

CAUTION



**If you see the
Beekeeper running,
Try to keep up!**

Beekeeping Land Valuation

Production vs Processing

Processing plants or animals. Activities that take place after the crop or animal has been raised and harvested do not qualify land for special appraisal. Activities such as pasteurizing and bottling milk; fermenting grapes and bottling wine; or slaughtering, dressing, and packing meat will not qualify land for agricultural appraisal.

By definition, any activities a non-producer carries out on agricultural products constitute processing. A non-producer cannot qualify property for agricultural valuation. For example, the operator of a grain silo who purchases grain for storage and re-sale cannot receive agricultural valuation for the land the silo occupies.

Under certain circumstances, however, primary producers may also process agricultural products. In these cases, the land devoted to processing activities does not qualify for agricultural valuation. In such cases, the line between production and processing activities can become extremely fine. Chief appraisers must be certain to gather all facts necessary for making an accurate distinction. No hard-and-fast rules clearly distinguish between production and processing. In general, however, an activity must meet at least one of the following standards before it counts as processing:

- Processing begins with those steps typically carried out at the first level of trade beyond production. Storage or packaging for wholesale trade would constitute "processing," as would slaughtering livestock. The producer's interim storage prior to sale to a wholesaler or other middleman would not. Goods in storage would be exempt as farm products in the hands of the producer, and land devoted to storing them would be eligible for agricultural valuation.
- Processing begins when primary agricultural products are broken into smaller parts or combined with other products. Grain, for example, is processed when it is milled.

Milk is processed when it is separated into butter, milk, and other dairy products. Grapes are processed when they are washed, sorted, or crushed. Vegetables and fruits are processed when they are washed and packaged for sale at the wholesale or retail level.

- Processing begins when activities occur that enhance the value of primary agricultural products. Milling grain, pasteurizing milk, and ginning cotton constitute processing. Packaging products for transport to market would not constitute processing, but packaging them for sale would.

The Important Concept

- Ag appraisal is only on production of honey.
- The appraisal process stops at the point honey is bottled.
- Wholesale honey price is called Bulk Price. This is the value the appraiser should use.
- Processed honey is anything that has been bottled. This is not to be used by the appraiser.
- County Appraisal Districts mistakenly often use the price of wholesale bottled honey, a value that is far too high.

Production vs Profit

Fish

Chief appraisers should analyze the raising of fish or fish products using the same standards they apply to exotic game. Commercial fish production differs from keeping game fish for purely sporting or recreational purposes. This difference is not necessarily related to the scale of the operation, nor is it related to any intent to produce income or make a profit. Raising fish is a qualified agricultural land use when all the elements of a bulk harvest are present. Taking fish by individual line is clearly a recreational activity.

nor is it related to any intent to produce income or make a profit.

- 12. Q.** A property owner plants grapevines, intending to eventually sell grapes to a domestic winery. Over the course of six years he has planted hundreds of acres of vineyards. So far he has not realized a single dollar of income because his vines were too immature. Does the tract qualify?

A. Yes. First, many types of operations require more than a year before a crop can be harvested. The question is whether the preparations meet typical degree of intensity tests. Second, "profit" is not really relevant. 1-d-1 has no requirement for income or profit. 1-d is somewhat different, but even it requires only that the owner intend to produce income.

1-d-1 has no requirement for income or profit.

You want to be able to show production

- It is your job to show that you are not a hobbyist
- This can be shown a number of ways. Keeping a record of income and expenses, opening a checking account for your beekeeping, keeping a calendar of your operations of beekeeping or a schedule of hive checks and extraction...
- Add to your credibility as a beekeeper by showing a calendar of your attendance at TBA Summer Clinics and other educational events

Standard Lease Rate

- Agricultural land value is based on standard lease rates. It is calculated from operators income and expense only when standard lease rates are not available.
- Yard rent for an apiary is usually 3 to 5 pounds of honey once or twice per year.

Appendix B

Estimating Lease Terms from Owner-Operator Budgets

When appraisers cannot find data on comparable leases or are dealing with a highly unusual land class (such as a fish farm or a commercial poultry operation), the owner-operator budget method may enable them to develop an estimated net operating income. On the basis of this net income, they should then estimate the cash amount or share for which a prudent operator would lease the property. The estimated lease is the net to land.

