

Components for Calculating Damages to a Hobby Apiary

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ABSTRACT: *Honeybee apiaries are kept by hobbyists, sidelines, and commercial beekeepers; each tends towards a particular business structure. Hobbyists frequently engage in substantial vertical integration across a diverse array of apiary products sold directly into the retail market. On the revenue side of the enterprise, hobbyists often are cash based. Tort and contract damages focus on monetary measures of loss, and those damages can be difficult to estimate when non-monetary (e.g., leisure; family rearing) inputs and/or outputs are significant.*

I. Apiary Economics

A. Industry Characteristics

1. *Highly concentrated:*
 - over 90% of the honey output by less than 5% of the beekeepers.
 - a. Commercial beekeepers (e.g., 300 + hives; queens or packages).
 - i. Either a primary business (e.g., queens).
 - ii. Or a "joint" production firm (e.g., migratory pollination plus honey production)
 - b. Sideliners (i.e., 25 + hives).
 - i. Usually multiple products (e.g., pollen and honey, pollen, and soap), but typically honey is a major revenue generator.
 - c. Hobbyist (e.g., between 1 and 24 hives; scientists).
 - i. Over 90% of the beekeepers are hobbyists.
 - ii. Typically vertically integrated, multiple product enterprises.
2. *Many close substitutes*
 - a. Since 1970's HFCS dominates the industrial demand for sweeteners.
 - b. Since 1980's imports have captured market share and created intense price competition for low end industrial demand.
 - c. Premium pricing in the local retail market less pressured by forces from national market, but per capita honey consumption is falling.
3. *Production costs and uncertainties have increased dramatically over last 30 years.*
 - a. New pests (i.e., tracheal mites in 1980's; African bees in starting in early 1990's; Varroa mites starting in late 1990's) and requisite treatment modalities.
 - b. Fluctuating policy support for apiculture.
4. *Significant market exit of domestic producers.*

B. Size and Scope of Various Apiary Business Models

1. *Commercial operators dominate the industrial demand forcing all others into role of residual suppliers and price takers at the wholesale bulk commodity prices.*
 - a. Color quality of honey from specific nectar flows (e.g., sweet clover) can offer premium pricing opportunities in the context of industrial blending of honey from multiple sources.
 - b. Diversion of specialty productions (e.g., honey, pollen, wax products) into the local farmers' markets enables hobbyists to sell at premium retail prices rather than bulk wholesale prices.
2. *Apiculture is agriculture and subject to same variations.*
 - a. The more business-like the operation (regardless of size), the more

vulnerable to revenue interruptions due to weather.

- i. Pure hobbyists not seeking a profit, but net monetary losses can exceed utils gained from the hobby.
3. *Because of constraints on available labor needed for extraction and processing (i.e., the least "fun" tasks of beekeeping and one of the few time-sensitive tasks), reduced average total cost (ATC) via mechanization only available to commercial operators.*
 - a. Sideliners are compelled by time constraints to make capital investments in equipment disproportionate to the sideliner's total physical output.
 - b. Hobbyists can purchase machines whose scale matches the hobbyist's output, but which require more muscle power.

C. Focus on the Hobbyist Apiaries

1. *Assuming a hobbyist with 10 hives, then the out-of-pocket investment would be in the neighborhood of \$3,500.*
 - a. Depreciable front end costs for the hive itself and its queen and bees at approximately \$300 per hive.
 - i. The woodenware of a hive might last for decades, but a better accounting estimate of planned replacement would be in the neighborhood of 5 years (e.g., annual depreciation of approximately \$60).
 - b. Annual requeening and ordinary over winter losses translate into recurring costs of \$30 per hive.
 - c. Ancillary tools for beekeeping tasks a depreciable investment of approximately \$500, again with a 5 year life based more on physical loss in the field rather than exhaustion of the tool itself (e.g., annual depreciation of \$10).
 - d. Accordingly, assuming no medical treatments, the annual cost per hive is approximately \$100.
2. *Ball park estimates of annual honey production would be in range of 100 pounds per hive.*
 - a. Year-to-year production can vary between a (30% probability) bad year of 50 pounds and a (10% probability) good year of 200 pounds of harvestable honey per hive.
 - i. If the beekeeper also chooses to harvest pollen (i.e., the protein of the bee's diet) and/or beeswax, then the honey production in that year or in the subsequent years must suffer as bees are pulled off of honey production tasks and onto tasks related to replacing that pollen or beeswax.
 - ii. Harvesting and/or manufacturing (e.g., candles, soaps) products beyond honey increases both investment capital and time commitments.
3. *Assuming 10 hives and 100 pounds per year, the hobbyist beekeeper's break even price is approximately \$1.00 per pound of honey to cover out-of-pocket costs.*
 - a. The bulk price of honey varies by region of the country and roughly ranges between \$0.85 per pound and \$1.40 per pound with a strong tendency towards a median of approximately \$0.95 per pound.
 - b. Hobbyists selling in farmers' markets routinely fetch a premium price of over \$3.00 per pound.
 - i. In addition to the extra time commitment of retail sales,

- the equipment and market entry fees increase annual expenses approximately \$1,000; or with the assumed hives and pounds, approximately doubles annual costs and the break even price.
- ii. The premium prices available in a farmers' market clearly cover all costs related to production and sale of other items (e.g., pollen, candles, soaps).
- c. This break even price does not include the cost of the beekeeper's time.

