.13</b>
RETURN TO EQUITY	(A-E)	<b>16,669.50</b>	<b>14.24</b>	<b>0.09</b>
<b>MANAGEMENT</b>				
			1,170.44	
Number of Hives			153.82	
Average Yield per Hive (lb)			180,033.69	
Honey Produced (lb)				

Source: Table 2, 2008 Report



## Appendix 2: Honey Production Enterprise Investment, Alberta, 2008

<b>INVESTMENT SUMMARY:</b>		<b>Total \$</b>	<b>\$/Hive</b>	
Land	29.56 acres	22,165.00	18.94	
Buildings		183,530.00	156.80	
Bee Equipment		363,871.81	310.89	
Machinery		115,806.63	98.94	
<b>TOTAL INVESTMENT</b>		<b>685,373.44</b>	<b>585.57</b>	
<b>INVESTMENT DETAIL:</b>		Enterprise Value (\$)	Age (Years)	Depreciation (\$)
<b>Land</b>		<b>22,165.00</b>		
Honey House		93,625.00	16.63	4,681.25
Wintering Shed		0.00	0.00	0.00
Houses (25%)		30,156.25	18.25	1,507.81
Other Buildings		59,748.75	20.11	2,987.44
<b>Buildings Sub-Total</b>		<b>183,530.00</b>		<b>9,176.50</b>
Hives		186,773.44	8.56	21,478.95
Pallets		12,867.63	9.10	1,479.78
Fork Lift		45,220.25	13.71	3,617.62
Hive Feeders		8,576.00	9.18	986.24
Super Elevator		0.00	0.00	0.00
Uncapping Machines		9,792.31	13.31	783.38
Honey Extractor		27,908.56	14.01	2,232.69
Dryer/Heat Exchanger		1,093.75	1.69	87.50
Wax Spinner/Separator		7,884.44	9.94	630.76
Honey Tank and Pipe		8,335.13	13.80	958.54
Feed Tank		5,155.00	10.57	592.83
Storage Vessel		0.00	0.00	0.00
Boiler Furnace		2,687.50	11.25	215.00
Water System		0.00	0.00	0.00
Compressor		1,211.63	8.38	96.93
Pressure Washer		1,705.94	6.06	136.47
Fuel Tank		0.00	0.00	0.00
Scales		2,019.38	20.85	232.23
Barrels		6,022.63	2.75	692.60
Barrel Loader		0.00	0.00	0.00
Carts		1,443.06	11.77	165.95
Fencers/Shockers		5,978.19	4.13	687.49
Shop Tools		7,905.75	7.38	909.16
Staplers		845.44	8.23	97.23
Office Equipment		0.00	0.00	0.00
Lawn Mower		4,105.50	5.46	328.44
Over-Wintering Insulation		12,126.06	7.22	1,394.50
Miscellaneous Equipment		4,214.25	4.69	337.14
<b>Equipment Sub-Total</b>		<b>363,871.81</b>		<b>38,141.41</b>
Trucks		99,968.75	8.96	7,997.50
Tractors		7,062.50	3.94	565.00
Other Machinery		8,775.38	8.79	410.25
<b>Power Equipment Sub-Total</b>		<b>115,806.63</b>		<b>8,972.75</b>

