Shire Capital Management

Apiculture Industry Overview

2025

Executive Summary

- 75% of global food crop species depend on animal pollination
- 35% of global food volume depends on animal pollination
- China is the world's largest honey producer, producing close to one billion pounds per year
- North America is the largest honey consumer by volume, demanding approximately 1kg/person/year
- Pollination-reliant crops such as almonds and canola have accelerated apiary consolidation
- Since 2022, pollination service receipts have exceeded honey sales for American beekeepers
- The Canadian apiculture market varies by province, shaped by local pollination demand

Global Production

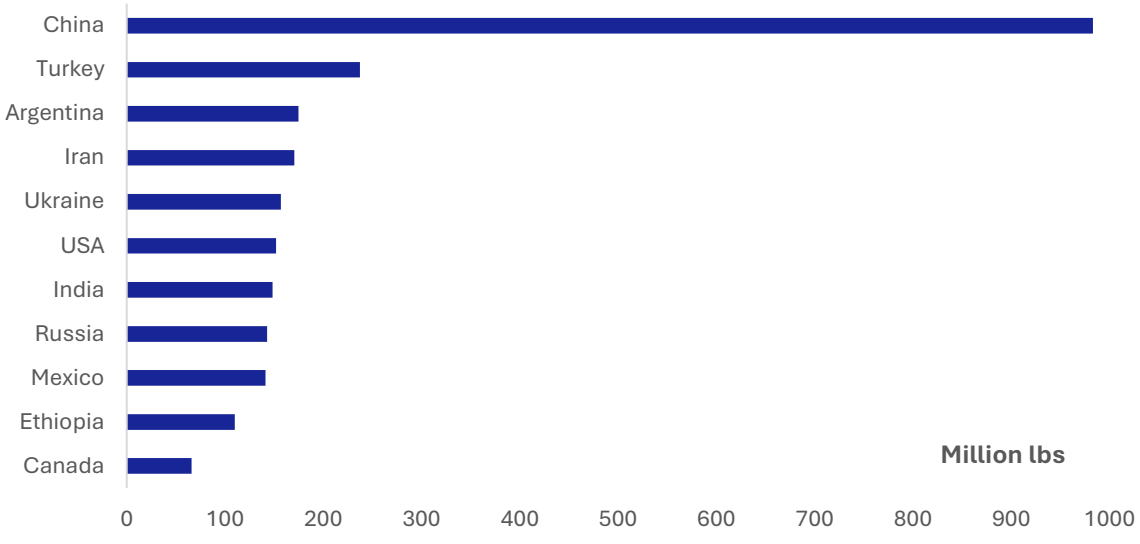
Apiculture underpins modern food production. While many staple cereals self-pollinate or rely on wind, a significant share of global agriculture still depends on bees: roughly 35% of total food volume requires animal-mediated pollination, with managed honeybees providing the majority of that service. Crops such as almonds, berries, tree fruits, oilseeds, and numerous horticultural products would not be commercially viable at scale without intentional pollination management.

Despite its foundational role, pollination services account for approximately 40% of total apiculture revenues. The remainder comes from honey production and bee-related products. China dominates global honey supply, producing close to 800 million lbs annually, more than triple the output of the second-largest producer, Turkey, at approximately 250 million lbs.

Honey, unlike pollination, is a globally traded commodity. While most honey is commoditised, differentiated products such as New Zealand Manuka achieve substantial price premiums—up to 90% of Manuka is exported. China remains the largest exporter overall, shipping roughly 350 million lbs of honey each year, about one-third of its production. Notably, an estimated 75 million lbs of Chinese honey is exported to North America, shaping regional market dynamics, pricing, and supply chain behaviour.