The owner-operator budget method involves five basic steps:

1. Collect information on the gross income that a prudently managed agricultural operation in the subject class would generate.
2. Estimate and subtract the typical production expenses involved in a prudent operation. The result is the net operating income.
3. Determine the amount a prudent owner would receive for leasing land capable of producing that estimated income. The estimated lease amount is the net to land.
4. Repeat the preceding steps for each year of the five-year qualifying period.
5. Average the five estimated nets to land, then capitalize the average into an indicated value.

Estimating the gross income for the subject land class requires appraisers to determine the typical crop mixture or stocking ratio for such properties and the income the property would typically generate from other sources, such as hunting leases or government programs. Multiplying the estimated yield per acre times the estimated price times the percentage planted gives the gross income. Where operators typically grow more than one crop or mix livestock and stocking ratios within a land class or sub-class, the gross income should be weighted to reflect the practices a prudent operator would employ.

After estimating the gross income, appraisers should estimate and subtract the expenses a typical, prudent operator would incur. This expense estimate bears no relation to the expenses shown on an operating statement for income tax purposes. Appraisers should only estimate and deduct those expenses necessary to the ongoing agricultural operation. They should not, for example, deduct any amount for debt service, nor should they deduct income taxes or depreciation of non-typical equipment or improvements.

In general, expenses will include such things as feed, seed, fertilizer, harvesting and labor costs, fuel, and property taxes assessed on agricultural land. In some areas of the state, water depletion may constitute a legitimate deduction. Appraisers should allow for depreciation of agricultural equipment and appurtenances, but they should follow accepted appraisal practice in doing so. They should not use accelerated depreciation figures shown on income tax returns. Appraisers should also estimate and deduct an amount for management expense. Typically, this expense is shown as a percentage of the gross income. Appraisers should base the exact percentage on the typical conditions in the area.

Subtracting estimated expenses from estimated gross income yields the net operating income. On the basis of this estimate, the appraiser should determine the typical lease payment a prudent landowner would require. Comparing the estimated net income for the subject category to estimated net incomes developed from lease information for other land categories should enable the appraiser to complete this step. Once it is completed, the averaging and capitalization are simple mathematical processes.

Appraisers should not use the owner-operator budget method as a substitute for the cash-lease and share-lease methods. The law specifies the use of the lease methods.

Harris County Appraisal District Productivity Value for Beekeeping

Under Open-Space productivity valuation, values are calculated using a modified income approach to determine the per acre value. This is done using cash lease rates that are collected each year through surveys mailed to lessees. The challenge with determining a productivity value for beekeeping using the cash lease method is usually beekeepers do not lease the land on which the hives are located. In most instances, a property owner who has hives located on his land has an open-space valuation on their property.

Using the basic Income/Rate/Value (IRV) formula for developing an income approach to value, we developed a productivity value in beekeeping.

In Texas it is estimated that a hive will produce an average of 74 pounds of honey per year. With the assistance of local beekeepers we estimated an average of \$60 per hive of expenses per year. The average wholesale price for honey in 2011 was \$3.78 per pound. The following is Harris County Appraisal District's 2012 calculation.

Total Income per Hive	74 lbs. x \$3.78 = \$279.72
Total expenses per Hive per year	\$60.00
Net Operating Income (NOI)	\$279.72 - \$ 60.00 = \$219.72
Productivity Value per Hive	\$219.72 / .10 cap rate = \$2,197.20

HCAD's degree of intensity is 6 hives on the first 5 acres with 1 hive for every 2.5 acres up to 20 acres. This would give you a range of 6-12 hives minimum requirement. The productivity value is applied on a per-acre basis; therefore, the following formula was used.

HCAD's minimum requirement on 20 acres is 12 hives. Therefore, the average hives per acres is $12 / 20 = .60$ hives.

Productivity Value per Acre	$\$2,197.20 \times .6$ (minimum hives) = \$1,318.32, or \$1,318.00 per acre.
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The Harris County Model

- The Harris County model has been adopted by many counties in Texas.
- In defense of Harris County, the appraisal of land used for beekeeping had to start with a calculation. I don't believe that the work they have done is intentionally flawed. This is an honest effort to create a model for value.
- But it *is* flawed.

Flawed Assumptions in the Harris Co. Model

- There are 3 pieces of data that are used in the land value calculation: Average pounds of honey per hive per year, Wholesale price of honey in Texas, and Expenses per hive per year.
- Wholesale price is clearly incorrect. Bulk price should be used.
- Expenses per hive is almost certainly incorrect.
- Pounds of honey per hive is area dependent and is probably incorrect for most of Texas.

This is where Harris Co gets it's wholesale price and by definition it is NOT the price appraisal districts should use.