Source: Table 3, 2008 Report

**Appendix 3: Honey Production Costs and Returns, By Size of Operation (up to 1,000 Hives), 2008**

(A)		Total \$	\$/Hive	\$/lb
1. Bulk Honey Sales	116,098.12 lb	170,728.73	214.01	1.47
2. Bulk Honey Inventory	0.00 lb	0.00	0.00	
3. Consumer Pack Sales	965.00 lb	1,813.33	2.27	
4. Consumer Pack Inventory	26,667.33 lb	41,641.17	52.20	
5. Other Honey Sales	0.00 lb	0.00	0.00	
6. Wax/Pollen/Other Sales	2,098.89 lb	5,395.62	6.76	
7. Crop Insurance Receipts		1,333.33	1.67	
8. Miscellaneous Receipts		26,310.32	32.98	
9. Less: Honey Purchase for Resale		0.00	0.00	
<b>VALUE OF PRODUCTION</b>		<b>247,222.50</b>	<b>309.89</b>	<b>1.72</b>
(B)				
1. Bee Purchases - Package Bees		0.00	0.00	
2. Bee Purchases - Queens		6,064.15	7.60	
3. Freight and Trucking		5,922.45	7.42	
4. Feed - Sugar		14,741.63	18.48	
5. Medicinal Sugar/Bee Repellent		6,006.09	7.53	
6. Product and Crop Insurance		1,717.45	2.15	
7. Fuel		8,095.72	10.15	
8. Repairs - Machine		2,479.28	3.11	
9. Repairs - Buildings and Improvements		1,851.92	2.32	
10. Utilities and Heating Fuel		5,402.07	6.77	
11. Custom Work and Machine Rental		313.62	0.39	
12. Association Dues, Prof'l Fees, Promotion and Travel		3,874.66	4.86	
13. Small Tools, Supplies and Misc. Expenses		6,499.33	8.15	
14. Operating Interest		277.78	0.35	
15. Paid Labour and Benefits	3,198.44 hours	49,901.69	62.55	
16. Unpaid Labour	1,515.56 hours	15,913.33	19.95	
<b>VARIABLE COSTS</b>		<b>129,061.17</b>	<b>161.78</b>	<b>0.90</b>
(C)				
1. Land Rent/Lease, Bldg. Rent and Forage Access		1,921.22	2.41	
2. Taxes, Licenses and General Insurance		3,899.31	4.89	
3. Equipment and Building	a) Depreciation	41,532.30	52.06	
	b) Lease Payments	0.00	0.00	
4. Paid Capital Interest		2,954.53	3.70	
<b>TOTAL CAPITAL COSTS</b>		<b>50,307.37</b>	<b>63.06</b>	<b>0.35</b>
(D) CASH COSTS	(B+C-B16-C3a)	<b>121,922.90</b>	<b>152.83</b>	<b>0.85</b>
(E) TOTAL PRODUCTION COSTS	(B+C)	<b>179,368.54</b>	<b>224.84</b>	<b>1.25</b>
(F) GROSS MARGIN	(A-D)	<b>125,299.61</b>	<b>157.06</b>	<b>0.87</b>
RETURN TO UNPAID LABOUR	(A-E+B16)	<b>83,767.30</b>	<b>105.00</b>	<b>0.58</b>
RETURN TO INVESTMENT	(A-E+C4) 13.8%	<b>70,808.50</b>	<b>88.76</b>	<b>0.49</b>
RETURN TO EQUITY	(A-E)	<b>67,853.97</b>	<b>85.05</b>	<b>0.47</b>
<b>MANAGEMENT</b>				
	Number of Hives		797.78	
	Average Yield per Hive (lb)		180.16	
	Honey Produced (lb)		143,730.46	

Source: Table 10, 2008 Report

**Appendix 4: Honey Production Enterprise Investment, By Size of Operation (up to 1,000 Hives), 2008**

<b>INVESTMENT SUMMARY:</b>		<b>Total \$</b>	<b>\$/Hive</b>	
Land	33.44 acres	23,915.56	29.98	
Buildings		129,720.00	162.60	
Bee Equipment		250,792.67	314.36	
Machinery		109,622.89	137.41	
<b>TOTAL INVESTMENT</b>		<b>514,051.11</b>	<b>644.35</b>	
<b>INVESTMENT DETAIL:</b>		Enterprise Value (\$)	Age (Years)	Depreciation (\$)
<b>Land</b>		<b>23,915.56</b>		
Honey House		61,666.67	16.44	3,083.33
Wintering Shed		0.00	0.00	0.00
Houses (25%)		26,944.44	15.56	1,347.22
Other Buildings		41,108.89	16.39	2,055.44
<b>Buildings Sub-Total</b>		<b>129,720.00</b>		<b>6,486.00</b>
Hives		123,644.44	9.67	14,219.11
Pallets		4,070.22	10.40	468.08
Fork Lift		36,058.22	13.15	2,884.66
Hive Feeders		5,326.78	8.22	612.58
Super Elevator		0.00	0.00	0.00
Uncapping Machines		10,464.11	15.89	837.13
Honey Extractor		16,504.11	13.91	1,320.33
Dryer/Heat Exchanger		666.67	0.67	53.33
Wax Spinner/Separator		5,961.22	10.33	476.90
Honey Tank and Pipe		6,651.33	13.20	764.90
Feed Tank		4,664.44	12.24	536.41
Storage Vessel		0.00	0.00	0.00
Boiler Furnace		1,833.33	12.89	146.67
Water System		0.00	0.00	0.00
Compressor		1,259.56	8.78	100.76
Pressure Washer		888.33	5.89	71.07
Fuel Tank		0.00	0.00	0.00
Scales		1,067.78	31.51	122.79
Barrels		3,701.33	3.89	425.65
Barrel Loader		0.00	0.00	0.00
Carts		1,721.00	14.37	197.92
Fencers/Shockers		4,219.56	4.78	485.25
Shop Tools		7,610.22	6.33	875.18
Staplers		586.33	8.63	67.43
Office Equipment		0.00	0.00	0.00
Lawn Mower		3,415.33	4.60	273.23
Over-Wintering Insulation		8,068.56	8.94	927.88
Miscellaneous Equipment		2,409.78	4.33	192.78
<b>Equipment Sub-Total</b>		<b>250,792.67</b>		<b>26,060.03</b>
Trucks		98,411.11	9.30	7,872.89
Tractors		2,222.22	3.33	177.78
Other Machinery		8,989.56	8.60	224.44
<b>Power Equipment Sub-Total</b>		<b>109,622.89</b>		<b>8,275.11</b>
<b>TOTAL INVESTMENT</b>		<b>514,051.11</b>		<b>40,821.14</b>