FIGURE 1. GLOBAL HONEY PRODUCTION

2018



FAO Stat

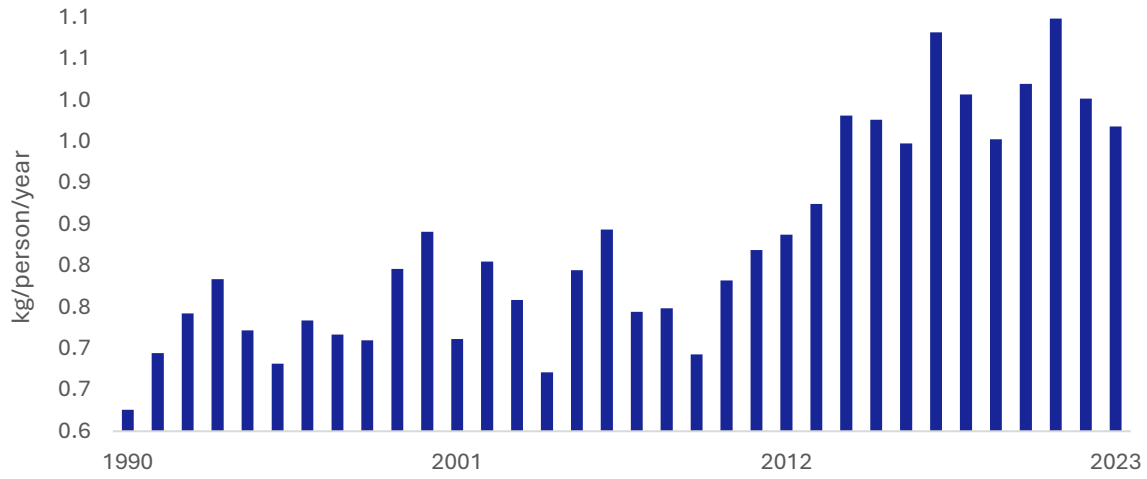
North America

North America is the world's largest honey-consuming region, but it produces only a modest share of global honey - approximately 10%. Despite this production gap, the continent plays an outsized role in the apiculture economy through its dominance in pollination services, led by the U.S. almond sector.

In 2023, the apiculture sector in the U.S. generated approximately $300 million in pollination service revenues, surpassing the $250 million earned from honey sales. This shift reflects a decade-long trend where pollination has overtaken honey as the primary revenue driver for large-scale commercial beekeepers.

This revenue shift has intensified demand for pollination-related transportation across the U.S., with commercial beekeepers moving colonies thousands of miles annually to service high-value crops. Over two-thirds of U.S. beekeepers now engage in interstate migratory pollination. The largest flows move from the Northern Great Plains to California's Central Valley for almond pollination, which alone requires over 2 million hives each February.

FIGURE 2. US LOSS-ADJUSTED HONEY AVAILABILITY
1990-2023



USDA

Almond production accounts for 81% of American pollination receipts.

Almond acreage in California has more than doubled in the past two decades. From 0.5M acres in 2004 to over 1.3M in 2024. During this time, pollination service costs have risen from $90/hive to $250/hive. Almonds are now California's most valuable crop, with expansion driven by strong global demand, supported by health-conscious consumers and growing export markets in Europe and Asia.

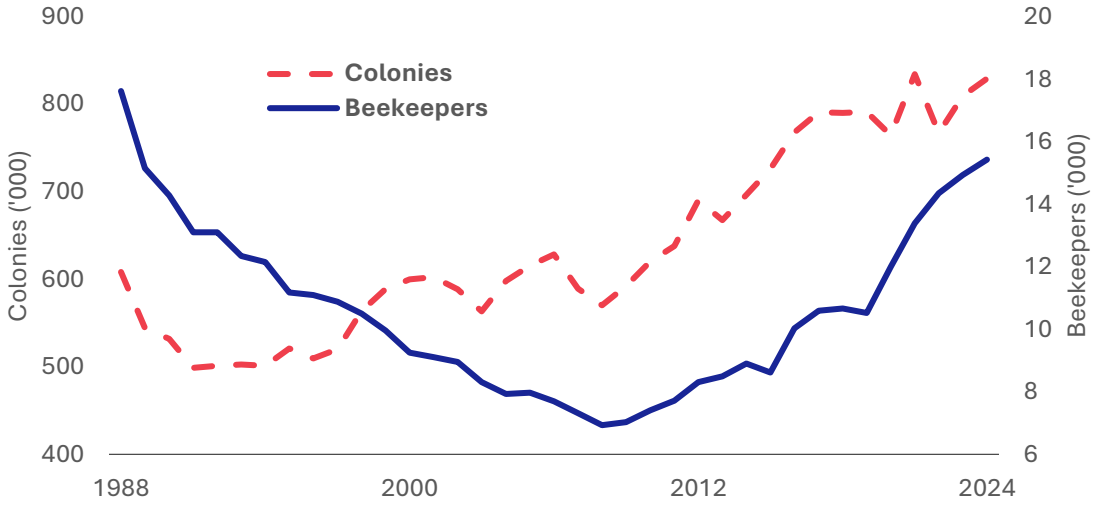
Unlike some fruit or vegetable crops that benefit from supplemental pollination, almonds cannot fruit without insect pollinators. The bloom period is also uniquely synchronised and short - typically just three weeks in February - requiring a sudden, massive influx of hives.

The almond industry's dependence on managed honeybees has professionalised beekeeping at scale and giving rise to specialised pollination-focused operations.

