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GROWTH OF THE QUÉBEC BEEKEEPING INDUSTRY: IS THERE GENUINE CAUSE FOR JOY?

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The Québec beekeeping industry has seen substantial growth in recent years. Some would say the industry is performing well economically, but the facts tell a different story, especially productivity figures.

Some, of course, will see a direct link with honeybee colony losses. Others will go a step further and say nicotinoids are to blame for the decrease in productivity. The goal of this fact sheet is not to address these specific questions, but rather to explain the paradox of industry growth amidst declining productivity.

THE INDUSTRY MAY BE GROWING, BUT …

Data published by the Institut de la statistique du Québec reveal the trends within the beekeeping industry over the last 15 years. Chart 1 shows that following a trough in 2003, the industry experienced steady growth for a decade in the number of honey producers, number of colonies and total honey production.

The number of producers fell by a third between 1998 and 2003 before rising and returning to the initial number of 300 in 2012. There was a similar decline in number of colonies over the same period, although the recovery was much stronger, reaching 47 203 colonies in 2013 compared with 29 797 in 1998. Despite wider year-to-year fluctuations, total honey production followed the same U-shaped curve, dropping sharply between 1998 and 2003 and then returning to normal over the following decade.

Two key factors drove the strong comeback of beekeepers and honey production. First, demand for pollination services has seen explosive growth since 2003. Chart 2 shows the same U-shaped trend as Chart 1, but this time for demand for pollination services, which plummeted between 1998 and 2003 and then rose dramatically thereafter. The total number of colonies rented for pollination purposes surged from 13 633 in 2003 to 35 588 in 2013. Chart 2 also shows very clearly that the increase in pollination services is driven by growth in blueberry and cranberry production. In 2013, these two crops accounted for 31 800 of the 35 588 honeybee colonies (89%) rented for pollination purposes (see box at end).

Noteworthy is the fact that the per-hive rental fee never fell during the study period, even when demand for pollination services declined between 1998 and 2003. This most likely indicates that low productivity prevented honey producers from lowering their rental fee and adjusting to the lower demand.

Chart 1. Trends in honey production and beekeeper numbers in Québec, 1998-2013

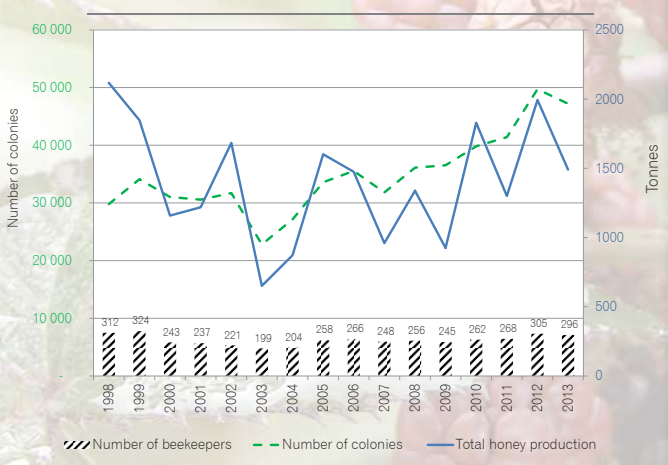
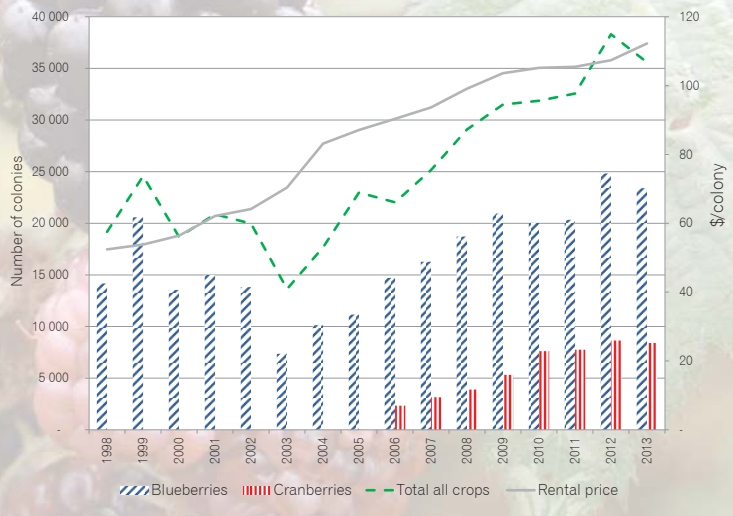


Chart 2. Pollination services provided by Québec beekeepers, 1998-2013



he second factor fuelling the resurgence in beekeeping is the price of honey. Chart 3 illustrates the dramatic rise in honey prices and production values between 1998 and 2013. The price of honey rose from $2.97 per kilogram in 1998 to $7.11 per kilogram in 2013 (+ 240%), while the value of honey production rose 182% from $6.7 million to $12.3 million.