Source: Table 11, 2008 Report

**Appendix 5: Honey Production Costs and Returns, By Size of Operation (over 1,000 Hives), 2008**

(A)		Total \$	\$/Hive	\$/lb
1. Bulk Honey Sales	169,633.57 lb	236,994.84	143.67	1.40
2. Bulk Honey Inventory	0.00 lb	0.00	0.00	
3. Consumer Pack Sales	0.00 lb	0.00	0.00	
4. Consumer Pack Inventory	57,075.71 lb	79,218.14	48.02	
5. Other Honey Sales	0.00 lb	0.00	0.00	
6. Wax/Pollen/Other Sales	7,108.66 lb	16,763.49	10.16	
7. Crop Insurance Receipts		13,112.57	7.95	
8. Miscellaneous Receipts		10,857.14	6.58	
9. Less: Honey Purchase for Resale		0.00	0.00	
<b>VALUE OF PRODUCTION</b>		<b>356,946.19</b>	<b>216.39</b>	<b>1.57</b>
(B)				
1. Bee Purchases - Package Bees		0.00	0.00	
2. Bee Purchases - Queens		25,343.43	15.36	
3. Freight and Trucking		10,291.86	6.24	
4. Feed - Sugar		27,927.86	16.93	
5. Medicinal Sugar/Bee Repellent		12,349.29	7.49	
6. Product and Crop Insurance		1,910.86	1.16	
7. Fuel		20,063.86	12.16	
8. Repairs - Machine		12,586.43	7.63	
9. Repairs - Buildings and Improvements		8,524.57	5.17	
10. Utilities and Heating Fuel		10,713.29	6.49	
11. Custom Work and Machine Rental		2,575.14	1.56	
12. Association Dues, Prof'l Fees, Promotion and Travel		8,892.14	5.39	
13. Small Tools, Supplies and Misc. Expenses		15,052.43	9.13	
14. Operating Interest		3,239.43	1.96	
15. Paid Labour and Benefits	7,086.00 hours	99,105.20	60.08	
16. Unpaid Labour	1,102.86 hours	10,482.86	6.35	
<b>VARIABLE COSTS</b>		<b>269,058.63</b>	<b>163.11</b>	<b>1.19</b>
(C)				
1. Land Rent/Lease, Bldg. Rent and Forage Access		3,031.71	1.84	
2. Taxes, Licenses and General Insurance		15,234.14	9.24	
3. Equipment and Building	a) Depreciation	76,224.40	46.21	
	b) Lease Payments	0.00	0.00	
4. Paid Capital Interest		11,317.43	6.86	
<b>TOTAL CAPITAL COSTS</b>		<b>105,807.69</b>	<b>64.14</b>	<b>0.47</b>
(D)	<b>CASH COSTS (B+C-B16-C3a)</b>	<b>288,159.05</b>	<b>174.69</b>	<b>1.27</b>
(E)	<b>TOTAL PRODUCTION COSTS (B+C)</b>	<b>374,866.32</b>	<b>227.25</b>	<b>1.65</b>
(F)	<b>GROSS MARGIN (A-D)</b>	<b>68,787.14</b>	<b>41.70</b>	<b>0.30</b>
	<b>RETURN TO UNPAID LABOUR (A-E+B16)</b>	<b>(7,437.26)</b>	<b>(4.51)</b>	<b>(0.03)</b>
	<b>RETURN TO INVESTMENT (A-E+C4) -0.7%</b>	<b>(6,602.69)</b>	<b>(4.00)</b>	<b>(0.03)</b>
	<b>RETURN TO EQUITY (A-E)</b>	<b>(17,920.12)</b>	<b>(10.86)</b>	<b>(0.08)</b>
<b>MANAGEMENT</b>				
	Number of Hives		1,649.57	
	Average Yield per Hive (lb)		137.44	
	Honey Produced (lb)		226,709.29	