II. Hobbyists Sues for Losses in the Apiary

A. Contracts

1. *Purchase of Inputs* (e.g., defective queen; delayed delivery of time sensitive input).
2. *Sale of Outputs* (e.g., grocer breaches output contract at twice bulk price).

B. Torts

1. *Intentional* (e.g., parent's child vandalizes hives; wrongful interference with contractual relations).
2. *Negligence* (e.g., neighboring beekeeper tolerates communicable diseases).
3. *Strict Liability* (e.g., pesticide application contrary to regulatory requirements).

C. Property

1. *Trespass* (e.g., domestic versus wild animals invading hives).
2. *Tenant's quiet enjoyment* (e.g., landlord defeats pollination contract).
3. *Nuisance* (e.g., residential homeowner targeting [e.g., attractive nuisance of feeder station] beekeeper's bees for capture and death).

III. Remedies in the form of Damages

A. Compensatory Damages

1. *The standard form of pecuniary damages is to make the plaintiff whole via monetary compensation that supports the plaintiff's entry into the market for a replacement.*
 - a. Especially for the hobbyist beekeepers there are substantial non-pecuniary motivations for the apiary and these losses often are not susceptible to calculation or compensation.
 - i. In the context of personal injury and wrongful death (PI/WD) causes of actions loss of consortium and loss of parental services are recoverable as market substitutes do exist.
 - ii. However, in the context of contracts such losses would be at the far end of consequential damages.
2. *The existence of damages suffered must be proved to a certainty; whereas, the magnitude of damages only need be proved to a reasonable certainty.*
 - a. The business structure of a hobbyist apiary typically is going to have superior records for costs (e.g., cancelled checks and credit card issuers computer records) than for revenues (e.g., cash).
 - i. IRS records are not required (because of tax accounting need not match forensic accounting), but can be helpful, especially to prove engaged in hobby for profit.
 - b. Compensable losses typically exclude costs avoided (e.g., annual requeening after market exit) and losses avoided.
 - i. From a purely pecuniary perspective, often the apiary is not profitable; hence, "damages" might be zero due to the

"benefit" of avoided costs and avoided losses.

- ii. If, however, hedonic (e.g., value of enjoyment of life) damages are recoverable in the jurisdiction, then even an pecuniary unprofitable

B. Consequential Damages

1. *In a commercial context it would be extraordinary if the form contracts failed to disclaim consequential damages.*
 - a. The hobbyist's purchases from merchant suppliers will include nearly all capital investments (e.g., hive bodies; extraction equipment).
2. In the relaxed context of hobbyist apiaries there will be a much higher frequency of failure to adequately (e.g., expressly and conspicuously) disclaim consequential damages.
 - a. Because of the risk of disease transmission coupled with the inability to implement time corrections, the near universal advice to a newbie is to avoid purchase of any used equipment.
 - b. Accordingly, hobbyists are more likely to expose themselves to liability for consequential damages than they are to be able to recover consequential damages.
3. Lost profits are the most frequent form of consequential damages; however the damage reductions attributable to avoided costs and avoided losses are likely to yield consequential damages of zero dollars.

C. Punitive Damages

1. *Substantive due process requires satisfaction of three minimums:*
 - a. *Proportionality to reprehensibility.*
 - b. *Proportionality to compensatory damages* (e.g., ordinarily a maximum ratio of \$10 punitive damages per \$1 compensatory damages).
 - c. *Proportionality to (if any) legislatively created analogous criminal and/or civil fines* (e.g., treble damages for antitrust violations).
2. *Typically, punitive damages are not available*
 - a. However, sufficiently reprehensible intentional torts can support recovery of punitive damages.
 - b. Bad faith breach (e.g., affirmative wrong doing that abuses power) of contract in two contexts (i.e., insurance and employment) can support recover of punitive damages.
3. *Characteristics of apiaries make it likely that sufficiently reprehensible behavior will occur on occasion.*
 - a. Different folks react differently to different stimuli, and bees are capable of stimulating some persons into quite intense emotional states from which reprehensible behavior is predictable (e.g., parent of terrified child).
 - b. Beekeepers can be quite competitive for the scarce resources (e.g., convenient locations that provide shelter from weather, access to water; and adjacent nectar and pollen flows) and then feign ignorance of overlapping flight zones.
 - i. Bees seek to be efficient and will work as close to the hive as feasible, but circular flight zones of between 1 mile radius and 5 mile radius are normal.