

# Guidelines For Estimating Honey Production Costs

Date: June, 1997

This guide is designed to provide planning information and a format for calculating cost of honey production for a 1,000-colony beekeeping enterprise.

It incorporates indoor wintering into its management practice and does not require package bees for annual replacement stock.

When interpreting these costs for an individual situation, adjustments may be required due to differences in management practices and facilities. Each assumption must be examined and adjusted where necessary.

This budget does not include costs beyond the production and extraction of honey. Transportation costs of honey to a wholesaler or retailer are not included in the budget.

Wax sales were taken into consideration in calculating breakeven costs.

The production costs included in this enterprise budget are not intended as a cost study of the beekeeping industry in Manitoba.

Mention of a proprietary product does not constitute an endorsement.

### Honey Cost of Production Summary

	<b>\$/Colony</b>	<b>\$/lb</b>	<b>Your Cost</b>
<b>A. Operating Costs</b>			
<b>1. Feed Costs</b>			
1.01 Sugar Syrup	13.20	0.07	
1.02 Pollen Substitute	0.28	0.00	
<b>Total Feed Cost</b>	<b>\$13.48</b>	<b>\$0.07</b>	
<b>2. Other Operating Costs</b>			
2.01 Veterinary Medicine & Supplies	7.28	0.04	
2.02 Stock Replacement	3.80	0.02	
2.03 Fuel	6.00	0.03	
2.04 Machinery, Maintenance & Supplies	7.65	0.04	
2.05 Building Maintenance & Repairs	5.40	0.03	
2.06 Utilities	4.00	0.02	
2.07 Barrels	4.35	0.02	
2.08 Building Vehicle & Liability Insurance	4.10	0.02	
2.09 Small Tools, Equipment & Supplies	1.00	0.01	
2.10 Memberships & Associations	1.00	0.01	
2.11 Miscellaneous Costs	3.00	0.02	
Subtotal Operating Costs	61.06	0.34	
2.12 Operating Interest	2.44	0.01	
2.13 Wax Sales	(9.45)	(0.05)	
<b>Total Operating Costs</b>	<b>\$54.05</b>	<b>\$0.30</b>	
<b>B. Fixed Costs</b>			
<b>3. Depreciation</b>			
3.01 Buildings	4.96	0.03	
3.02 Machinery & Equipment	10.19	0.06	
3.03 Hives	5.40	0.03	
<b>4. Investment</b>			
4.01 Buildings	3.78	0.02	
4.02 Machinery & Equipment	4.63	0.03	
4.03 Hives	3.30	0.02	
4.04 Bees	4.75	0.03	
<b>Total Fixed Costs</b>	<b>\$37.01</b>	<b>\$0.21</b>	
<b>Total Operating &amp; Fixed Costs</b>	<b>\$91.06</b>	<b>\$0.51</b>	
<b>C. Labour</b>	<b>\$32.00</b>	<b>\$0.18</b>	
<b>Total Cost of Production</b>	<b>\$123.06</b>	<b>\$0.68</b>	

<b>Break-Even Price</b>	<b>\$/Colony</b>	<b>\$/Pound</b>	
Operating Cost	\$54.05	\$0.30	
Operating & Fixed Cost	\$91.06	\$0.51	
Operating, Fixed Cost & Labour	\$123.06	\$0.68	
Breakeven Price/lb = Production Cost/lbs of Honey/Colony			

## Honey Production Costs - Input

### Assumptions

1. This budget outlines the cost of honey production.
2. Excess wax is sold at market price
3. Honey is marketed in bulk, with limited retail sales.

### Operation Profile

Number of Hives	<b>1,000</b>
Market Value per Hive (5 boxes top & bottom)	<b>\$120.00</b>
Average Number of lbs of Honey per Hive	<b>180</b>
Value of Bees per Hive	<b>\$95.00</b>
Value of Honey per Pound	<b>\$1.20</b>
Pounds Wax for sale/Hive	<b>2.70</b>
Price of Wax per Pound	<b>\$3.50</b>

### Feed Costs

**Sugar Syrup** **20.00** kg/colony

#### Pollen Substitute

Amount of sugar	<b>0.15</b> kg/hive
Cost for sugar	<b>\$0.66</b> /kg
Amount of soybean flour	<b>0.15</b> kg/hive
Cost for soybean flour	<b>\$1.19</b> /kg

Footnote: Feeding implies the number of pails per colony.