Canada

There are approximately 15,000 beekeepers in Canada operating roughly 800,000 colonies. The structure of the industry varies by province, shaped primarily by local crop demand for pollination rather than honey production. Canola is the defining driver: Canada is the largest global producer, and hybrid seed canola requires intensive, high-quality pollination, concentrating demand in the Prairie provinces. This has accelerated commercialisation and consolidation—particularly in Alberta—where a small cohort of large operators now manage thousands of hives and supply a significant share of commercial pollination services. Nationally, around 20% of beekeepers maintain roughly 80% of all colonies, reflecting a highly skewed, efficiency-driven production structure.

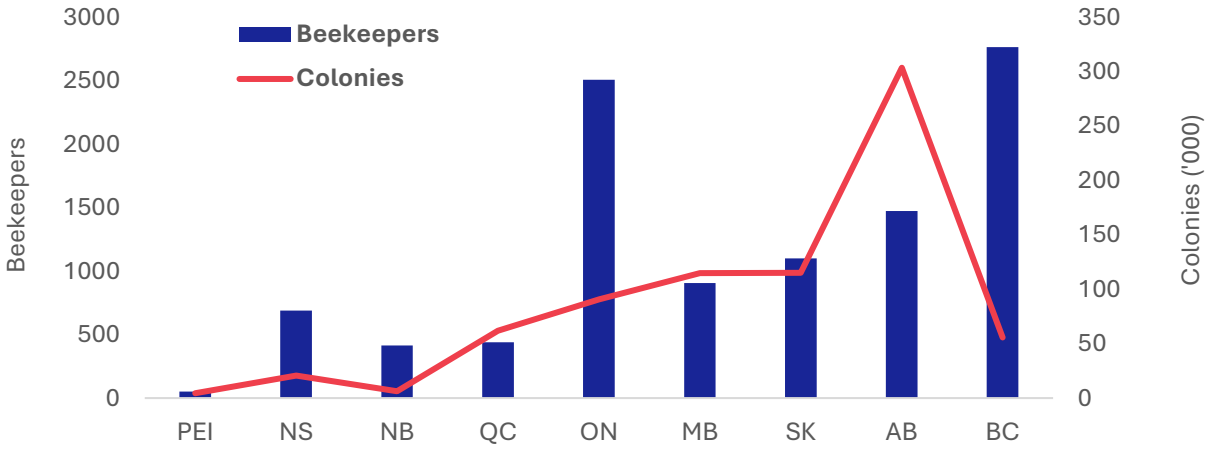
FIGURE 3. CANADIAN BEEKEEPING
1988-2024



Statistics Canada

Pollination demand is further shaped by import restrictions. Live bee imports from the U.S. have been effectively restricted since 1987, with only select queen imports allowed under permit due to biosecurity risks. As a result, Canada's pollination supply must be met primarily through domestic colony growth and interprovincial movement. Anecdotally, growers will purchase land near the border to benefit from foraging colonies.

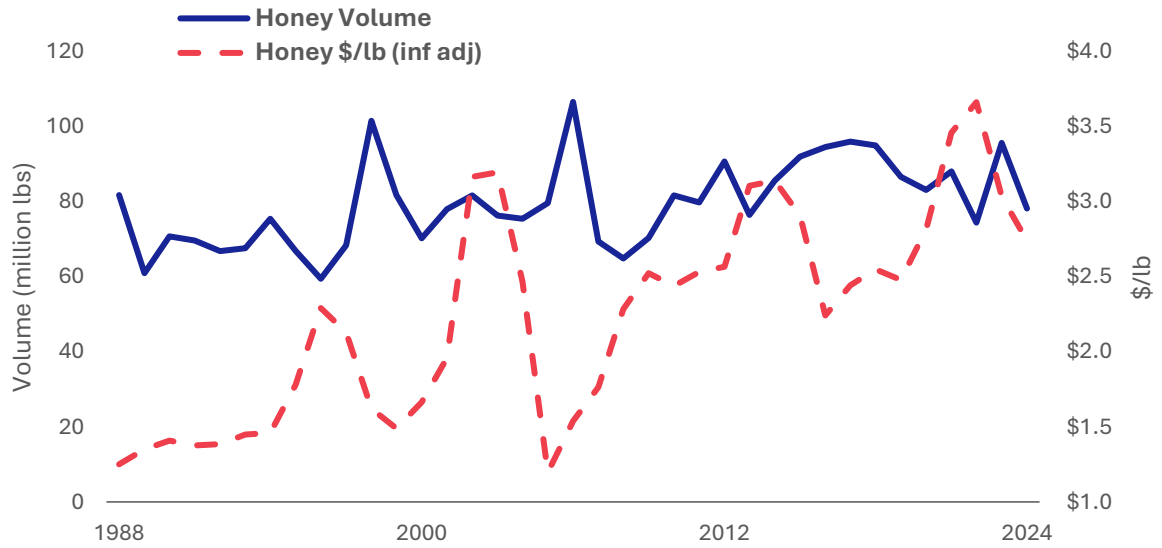
FIGURE 4. CANADIAN PROVINCIAL BEEKEEPING
2019