Source: Table 12, 2008 Report

**Appendix 6: Honey Production Enterprise Investment, By Size of Operation (over 1,000 Hives), 2008**

<b>INVESTMENT SUMMARY:</b>		<b>Total \$</b>	<b>\$/Hive</b>	
Land	24.57 acres	19,914.29	12.07	
Buildings		252,714.29	153.20	
Bee Equipment		509,259.29	308.72	
Machinery		123,757.14	75.02	
<b>TOTAL INVESTMENT</b>		<b>905,645.00</b>	<b>549.02</b>	
<b>INVESTMENT DETAIL:</b>		Enterprise Value (\$)	Age (Years)	Depreciation (\$)
<b>Land</b>		<b>19,914.29</b>		
Honey House		134,714.29	16.86	6,735.71
Wintering Shed		0.00	0.00	0.00
Houses (25%)		34,285.71	21.71	1,714.29
Other Buildings		83,714.29	24.89	4,185.71
<b>Buildings Sub-Total</b>		<b>252,714.29</b>		<b>12,635.71</b>
Hives		267,939.29	7.14	30,813.02
Pallets		24,178.57	7.43	2,780.54
Fork Lift		57,000.00	14.43	4,560.00
Hive Feeders		12,753.57	10.43	1,466.66
Super Elevator		0.00	0.00	0.00
Uncapping Machines		8,928.57	10.00	714.29
Honey Extractor		42,571.43	14.14	3,405.71
Dryer/Heat Exchanger		1,642.86	3.00	131.43
Wax Spinner/Separator		10,357.14	9.43	828.57
Honey Tank and Pipe		10,500.00	14.57	1,207.50
Feed Tank		5,785.71	8.43	665.36
Storage Vessel		0.00	0.00	0.00
Boiler Furnace		3,785.71	9.14	302.86
Water System		0.00	0.00	0.00
Compressor		1,150.00	7.86	92.00
Pressure Washer		2,757.14	6.29	220.57
Fuel Tank		0.00	0.00	0.00
Scales		3,242.86	7.14	372.93
Barrels		9,007.14	1.29	1,035.82
Barrel Loader		0.00	0.00	0.00
Carts		1,085.71	8.43	124.86
Fencers/Shockers		8,239.29	3.29	947.52
Shop Tools		8,285.71	8.71	952.86
Staplers		1,178.57	7.71	135.54
Office Equipment		0.00	0.00	0.00
Lawn Mower		4,992.86	6.57	399.43
Over-Wintering Insulation		17,342.86	5.00	1,994.43
Miscellaneous Equipment		6,534.29	5.14	522.74
<b>Equipment Sub-Total</b>		<b>509,259.29</b>		<b>53,674.62</b>
Trucks		101,971.43	8.52	8,157.71
Tractors		13,285.71	4.71	1,062.86
Other Machinery		8,500.00	9.04	649.14
<b>Power Equipment Sub-Total</b>		<b>123,757.14</b>		<b>9,869.71</b>
<b>TOTAL INVESTMENT</b>		<b>905,645.00</b>		<b>76,180.05</b>

Source: Table 13, 2008 Report

**Appendix 7: Pollination Production Costs and Returns, Alberta, 2008**

(A)		<b>Total \$</b>	<b>\$/Hive</b>	<b>\$/lb</b>
1. Bulk Honey Sales	218,233.13 lb	264,840.63	85.25	1.21
2. Bulk Honey Inventory	16,065.00 lb	24,097.50	7.76	
3. Consumer Pack Sales	1,706.00 lb	3,583.75	1.15	
4. Consumer Pack Inventory	20,651.88 lb	30,867.19	9.94	
5. Other Honey Sales	0.00 lb	0.00	0.00	
6. Wax/Pollen/Other Sales	6,104.88 lb	15,903.74	5.12	
7. Crop Insurance Receipts		0.00	0.00	
8. Miscellaneous Receipts		13,299.13	4.28	
9. Less: Honey Purchase for Resale		0.00	0.00	
10. Hive Rental – Pollination		272,269.38	146.16	
<b>VALUE OF PRODUCTION</b>		<b>624,861.31</b>	<b>201.14</b>	<b>2.43</b>
(B)				
1. Bee Purchases – Package Bees		2,343.75	0.75	
2. Bee Purchases – Queens		39,694.44	12.78	
3. Freight and Trucking		28,592.00	9.20	
4. Feed – Sugar		43,476.25	13.99	
5. Medicinal Sugar/Bee Repellent		26,707.25	8.60	
6. Product and Crop Insurance		537.50	0.17	
7. Fuel		25,904.25	8.34	
8. Repairs – Machine		14,909.50	4.80	
9. Repairs – Buildings and Improvements		3,510.25	1.13	
10. Utilities and Heating Fuel		12,606.50	4.06	
11. Custom Work and Machine Rental		1,793.25	0.58	
12. Association Dues, Prof'l Fees, Promotion and Travel		13,064.25	4.21	
13. Small Tools, Supplies and Misc. Expenses		19,558.81	6.30	
14. Operating Interest		4,126.75	1.33	
15. Paid Labour and Benefits	9,688.50 hours	151,952.25	48.91	
16. Unpaid Labour	480.00 hours	5,025.00	1.62	
<b>VARIABLE COSTS</b>		<b>393,802.00</b>	<b>126.76</b>	<b>1.53</b>
(C)				
1. Land Rent/Lease, Bldg. Rent and Forage Access		5,692.63	1.83	
2. Taxes, Licenses and General Insurance		22,658.25	7.29	
3. Equipment and Building	a) Depreciation	123,750.25	39.83	
	b) Lease Payments	0.00	0.00	
4. Paid Capital Interest		8,306.75	2.67	
<b>TOTAL CAPITAL COSTS</b>		<b>160,407.88</b>	<b>51.63</b>	<b>0.62</b>
(D) CASH COSTS	(B+C-B16-C3a)	<b>425,434.63</b>	<b>136.94</b>	<b>1.66</b>
(E) TOTAL PRODUCTION COSTS	(B+C)	<b>554,209.88</b>	<b>178.40</b>	<b>2.16</b>
(F) GROSS MARGIN	(A-D)	<b>199,426.68</b>	<b>64.19</b>	<b>0.78</b>
RETURN TO UNPAID LABOUR	(A-E+B16)	<b>75,676.43</b>	<b>24.36</b>	<b>0.29</b>
RETURN TO INVESTMENT	(A-E+C4) 5.6%	<b>78,958.18</b>	<b>25.42</b>	<b>0.31</b>
RETURN TO EQUITY	(A-E)	<b>70,651.43</b>	<b>22.74</b>	<b>0.28</b>
<b>MANAGEMENT</b>				
			3,106.63	
Number of Hives				
Average Yield per Hive (lb)			82.62	
Honey Produced (lb)				256,656.00