1 kilogram (kg) = 2.2046 pounds (lbs)

1 tonne (t) = 1,000 kg

### Other Operating Costs

#### Veterinary Medicine & Supplies

##### Terramycin (TM25)

Yearly Number of Terramycin Treatments	<b>4</b>
Mass of TM25 per Treatment	<b>5.00</b> grams
Cost of TM25	<b>\$0.01</b> /gram
Mass of icing sugar per Treatment	<b>25.00</b> grams
Cost of icing sugar	<b>\$0.80</b> /kg

**Fumidil B**

Number of Fumidil Bottles	20 /year
Cost per Bottle	\$95.00

**Tracheal Mite Control**

Number of Menthol Boards	1 /year
Cost per Board	\$1.40
Monitoring Costs - Total	\$75.00

**Varroa Mite Control**

Number of ApistanStrips	2 /colony
Apistan Cost	\$1.88 /strip
Formic Acid Treatments	5 /colony
Volume of Formic Acid/treatment	0.04 litres
Formic Acid Cost	\$5.60 /litre
Monitoring Costs	\$1.88 /colony

**Queen Replacement**

Percentage Queen Replacement	25.00 %
Cost per Replacement Queen	\$14.00
Replacement Queen Cells	150
Cost per Replacement Queen Cell	\$2.00

**Fuel**

Annual Fuel Cost (Transportation of honey & hives, checking etc.)	\$6,000.00
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**Utilities**

Annual Hydro Cost	\$3,000.00
Annual Telephone Cost	\$1,000.00

**Barrels**

Barrel size	620 lbs
Cost per barrel	\$15.00

**Insurance**

Building & Liability Insurance/\$100 Capital Investm	\$0.75
Vehicle Insurance (Total Annual Cost)	\$1,100.00
National Tripartite Stabilization Premium	\$0.0000 /lb

**Small Tools, Equipment & Supplies**

Total Annual Cost **\$1,000.00**  
includes office supplies, shop  
supplies and equipment. (non-capital items)

**Memberships, Subscriptions & Research**

Total Annual Cost **\$1,000.00**  
annual costs of memberships, licensing  
fees, conventions, etc.

**Miscellaneous Costs**

Total Annual Cost **\$3,000.00**  
annual charges for accounting, legal  
services, cost of carrying barrels, etc.

**Interest Rates**

Investment Rate **5.00** %  
Operating Interest Rate **8.00** %

## Capital Costs

	Original Value	Salvage Value	Useful Life
<b>Buildings</b>			
Wintering Complex includes heating & ventilation equipment	\$50,000	10 %	25 years
Honey House, Warehouse, and Vehicle Storage includes heating, ventilation equipment, plumbing, and loading dock	\$85,000	10 %	25 years
Well	\$2,500	0 %	25 years
<b>Total Building Value</b>	<b>\$137,500</b>		
<b>Machinery &amp; Equipment</b>			
+ Ton Truck (used)	\$18,000	20 %	10 years
1 Ton Truck (new)	\$40,000	20 %	10 years
3 Ton Truck (used, with trailer)	\$20,000	10 %	10 years
Rough Terrain Forklift	\$25,000	15 %	15 years
Extracting & Other Equipment	\$50,000	30 %	15 years
<b>Total Machinery &amp; Equipment</b>	<b>\$153,000</b>		
<b>Total Value Of Hives</b>	<b>\$120,000</b>	<b>10 %</b>	<b>20 years</b>
<b>Total Spring Value Of Bees</b>	<b>\$95,000</b>		
<b>Total Capital Investment</b>	<b>\$505,500</b>		
<b>Labour</b>			
Total Hours/Colony/Year		3.00 hours	
Wage		\$8.00 /hour	

Footnote: The Total Number of Labour Hours includes all hours spent working, not only hired labour.

## Honey Cost of Production Worksheet

### A. Operating Costs

Your Cost

#### 1. Feed Costs

##### 1.01 Sugar Syrup Mixture

	20.00	kg sugar/year	_____
x	<u>\$0.66</u>	/kg sugar	_____
=	<b>\$13.20</b>	<b>/colony</b>	_____

##### 1.02 Pollen Substitute

	0.15	kg pollen substitute/year	_____
x	<u>\$0.66</u>	/kg sugar	_____
=	\$0.10	/colony	_____

	0.15	kg soybean flour/year	_____
x	<u>\$1.19</u>	/kg soybean flour	_____
=	\$0.18	/colony	_____

	<b>Total =</b>	<b>\$0.28 /colony</b>	_____
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#### 2. Other Operating Costs