SO, IS THERE A PROBLEM?

So, is there really an economic problem in Québec's beekeeping industry? How can we claim that honeybee colony losses affect the industry's economic performance when the key industry indicators show strong growth?

Still, the productivity trends for beekeeping operations over the same period are cause for serious concern. Charts 4 and 5 illustrate beekeeping productivity trends expressed as per-colony honey yield (kg honey/colony). The difference between the two charts is that 1998 has been dropped from Chart 5 because it was the year of peak yield, at 71 kg honey/colony. Such a high yield at the beginning of the study period could unduly amplify the decrease in productivity. However, even using the period 1999-2013, the right-hand trend and related formula in Chart 5 show that productivity decreased by more than 0.5 kg honey/colony annually. By including 1998 in the analysis, the decrease is over 1 kg honey/colony/year.

The fact that the number of honeybee colonies rented per beekeeper increased from just over 60 in 1998 to 120 in 2013 is also noteworthy. The sharp increase should not be interpreted as a productivity gain, however. The higher number of colonies rented is not the result of productivity gains as such—these gains may be attributable to new beekeeping practices or new technologies—but rather of the surge in demand for pollination services fuelled by the remarkable growth of blueberry and cranberry production. Furthermore, the fact that rental fees for honeybee colonies remained static between 1998 and 2003 (Chart 2), when demand for pollination services was dropping, tends to show that beekeepers could not adjust their rental prices according to demand because of productivity constraints.