Source: Table 14, 2008 Report

**Appendix 8:** Pollination Production Enterprise Investment, Alberta, 2008

<b>INVESTMENT SUMMARY:</b>		<b>Total \$</b>	<b>\$/Hive</b>	
Land	39.38 acres	44,075.00	14.19	
Buildings		355,875.00	114.55	
Bee Equipment		845,953.13	272.31	
Machinery		164,750.00	53.03	
<b>TOTAL INVESTMENT</b>		<b>1,410,653.13</b>	<b>454.08</b>	
<b>INVESTMENT DETAIL:</b>		Enterprise Value (\$)	Age (Years)	Depreciation (\$)
<b>Land</b>		<b>44,075.00</b>		
Honey House		187,250.00	9.25	9,362.50
Wintering Shed		0.00	0.00	0.00
Houses (25%)		60,312.50	17.00	3,015.63
Other Buildings		108,312.50	19.96	5,415.63
<b>Buildings Sub-Total</b>		<b>355,875.00</b>		<b>17,793.75</b>
Hives		601,406.25	9.13	69,161.72
Pallets		19,209.38	7.38	2,209.08
Fork Lift		57,375.00	5.00	4,590.00
Hive Feeders		15,437.50	6.50	1,775.31
Super Elevator		0.00	0.00	0.00
Uncapping Machines		6,937.50	8.00	555.00
Honey Extractor		30,368.75	12.88	2,429.50
Dryer/Heat Exchanger		5,562.50	5.38	445.00
Wax Spinner/Separator		11,250.00	9.25	900.00
Honey Tank and Pipe		8,375.00	12.38	963.13
Feed Tank		7,550.00	5.13	868.25
Storage Vessel		0.00	0.00	0.00
Boiler Furnace		4,562.50	7.88	365.00
Water System		0.00	0.00	0.00
Compressor		1,268.75	6.00	101.50
Pressure Washer		2,337.50	4.13	187.00
Fuel Tank		0.00	0.00	0.00
Scales		3,462.50	7.75	398.19
Barrels		14,709.38	2.13	1,691.58
Barrel Loader		0.00	0.00	0.00
Carts		812.50	7.75	93.44
Fencers/Shockers		2,375.00	1.63	273.13
Shop Tools		13,125.00	7.00	1,509.38
Staplers		1,093.75	4.63	125.78
Office Equipment		0.00	0.00	0.00
Lawn Mower		6,203.13	4.13	496.25
Over-Wintering Insulation		29,593.75	5.50	3,403.28
Miscellaneous Equipment		2,937.50	1.38	235.00
<b>Equipment Sub-Total</b>		<b>845,953.13</b>		<b>92,776.50</b>
Trucks		144,100.00	6.46	11,528.00
Tractors		8,125.00	4.13	650.00
Other Machinery		12,525.00	4.63	1,002.00
<b>Power Equipment Sub-Total</b>		<b>164,750.00</b>		<b>13,180.00</b>
<b>TOTAL INVESTMENT</b>		<b>1,410,653.13</b>		<b>123,750.25</b>