##### 2.01 Veterinary Medicine & Supplies

Terramycin

	5.00	grams terramycin/treatment	_____
x	<u>\$0.01</u>	/gram of Terramycin	_____
=	\$0.05	terramycin cost/treatment	_____

	25.00	grams icing sugar/treatment	_____
x	\$0.80	/kg of icing sugar	_____
÷	<u>1,000</u>	grams/kg	_____
=	\$0.02	icing sugar cost/treatment	_____

	\$0.07	ingredient cost /treatment	_____
x	<u>4</u>	treatments	_____
=	\$0.28	terramycin treatment /colony	_____

<b>Fumidil B</b>			
	20	bottles of fumidil B	_____
x	<u>\$95.00</u>	<u>/bottle</u>	_____
=	\$1,900.00	total cost	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$1.90	fumidil B cost/colony	_____
<b>Tracheal Mite</b>			
	\$75.00	monitoring cost	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$0.08	tracheal mite monitoring/colony	_____
	1	menthol board /colony	_____
x	<u>\$1.40</u>	<u>cost/board</u>	_____
=	\$1.40	tracheal mite treatment /colony	_____
÷	<u>2</u>	<u>alternate years</u>	_____
=	\$0.70	tracheal mite treatment /colony	_____
	\$0.78	tracheal mite cost/colony	_____
<b>Varroa Mite</b>			
	\$1.88	monitoring cost/colony	_____
	2	apistan strips/colony	_____
x	<u>\$1.88</u>	<u>/strip</u>	_____
=	\$3.76	/colony	_____
÷	<u>2</u>	<u>alternate years</u>	_____
=	\$1.88	apistan treatment/colony	_____
	0.04	litres formic acid/treatment	_____
x	\$5.60	/litre	_____
x	<u>5</u>	<u>number of treatments/colony</u>	_____
=	\$1.12	formic acid treatment/colony	_____
÷	<u>2</u>	<u>alternate years</u>	_____
=	\$0.56	formic acid treatment/colony	_____
	\$4.32	varroa mite cost/colony	_____
<b>Total =</b>	<b>\$7.28</b>	<b>/colony</b>	_____

**2.02 Stock Replacement**

	250	replacement queens	_____
x	\$14.00	/queen	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$3.50	/colony	_____

	150	queen cells	_____
x	\$2.00	/queen cell	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$0.30	/colony	_____

**Total = \$3.80 /colony** \_\_\_\_\_

**2.03 Fuel**

	\$6,000.00	total cost of fuel	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	<b>\$6.00</b>	<b>/colony</b>	_____

**2.04 Machinery, Maintenance & Supplies**

Maintenance is assumed to be 5% of capital, and is charged annually

+ Ton Truck

	\$18,000	capital cost	_____
x	5.00	% estimated rate	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$0.90	/colony	_____

1 Ton Truck

	\$40,000	capital cost	_____
x	5.00	% estimated rate	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$2.00	/colony	_____

3 Ton Truck

	\$20,000	capital cost	_____
x	5.00	% estimated rate	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$1.00	/colony	_____

Forklift			
	\$25,000	rough terrain forklift	_____
x	5.00	% estimated rate	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$1.25	/colony	_____

Miscellaneous Equipment			
	\$50,000	capital cost	_____
x	5.00	% estimated rate	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$2.50	/colony	_____

**Total = \$7.65 /colony** \_\_\_\_\_

**2.05 Building Maintenance & Repairs**

Maintenance & Repairs are charged annually  
 at a percentage of net capital cost at a rate of 4%.

Wintering Complex			
	\$50,000	building value	_____
x	4.00	%	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$2.00	/colony	_____

Honey House, Warehouse, Vehicle Storage			
	\$85,000	building value	_____
x	4.00	%	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$3.40	/colony	_____

**Total = \$5.40 /colony** \_\_\_\_\_

**2.06 Utilities (Business portion only)**

	\$3,000.00	hydro cost	_____
+	\$1,000.00	telephone cost	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	<b>\$4.00</b>	<b>/colony</b>	_____

**2.07 Barrels**

	180	average lbs of honey /hive	_____
÷	<u>620</u>	<u>lbs/barrel (capacity)</u>	_____
=	0.29	barrels/colony	_____
x	<u>\$15.00</u>	<u>cost/barrel</u>	_____
=	<b>\$4.35</b>	<b>/colony</b>	_____