The screenshot shows the National Honey Board website. The main heading is 'Unit Honey Prices by Month - Wholesale'. Below this, there is a table of average wholesale case prices per pound across all reporting regions from 2006 to 2016. The table has 12 columns for the months of the year and 11 rows for the years. A sidebar on the left contains links to various resources, and a 'Featured Topics' section is at the bottom left.

Unit Honey Prices by Month - Wholesale

Average Wholesale Case Price Per Pound Across All Reporting Regions. Data from Bee Culture magazine used by permission. Based upon average price across all reporting regions. Assumes various sizes sold at the same rate.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2006	\$2.74	\$2.86	\$2.75	\$2.57	\$2.67	\$2.76	\$2.66	\$2.56	\$2.80	\$2.42	\$2.62	\$2.61
2007	\$2.81	\$2.70	\$2.77	\$2.79	\$2.67	\$2.67	\$1.82	\$3.01	\$3.01	\$3.20	\$3.02	\$2.82
2008	\$3.04	\$2.94	\$2.91	\$3.09	\$3.04	\$3.18	\$3.21	\$3.20	\$3.27	\$3.41	\$3.41	\$3.27
2009	\$3.27	\$3.27	\$3.23	\$3.20	\$3.34	\$3.30	\$3.54	\$3.46	\$3.33	\$3.35	\$3.48	\$3.31
2010	\$3.47	\$3.35	\$3.44	\$3.41	\$3.32	\$3.48	\$3.45	\$3.50	\$3.51	\$3.57	\$3.32	\$3.66
2011	\$3.72	\$3.51	\$3.64	\$3.75	\$3.73	\$3.75	\$2.77	\$3.01	\$3.76	\$3.59	\$3.79	\$4.12
2012	\$3.94	\$4.10	\$4.17	\$3.92	\$4.01	\$3.97	\$4.32	\$4.16	\$4.18	\$4.11	\$4.28	\$4.29
2013	\$4.23	\$4.27	\$4.24	\$4.35	\$4.43	\$4.41	\$4.42	\$4.43	\$4.52	\$4.40	\$4.49	\$4.33
2014	\$4.41	\$4.35	\$4.37	\$4.11	\$4.34	\$4.75	\$4.79	\$4.75	\$4.93	\$4.52	\$4.81	\$4.70
2015	\$5.00	\$4.78	\$4.97	\$4.94	\$4.24	\$4.98	\$4.94	\$5.06	\$4.85	\$5.00	\$5.13	\$5.14
2016	\$5.04	\$5.15	\$5.04	\$5.20	4.97							

What is wholesale?

- Appraisal districts should be using bulk prices. Honey in a jar “Case Price Per Pound” has been processed and by definition is not correct. The law requires the counties to use a price of honey before it is bottled.

eligible for agricultural valuation.

- Processing begins when primary agricultural products are broken into smaller parts or combined with other products. Grain, for example, is processed when it is milled. Packaging products for transport to market would not constitute processing, but packaging them for sale would.

Average Wholesale Case Price Per Pound Across All Reporting Regions
Based upon average price across all reporting regions. Assumed

	Jan	Feb	Mar	Apr	May
2006	\$2.74	\$2.69	\$2.70	\$2.67	\$2.67

How to find Bulk Honey Price

Number of Colonies, Yield, Production, Stocks, Price, and Value – States and United States: 2014
(Producers with 5 or more colonies that also qualify as a farm, Colonies which produced honey in more than one State were counted in each State)