Source: Table 15, 2008 Report

**Appendix 9: Summary of Honey Production Costs and Returns by Regions and Size of Operation, 2008**

	ALBERTA		REGION						SIZE OF OPERATION			
			SOUTHERN, CENTRAL AND NORTH-EAST		NORTH-WEST		PEACE RIVER		UP TO 1,000 HIVES		OVER 1,000 HIVES	
Average Number of Hives	1,170		935		1,116		1,253		798		1,650	
Average Yield Per Hive (lb)	153.82		153.60		155.86		152.85		180.16		137.44	
	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb
Bulk Honey Sales	170.64	1.11	218.33	1.42	116.02	0.74	189.75	1.24	214.01	1.19	143.67	1.05
Other Honey Sales/Inventory*	59.35	0.39	13.11	0.09	126.59	0.81	33.75	0.22	61.23	0.34	58.18	0.42
Miscellaneous Income**	10.58	0.07	7.09	0.05	2.69	0.02	15.06	0.10	4.21	0.02	14.53	0.11
<b>TOTAL VALUE OF PRODUCTION</b>	<b>240.57</b>	<b>1.56</b>	<b>238.53</b>	<b>1.55</b>	<b>245.30</b>	<b>1.57</b>	<b>238.56</b>	<b>1.56</b>	<b>279.45</b>	<b>1.55</b>	<b>216.39</b>	<b>1.57</b>
Cash Costs	87.76	0.57	62.54	0.41	104.31	0.67	72.87	0.48	71.80	0.40	97.68	0.71
Feed – Sugar	17.52	0.11	18.38	0.12	15.09	0.10	18.59	0.12	18.48	0.10	16.93	0.12
Hired Labour	61.03	0.40	55.62	0.36	68.57	0.44	58.19	0.38	62.55	0.35	60.08	0.44
<b>A TOTAL CASH COSTS</b>	<b>166.31</b>	<b>1.08</b>	<b>136.54</b>	<b>0.89</b>	<b>187.97</b>	<b>1.28</b>	<b>149.65</b>	<b>0.98</b>	<b>152.83</b>	<b>0.85</b>	<b>174.69</b>	<b>1.27</b>
B Operator and Family Labour	11.57	0.08	37.28	0.24	9.26	0.06	8.44	0.06	19.95	0.11	6.35	0.05
C Capital Costs	63.73	0.41	54.99	0.36	68.52	0.44	62.80	0.41	63.06	0.35	64.14	0.47
<b>TOTAL PRODUCTION COST- (A+B+C)</b>	<b>226.32</b>	<b>1.47</b>	<b>219.93</b>	<b>1.43</b>	<b>256.50</b>	<b>1.65</b>	<b>212.46</b>	<b>1.39</b>	<b>224.84</b>	<b>1.25</b>	<b>227.25</b>	<b>1.65</b>
<b>RETURN OVER CASH COSTS</b>	<b>74.26</b>	<b>0.48</b>	<b>101.99</b>	<b>0.66</b>	<b>45.60</b>	<b>0.29</b>	<b>83.84</b>	<b>0.55</b>	<b>126.62</b>	<b>0.77</b>	<b>41.70</b>	<b>0.30</b>
<b>RETURN TO INVESTMENT</b>	<b>19.89</b>	<b>0.13</b>	<b>18.60</b>	<b>0.12</b>	<b>(3.35)</b>	<b>(0.02)</b>	<b>31.61</b>	<b>0.21</b>	<b>58.32</b>	<b>0.32</b>	<b>(4.00)</b>	<b>(0.03)</b>
<b>RETURN TO EQUITY</b>	<b>14.24</b>	<b>0.09</b>	<b>18.60</b>	<b>0.12</b>	<b>(11.19)</b>	<b>(0.07)</b>	<b>26.11</b>	<b>0.17</b>	<b>54.62</b>	<b>0.30</b>	<b>(10.86)</b>	<b>(0.08)</b>
<b>AVERAGE INVESTMENT</b>	<b>585.57</b>	<b>3.81</b>	<b>615.81</b>	<b>4.09</b>	<b>564.05</b>	<b>3.62</b>	<b>591.21</b>	<b>3.87</b>	<b>644.35</b>	<b>3.58</b>	<b>549.02</b>	<b>3.99</b>
*Includes consumer pack sales, honey inventory and wax/pollen/other sales												
** Includes crop insurance and miscellaneous receipts												

Source: Table 18, 2008 Report



**Appendix 10: Summary of Honey Production Costs and Returns by Regions and Size of Operation, 2005**

	ALBERTA		REGION						SIZE OF OPERATION			
			SOUTHERN, CENTRAL AND NORTH-EAST		NORTH-WEST		PEACE RIVER		UP TO 1,000 HIVES		OVER 1,000 HIVES	
Average Number of Hives	1,720		1,705		1,476		1,951		403		2,732	
Average Yield Per Hive (lb)	148.93		137.86		169.18		155.51		123.91		151.77	
	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb
Bulk Honey Sales	135.40	0.91	83.07	0.60	154.48	0.91	128.54	0.83	126.41	1.02	107.98	0.71
Other Honey Sales/Inventory*	7.96	0.05	43.83	0.32	31.01	0.18	17.01	0.11	13.25	0.25	35.61	0.23
Miscellaneous Income**	3.08	0.02	2.64	0.02	3.35	0.02	3.68	0.02	10.05	0.08	2.49	0.02
<b>TOTAL VALUE OF PRODUCTION</b>	146.44	0.98	129.54	0.94	188.84	1.12	149.23	0.96	149.68	1.21	146.07	0.96
Cash Costs	48.32	0.32	41.77	0.34	34.19	0.20	68.67	0.44	64.69	0.52	50.16	0.33
Feed – Sugar	13.50	0.09	12.71	0.09	14.63	0.09	14.18	0.09	13.07	0.11	13.55	0.09
Hired Labour	41.01	0.28	36.91	0.27	45.11	0.27	45.59	0.29	13.06	0.11	44.18	0.29
<b>A TOTAL CASH COSTS</b>	102.83	0.69	91.39	0.66	93.93	0.56	128.44	0.83	90.82	0.73	107.89	0.71
B Operator and Family Labour	5.16	0.03	4.20	0.03	8.31	0.05	4.86	0.03	34.34	0.28	1.85	0.01
C Capital Costs	60.60	0.41	55.98	0.41	60.85	0.36	68.51	0.44	66.07	0.58	59.98	0.40
<b>TOTAL PRODUCTION COST- (A+B+C)</b>	168.59	1.13	151.58	1.10	163.09	0.96	201.81	1.30	191.24	1.54	166.02	1.09
<b>RETURN OVER CASH COSTS</b>	31.09	0.21	26.92	0.20	84.33	0.50	4.81	0.03	41.27	0.33	29.94	0.20
<b>RETURN TO INVESTMENT</b>	(16.99)	(0.14)	(20.51)	(0.15)	26.28	0.16	(49.67)	(0.32)	(37.53)	(0.30)	(18.46)	(10.12)
<b>RETURN TO EQUITY</b>	(22.15)	(0.15)	(22.03)	(0.16)	25.70	0.15	(52.58)	(0.34)	41.55	(0.34)	(19.95)	(0.13)
<b>AVERAGE INVESTMENT</b>	538.24	3.61	496.20	3.60	576.481	3.41	587.62	3.78	605.18	4.88	530.64	3.50
*Includes consumer pack sales, honey inventory and wax/pollen/other sales												
** Includes crop insurance and miscellaneous receipts												