Statistics Canada

National honey production has been relatively stable over the past decade—typically ranging between 70–100 million pounds annually—yet domestic consumption far exceeds supply, leaving Canada reliant on imported honey (primarily from the U.S., China, and New Zealand). This imbalance has supported a steady upward trend in farm-gate prices, which have nearly doubled since the early 2000s and remain sensitive to global supply disruptions, freight costs, and authenticity concerns in international markets. At the same time, premium, traceable, and region-specific honeys have carved out a fast-growing niche, mirroring broader consumer demand for natural, high-quality, origin-verified food products. As colony health pressures persist and pollination remains the primary revenue driver in the Prairies, honey production is increasingly concentrated among diversified commercial operators with the scale to manage biological risk and access higher-value speciality markets.

FIGURE 5. CANADIAN HONEY PRODUCTION
1988-2024



Statistics Canada

Trends

Honey Quality and Traceability

With the provenance of imported honey in question, domestically produced honey products with greater traceability have seen growing demand.

Adulterated honey refers to honey that has been blended with cheaper sweeteners—most commonly rice syrup, corn syrup, cane sugar, or high-fructose syrups—to reduce production costs. In more sophisticated cases, producers add enzyme-treated syrups engineered to mimic the chemical profile of real honey, making them harder to detect in standard lab tests.

To mask the origin and composition, some exporters also apply ultra-filtration, a process that removes pollen and other floral markers. While filtration itself is not inherently harmful, removing pollen eliminates the natural "fingerprints" that allow regulators to verify both geographic origin and floral source, making adulterated honey easier to disguise in global supply chains.

Several U.S., EU, and Canadian investigations have found large volumes of honey imported through trans-shipment hubs such as Vietnam, Thailand, Malaysia, and India, later confirmed through testing to be of Chinese origin. These practices allow exporters to avoid anti-dumping tariffs and obscure provenance.

Given these concerns, domestic, minimally processed, traceable honey has seen rising demand. Canadian producers in particular benefit from transparent supply chains, strict inspection regimes, and clear floral-source traceability—qualities that buyers and consumers increasingly prioritize.

Colony Collapse Disorder

Colony Collapse Disorder (CCD) is the phenomenon in which the majority of worker bees in a hive abruptly disappear. This phenomenon was first observed around 2006, with winter losses exceeding 50% reported. It is now understood to be driven by a combination of stressors—including parasites like *Varroa destructor*, viral and fungal pathogens, pesticide exposure (notably neonicotinoids), nutritional stress, and climate-related pressures.

Alarmist articles are frequently published in major news outlets about declining bee numbers. While natural pollinators are certainly being impacted by many man-made stressors, there are nuances to keep in mind:

- Much of the public anxiety around "the bees are dying" comes from conflating *wild pollinators* with *managed honey bee colonies*. Wild bees—including bumblebees, mason bees, and hundreds of native solitary species—are indeed experiencing long-term declines driven by habitat loss, pesticide exposure, and climate change. Honey bees, however, are not a wild species; they are a managed agricultural livestock, and in North America are not a native species. Honey bees face biological challenges such as *Varroa destructor* and viral loads, but are not at risk of extinction in the same way wild pollinators are.
- Colony losses also reflect both *biological stressors* and *economic decision-making* within the beekeeping sector. Natural drivers—parasites, pathogens, pesticides, poor forage, and climatic swings—certainly impose pressure on colony health. But colony numbers are also determined by demand for new queens and nuclear colonies – a decision largely driven by honey and pollination prices. As a result, reported colony growth numbers blend genuine biological mortality with routine livestock management decisions.

Commercial Consolidation

Commercial consolidation in apiculture is accelerating, driven primarily by the expansion of monoculture agriculture and rising farm sizes. As crops like almonds and canola scale up, growers increasingly require large, reliable pollination service providers - exceeding the capacity of small beekeepers or wild pollinators. This dynamic is pushing the industry toward fewer but larger players.

In parallel, while honey production remains fragmented at the producer level, the downstream marketing and distribution of honey are increasingly consolidated. Major firms handle bulk sales and branding, creating a divide between small-scale producers and centralised marketing entities.

Regionally, consolidation is most advanced in Canada's Prairie provinces, where large-scale operations dominate both honey production and pollination services. These trends suggest a continued shift toward scale, efficiency, and integrated service delivery in commercial apiculture.

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