State	Honey producing colonies ¹	Yield per colony	Production	Stocks December 15 ²	Average price per pound ³	Value of production ⁴
	(1,000)	(pounds)	(1,000 pounds)	(1,000 pounds)	(cents)	(1,000 dollars)
Alabama	7	53	371	26	353	1,310
Arizona	26	39	1,014	193	192	1,947
Arkansas	21	65	1,365	137	204	2,785
California	320	39	12,480	2,995	206	25,709
Colorado	27	37	999	200	211	2,158
Florida	245	60	14,700	1,029	208	36,575
Georgia	73	52	4,526	352	219	9,912
Hawaii	15	93	1,395	140	229	3,195
Idaho	100	34	3,400	850	203	6,902
Illinois	8	49	392	94	411	1,611
Indiana	5	52	310	115	318	989
Iowa	35	43	1,505	933	241	3,527
Kansas	7	75	525	84	238	1,250
Kentucky	5	47	235	50	390	931
Louisiana	48	84	4,032	524	218	8,790
Maine	8	47	376	41	469	1,876
Michigan	91	63	5,733	1,635	249	14,275
Minnesota	132	60	7,920	1,428	200	16,315
Mississippi	20	112	2,240	45	201	4,502
Missouri	12	47	564	96	353	2,047
Montana	162	68	14,266	5,132	209	29,795
Nebraska	50	75	3,750	1,698	204	7,660
New Jersey	12	30	360	119	313	1,127
New York	60	55	3,300	1,518	283	9,239
North Carolina	12	43	516	98	349	1,801
North Dakota	490	86	42,140	9,271	199	83,859
Ohio	15	61	915	259	354	3,276
Oregon	71	40	2,840	767	220	6,248
Pennsylvania	17	46	782	203	291	2,275
South Carolina	9	54	486	19	397	1,929
South Dakota	280	87	24,360	5,846	208	90,669
Tennessee	7	53	441	98	376	1,658
Texas	116	78	9,048	2,061	224	20,268
Utah	29	28	812	130	213	1,730
Vermont	3	58	174	61	489	951
Virginia	6	41	246	57	468	1,151
Washington	68	44	2,992	1,157	261	7,829
West Virginia	6	31	186	33	407	757
Wisconsin	53	54	2,862	1,030	238	6,812
Wyoming	38	61	2,318	255	208	4,821
Other States **	31	45	1,404	202	367	5,153
United States **	2,740	65.1	178,270	41,192	217.3	387,381

The 5 year average used in 2016 would be appx.
 \$1.93 per pound.

<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1191>

It is unlikely we extract 74 lbs per hive per year

- In the US, small beekeepers extract a little more than half of what large scale beekeepers extract. While large beekeepers nationally extracted more than 58 pounds per hive last year, beekeepers with 5 hives or less extracted only 31.3 pounds per hive. The reason for this is probably easily understandable. Commercial beekeepers make money from pollination and move their hives to chase the honey flow. They have trucks and forklifts to move pallets of bees across the state or across the country. Small scale beekeepers can't afford the equipment or have the economy of scale to move hives. Their hives will produce much less honey. The report is here: <http://usda.mannlib.cornell.edu/usda/current/Hone/Hone-03-22-2016.pdf>.
- Preliminary Texas Survey Results = 14.4# in '15 and 11.2# in '14

Our cost per hive per year is much higher than \$60

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Nation's Beekeepers Lost 44 Percent of Bees in 2015-16

How much does it cost to replace a working hive?

A 4 frame nuc from Beeweaver is \$290.

That means a 44% loss is \$127 per hive for last year.

Add to that the labor and cost to check hives several times per year, the labor and cost to extract honey, the cost to treat Varroa mites and other pests, the cost of sugar and pollen substitute, normal depreciation of hive boxes and tools and any costs of replacing queens.

We operate at a loss

- From an appraisal districts perspective, considering income and cost applicable **‘to the land’**, most small beekeepers in Texas don’t make money. Our net operating income is negative.
- Our beekeeping **business** may or may not make money, but that is not relevant to the appraisal district.

Beekeeping is Vital to Agriculture

- Bees pollinate many fruits and vegetables, cotton and alfalfa used in animal feed stock.
- Honey bees contribute over 15 Billion dollars to the US economy.
- Honey bees are third in line behind beef and pork in their economic impact.
- What you do as beekeepers is important.

Example

- Mr. Harris and Ms. Kendall are both beekeepers. Each have 12 hives on 20 acres.
- Mr. Harris's property tax is calculated using 74 lbs per hive at \$3.78 per pound.
- Ms. Kendall's property tax is calculated using 32 lbs per hive at \$2.10 per pound.
- Expenses per hive are both calculated at \$60 per year.

	Beekeeper Harris	Beekeeper Kendall
Income per hive	74 lbs x \$3.78 = \$279.72	32 lbs x \$2.10 = \$67.20
Expenses per hive	\$60	\$60
Net Operating Income	\$279.72 - \$60 = \$219.72	\$67.20 - \$60.00 = \$7.20
Productivity Value per Hive	\$219.72 / .10 cap rate = \$2197.20	\$7.20 / .10 cap rate = \$72
Average Hives per Acre	12 hives / 20 acres = .6 hives	12 hives / 20 acres = .6 hives
Productivity Value per Acre	\$2197 x .6 = \$1318 per acre	\$72 x .6 = \$43.20 per acre

Please be a part of our Survey

- We need as many of you to participate as possible.
- The information you provide will help create a tax incentive for small beekeepers across Texas for many year.
- As small beekeepers, you are the foreseeable future of beekeeping.