**2.08 Insurance**

	\$400,000	total capital invested	_____
x	\$0.75	insurance rate/\$100	_____
÷	100		_____
=	\$3,000.00	total insurance cost	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$3.00	building insurance /colony	_____
	\$1,100.00	total vehicle insurance	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$1.10	vehicle insurance /colony	_____
<b>Total =</b>	<b>\$4.10</b>	<b>/colony</b>	_____

**2.09 Small Tools, Equipment & Supplies**

	\$1,000.00	total annual cost	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	<b>\$1.00</b>	<b>/colony</b>	_____

**2.10 Memberships & Associations**

	\$1,000.00	total annual cost	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	<b>\$1.00</b>	<b>/colony</b>	_____

**2.11 Miscellaneous Costs**

	\$3,000.00	total annual cost	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	<b>\$3.00</b>	<b>/colony</b>	_____

**2.12 Operating Interest**

	\$61.06	annual operating costs	_____
÷	2	average	_____
x	<u>8.00</u>	<u>% operating interest rate</u>	_____
=	<b>\$2.44</b>	<b>/colony</b>	_____

**2.13 Wax Income**

	2.70	lbs wax per hive	_____
x	<u>\$3.50</u>	<u>/lb market price</u>	_____
=	<b>\$9.45</b>	<b>/colony</b>	_____

**B. Fixed Costs**  
**3. Depreciation**

**3.01 Buildings**

Wintering Complex

	\$50,000	original value	_____
-	\$5,000	salvage value	_____
÷	25	years useful life	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$1.80	/colony	_____

Honey House, Warehouse, and Vehicle Storage

	\$85,000	original value	_____
-	\$8,500	salvage value	_____
÷	25	years useful life	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$3.06	/colony	_____

Well

	\$2,500	original value	_____
-	\$0	salvage value	_____
÷	25	years useful life	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$0.10	/colony	_____

**Total = \$4.96 /colony** \_\_\_\_\_

**3.02 Machinery & Equipment**

+ Ton Truck

	\$18,000	original value	_____
-	\$3,600	salvage value	_____
÷	10	years useful life	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$1.44	/colony	_____

1 Ton Truck

	\$40,000	original value	_____
-	\$8,000	salvage value	_____
÷	10	years useful life	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$3.20	/colony	_____

3 Ton Truck

	\$20,000	original value	_____
-	\$2,000	salvage value	_____
÷	10	years useful life	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$1.80	/colony	_____

Rough Terrain Forklift

	\$25,000	original value	_____
-	\$3,750	salvage value	_____
÷	15	years useful life	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$1.42	/colony	_____

Extracting & Other Equipment

	\$50,000	original value	_____
-	\$15,000	salvage value	_____
÷	15	years useful life	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	\$2.33	/colony	_____

**Total = \$10.19 /colony** \_\_\_\_\_

**3.03 Hives**

	\$120,000	original value	_____
-	\$12,000	salvage value	_____
÷	20	years useful life	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	<b>\$5.40</b>	<b>/colony</b>	_____

**4. Investment**

**4.01 Buildings**

	\$137,500	total building value	_____
+	\$13,500	total building salvage value	_____
÷	2	average	_____
x	5.00	% investment rate	_____
÷	<u>1,000</u>	<u>colonies</u>	_____
=	<b>\$3.78</b>	<b>/colony</b>	_____

**4.02 Machinery & Equipment**

	\$153,000	total machinery & equipment	_____
+	\$32,350	total machinery & equipment salvage	_____
÷	2	average	_____
x	5.00	% investment rate	_____
÷	<u>1,000</u>	colonies	_____
=	<b>\$4.63</b>	<b>/colony</b>	_____

**4.03 Hives**

	\$120,000	total colony value	_____
	\$12,000	salvage value	_____
÷	2	average	_____
x	5.00	% investment rate	_____
÷	<u>1,000</u>	colonies	_____
=	<b>\$3.30</b>	<b>/colony</b>	_____

**4.03 Bees**

	\$95.00	bee investment per colony	_____
x	<u>5.00</u>	% investment rate	_____
=	<b>\$4.75</b>	<b>/colony</b>	_____

**C. Labour**

	4.00	hours/colony/year	_____
x	<u>\$8.00</u>	/hour	_____
=	<b>\$32.00</b>	<b>/colony</b>	_____

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**For further information contact your local Manitoba Agriculture and Food office.**

Manitoba Agriculture and Food gratefully acknowledges the assistance of the following in preparation of this factsheet.

Art Bergman  
Lorne Peters

Bill Lockhart  
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Steve Olnick

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