Chart 3. Honey price and total production value in Québec, 1998-2013

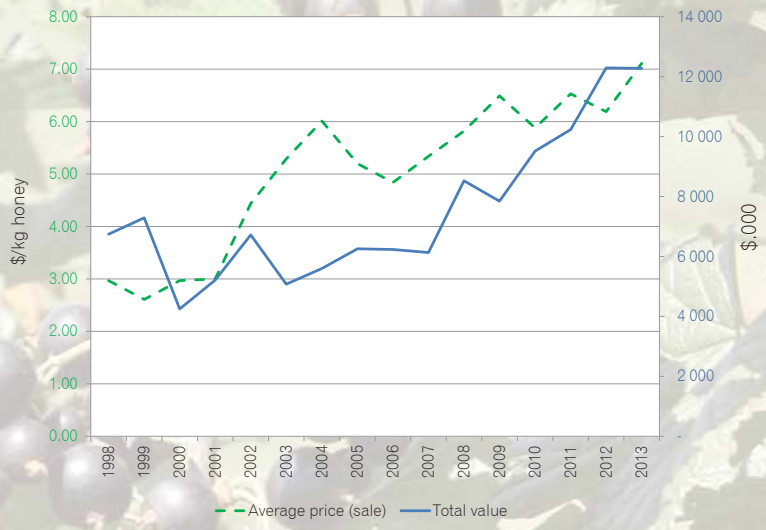


Chart 4. Beekeeping productivity in Québec, 1998-2013

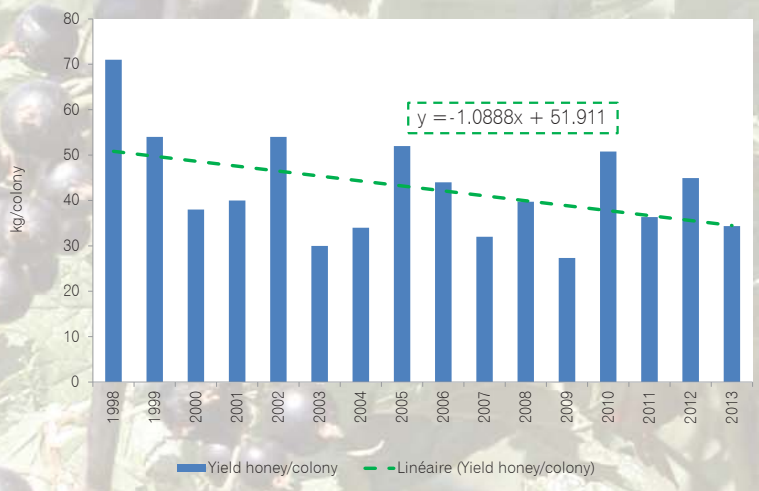
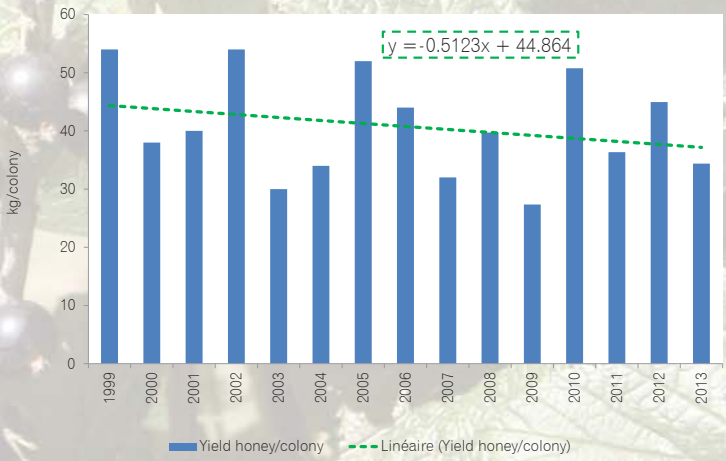


Chart 5. Beekeeping productivity in Québec, 1999-2013



IS THERE GENUINE CAUSE FOR JOY?

The overall trend in the beekeeping industry calls for caution when interpreting data, especially in the context of honeybee colony losses. The basic observation remains the fact that growth in the key industry indicators is being driven more by the increase in blueberry and cranberry production over the last decade than by higher productivity. In fact, productivity has fallen sharply since the late 1990s. If berry crops were to decline—a common phenomenon in agriculture due to market fluctuations—honey producers could eventually be hit hard by productivity losses.

What exactly are the causal factors behind the decline in productivity? That is a hard question to answer, even if many industry observers and scientists will say honeybee colony losses are a crucial factor. In order to give an accurate answer, economic research using recognized quantitative methods of measuring productivity and efficiency in agriculture is needed.

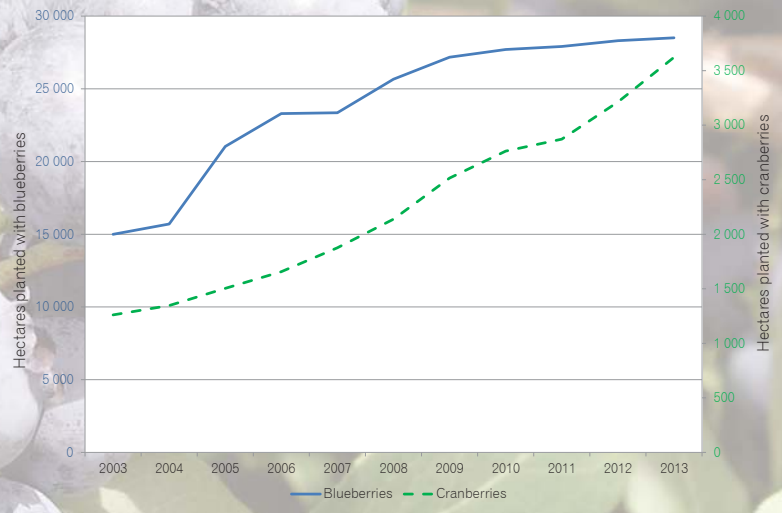
ADDITIONAL INFORMATION

SURGE IN BERRY CROPS

The acreage devoted to blueberry and cranberry production grew exponentially between 2003 and 2013 (Chart 6). The area planted with blueberries rose 90% from 15 000 to 28 510 hectares, while the area planted with cranberries tripled from 1260 to 3622 hectares over the same period.

The growth has clearly been propelled by increased demand for these two berries. Moreover, without going into detail here, statistics on the Québec horticultural industry published in the report *Profil sectoriel de l'industrie horticole au Québec* shows a significant increase in fresh-berry exports during the study period. However, another major factor might also be the exclusion of blueberries and cranberries from the prohibition under the Agricultural Operations Regulation to increase areas used for crop cultivation in degraded watersheds.

Chart 6. Blueberry and cranberry production in Québec, 2003-2011



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FOR FURTHER INFORMATION

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