Source: Table 16, 2005 Report

**Appendix 11: Summary of Honey Production Costs and Returns by Regions and Size of Operation, 2002**

	ALBERTA		REGION						SIZE OF OPERATION			
			SOUTHERN, CENTRAL AND NORTH-EAST		NORTH-WEST		PEACE RIVER		UP TO 1,000 HIVES		OVER 1,000 HIVES	
Average Number of Hives	1,485		1,617		1,879		565		598		2,372	
Average Yield Per Hive (lb)	171.11		155.95		179.92		155.85		189.41		166.50	
	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb
Bulk Honey Sales	321.72	1.88	272.94	1.75	347.21	1.93	291.79	1.87	249.67	1.32	339.89	2.04
Other Honey Sales/Inventory*	43.87	0.25	47.23	0.30	41.98	0.23	46.77	0.30	103.84	0.55	29.42	0.18
Miscellaneous Income**	6.36	0.04	3.65	0.02	8.07	0.04	2.71	0.02	2.67	0.01	7.29	0.04
<b>TOTAL VALUE OF PRODUCTION</b>	<b>371.95</b>	<b>2.17</b>	<b>323.82</b>	<b>2.08</b>	<b>397.26</b>	<b>2.21</b>	<b>341.27</b>	<b>2.19</b>	<b>353.51</b>	<b>1.87</b>	<b>376.60</b>	<b>2.24</b>
Cash Costs	60.40	0.35	53.07	0.34	53.89	0.30	124.556	0.80	107.67	0.57	48.47	0.29
Feed – Sugar	13.29	0.08	8.39	0.05	14.63	0.08	18.38	0.12	18.10	0.10	12.08	0.07
Hired Labour	35.07	0.20	38.55	0.25	34.58	0.19	28.38	0.18	31.55	0.16	35.96	0.22
<b>A TOTAL CASH COSTS</b>	<b>108.76</b>	<b>0.64</b>	<b>100.01</b>	<b>0.64</b>	<b>103.10</b>	<b>0.57</b>	<b>171.31</b>	<b>1.10</b>	<b>157.32</b>	<b>0.83</b>	<b>96.51</b>	<b>0.58</b>
B Operator and Family Labour	11.22	0.07	8.89	0.06	11.03	0.06	19.13	0.12	24.83	0.13	7.78	0.05
C Capital Costs	48.17	0.28	32.50	0.21	51.78	0.29	69.00	0.44	62.53	0.33	44.55	0.27
<b>TOTAL PRODUCTION COST- (A+B+C)</b>	<b>159.10</b>	<b>0.93</b>	<b>136.76</b>	<b>0.88</b>	<b>155.61</b>	<b>0.86</b>	<b>246.18</b>	<b>1.58</b>	<b>231.62</b>	<b>1.22</b>	<b>140.82</b>	<b>0.85</b>
<b>RETURN OVER CASH COSTS</b>	<b>263.19</b>	<b>1.54</b>	<b>223.81</b>	<b>1.44</b>	<b>294.16</b>	<b>1.63</b>	<b>169.94</b>	<b>1.09</b>	<b>196.19</b>	<b>1.04</b>	<b>280.08</b>	<b>1.68</b>
<b>RETURN TO INVESTMENT</b>	<b>217.16</b>	<b>1.27</b>	<b>187.59</b>	<b>1.20</b>	<b>247.88</b>	<b>1.38</b>	<b>97.48</b>	<b>0.63</b>	<b>123.49</b>	<b>0.65</b>	<b>240.77</b>	<b>1.45</b>
<b>RETURN TO EQUITY</b>	<b>212.85</b>	<b>1.24</b>	<b>187.06</b>	<b>1.20</b>	<b>241.65</b>	<b>1.34</b>	<b>95.10</b>	<b>0.61</b>	<b>121.89</b>	<b>0.64</b>	<b>235.78</b>	<b>1.42</b>
<b>AVERAGE INVESTMENT</b>	<b>434.88</b>	<b>2.54</b>	<b>328.17</b>	<b>2.10</b>	<b>450.71</b>	<b>2.51</b>	<b>634.76</b>	<b>4.07</b>	<b>550.32</b>	<b>2.91</b>	<b>405.78</b>	<b>2.44</b>
*Includes consumer pack sales, honey inventory and wax/pollen/other sales												
** Includes crop insurance and miscellaneous receipts												

Source: Table 14, 2002 Report

**Appendix 12: Summary of Honey Production Costs and Returns by Regions and Size of Operation, 2000**

	ALBERTA		REGION						SIZE OF OPERATION			
			SOUTHERN, CENTRAL AND NORTH-EAST		NORTH-WEST		PEACE RIVER		UP TO 1,000 HIVES		OVER 1,000 HIVES	
	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb	\$/Hive	\$/lb
Average Number of Hives	1,478		1,603		1,746		1,018		830		2,033	
Average Yield Per Hive (lb)	147.61		181.30		135.34		120.85		124.82		155.58	
Bulk Honey Sales	107.54	0.73	134.56	0.74	94.93	0.70	92.02	0.76	95.38	0.76	111.79	0.72
Other Honey Sales/Inventory*	10.28	0.07	9.23	0.05	10.96	0.08	10.58	0.09	12.32	0.10	9.58	0.06
Miscellaneous Income**	9.40	0.06	5.03	0.03	7.04	0.05	21.31	0.18	7.69	0.06	9.99	0.06
<b>TOTAL VALUE OF PRODUCTION</b>	<b>127.21</b>	<b>0.86</b>	<b>148.82</b>	<b>0.82</b>	<b>112.88</b>	<b>0.83</b>	<b>123.91</b>	<b>1.03</b>	<b>115.40</b>	<b>0.92</b>	<b>131.35</b>	<b>0.84</b>
Cash Costs	50.28	0.34	67.83	0.37	32.83	0.24	60.09	0.50	58.85	0.47	47.30	0.30
Feed – Sugar	9.70	0.07	12.62	0.07	4.45	0.03	16.36	0.13	10.89	0.09	9.28	0.06
Hired Labour	32.04	0.28	35.28	0.20	25.92	0.19	40.04	0.33	29.44	0.23	32.94	0.22
<b>A TOTAL CASH COSTS</b>	<b>92.02</b>	<b>0.62</b>	<b>115.73</b>	<b>0.64</b>	<b>63.20</b>	<b>0.47</b>	<b>116.49</b>	<b>0.96</b>	<b>99.18</b>	<b>0.79</b>	<b>89.52</b>	<b>0.58</b>
<b>B Operator and Family Labour</b>	<b>7.40</b>	<b>0.05</b>	<b>7.53</b>	<b>0.04</b>	<b>8.32</b>	<b>0.06</b>	<b>5.21</b>	<b>0.04</b>	<b>11.94</b>	<b>0.10</b>	<b>5.81</b>	<b>0.04</b>
<b>C Capital Costs</b>	<b>31.26</b>	<b>0.21</b>	<b>36.93</b>	<b>0.20</b>	<b>28.72</b>	<b>0.21</b>	<b>27.78</b>	<b>0.23</b>	<b>30.49</b>	<b>0.24</b>	<b>31.52</b>	<b>0.20</b>
<b>TOTAL PRODUCTION COST- (A+B+C)</b>	<b>130.68</b>	<b>0.89</b>	<b>160.19</b>	<b>0.88</b>	<b>100.20</b>	<b>0.74</b>	<b>149.48</b>	<b>1.24</b>	<b>141.61</b>	<b>1.13</b>	<b>126.86</b>	<b>0.82</b>
<b>RETURN OVER CASH COSTS</b>	<b>35.19</b>	<b>0.24</b>	<b>33.09</b>	<b>0.18</b>	<b>49.68</b>	<b>0.37</b>	<b>7.42</b>	<b>0.06</b>	<b>16.21</b>	<b>0.13</b>	<b>41.83</b>	<b>0.27</b>
<b>RETURN TO INVESTMENT</b>	<b>1.18</b>	<b>0.01</b>	<b>-4.07</b>	<b>-0.02</b>	<b>13.71</b>	<b>0.10</b>	<b>-17.40</b>	<b>-0.14</b>	<b>-23.15</b>	<b>-0.19</b>	<b>9.69</b>	<b>0.06</b>
<b>RETURN TO EQUITY</b>	<b>-3.47</b>	<b>-0.02</b>	<b>-11.36</b>	<b>-0.06</b>	<b>12.64</b>	<b>0.09</b>	<b>-25.57</b>	<b>-0.21</b>	<b>-26.22</b>	<b>-0.21</b>	<b>4.49</b>	<b>0.03</b>
<b>AVERAGE INVESTMENT</b>	<b>343.91</b>	<b>2.33</b>	<b>381.59</b>	<b>2.11</b>	<b>327.42</b>	<b>2.42</b>	<b>319.93</b>	<b>2.65</b>	<b>333.84</b>	<b>2.67</b>	<b>347.43</b>	<b>2.23</b>
*Includes consumer pack sales, honey inventory and wax/pollen/other sales												
** Includes crop insurance and miscellaneous receipts												

Source: Table 16, 2000 Report