

A History of Agriculture in Niagara, Pre–1969

Introduction

The Niagara region provides substantial contributions to agricultural production in Ontario. Yet, it poses value to far more than just external markets; agriculture is inherently part of what makes Niagara what it is today. Greenhouse growers, migrant workers, peach festivals, tractor pulls, grape and wine events, market gardens, plant nurseries and more, all have an impact on the peninsula's internal culture as we structure elements of recreation, leisure, and employment around this industry. So how did it come to be this way?

Today, the Niagara region has a thriving agricultural sector, its dominant specialties including greenhouse production and fruit-growing, with "a strong network of services and industries tied to agriculture."¹ In 2016, Niagara's 1,827 farms created 19,892 jobs, generating \$1.4 billion in gross domestic product impact, which represented 42.8 per cent of the gross farm receipts in the entire Golden Horseshoe.² Niagara's agri-food economy is a multi-billion-dollar industry that ties into supporting industries like food service, hospitality, food and beverage processing, and retail business.³

Many intertwining factors were involved in the economic development of the Niagara region over the past centuries. This paper will highlight the main historic determinants that underpin the region's current agricultural sector. A few of these determinants remain relevant today. Increasing globalization and market competition, temporary farm labourers, public and private investment by industry stakeholders, and scientific research and innovation are key characteristics of Niagara's agricultural development that continue to matter.⁴

The following sections will explain what this development looked like and what foundations were laid to allow farmers, growers, vendors and supporting industry

stakeholders to evolve and succeed in the present. Although this paper is structured chronologically, relative to specific sub-categories of agriculture such as land use, field crops, livestock, fruit-growing and plant nurseries, these groups have each been impacted by many of the same external factors. These include international trade policies, government legislation, technological advancements, population shifts and market trends, all of which have affected development within the region's agricultural sector.

These external factors influenced economic development just as much as the environmental factors that exist as part of Niagara's unique geography. Climatic differences between the townships above and below the escarpment, variations in soil type and drainage levels, the presence of two Great Lakes and various streams and rivers, along with other environmental determinants have steered the commercial choices made by stewards of this land for thousands of years. Thus, the agricultural sector in Niagara developed relative to a range of both human and environmental characteristics.

Land Use—General Trends

The current state of agriculture in Niagara is rooted in circumstances unique to each corner of the region. Farmers in municipalities like Wainfleet and West Lincoln navigated environmental and social challenges that were vastly different than those who farmed in places like Lincoln or Niagara-on-the-Lake. Even the more industrial areas like Port Colborne, Welland, Thorold and Niagara Falls still had pockets of rural production integral to the community's internal socio-economic structure. Altogether, the region's export of different animal and plant products, creation of manufacturing points and sales networks, and financial contributions towards the broader provincial economy present a complex story of economic development.

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This first section addresses historical trends regarding the number of farms and amount of occupied farmland in Niagara, the types of people living on the land, and the value of such farmland over time. From Indigenous hunter-gatherers and French explorers to the settlers of the post-Revolutionary period and the waves of immigration afterwards, humans have continuously relied on Niagara's fertile land and natural resources for sustenance and commercial gain. Throughout the 19th century, large swaths of land were slowly cleared of their forests and planted with crops like wheat and corn, while families employed mixed-farming methods to feed their households.

As the region industrialized and cities grew, large-scale farming became less common and small-scale specialized farming dominated parts of the peninsula, particularly within the tender fruit and nursery sectors. Both the number of farms and total area of occupied farmland have been decreasing slowly since the turn of the 20th century. All this time, Niagara's land values have remained some of the highest in the province.

Niagara's unique physiography is one of the main reasons for the peninsula's successful agri-food sector today and was arguably even more important throughout history as inhabitants relied on the region's natural resources for sustenance. In addition, population shifts, and immigration trends impacted agricultural development as newcomers with limited knowledge of the land adapted to the local climate and formed communication networks within the farming communities. In so doing, they slowly gained knowledge regarding crop rotation strategies, fertilization methods, ideal locations for purchasing land, and how to ward off persistent issues with local insects and weather patterns.

Indigenous Land Use

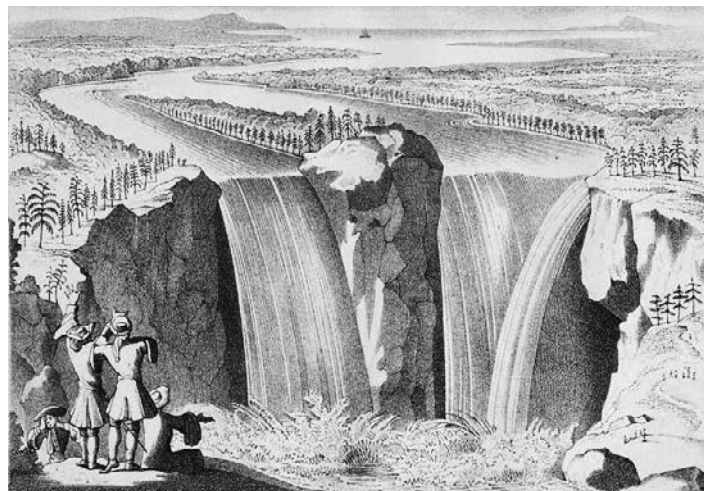
The Niagara region's fertile lands, towering escarpment and numerous waterways have drawn people for centuries. In the early Paleo-Indian period as glaciers receded and the climate warmed, people began to inhabit the outskirts of the region near the shorelines and rivers. The confluence of Niagara's streams and lakes were popular areas for people to gather resources, these streams running either east-west into the Niagara River, or north-south into either Lake Erie or Lake Ontario.⁵ Deciduous trees, edible plants and wild animals like deer, moose, and fish gradually entered the landscape, and there was a slow introduction of pottery, maize, and farming by the late Woodland period into semi-permanent villages and seasonal camps by 1,500–3,000 BP.

Niagara was occupied for around 300 years by Iroquoian-speaking people known as the Attawandaron, or the Neutral Confederacy. In addition to hunting and trading,

they engaged in agriculture in parts of Niagara, with corn being their dominant crop. Farming, or "maize agriculture" affected the movement of these peoples, as they looked for land that would be better for large-scale farming, as opposed to grazing around the lakeshores. This meant searching for land with adequate drainage, natural fertility, and low-moderate slope. Archaeological evidence points to movement of people from the lakes towards the interior, and seasonal encampments on high elevation areas with better drained soils, such as parts of the Fonthill Kame.⁶

The Attawandaron were wiped out in the mid-17th century, and by the time early European explorers like Belgian missionary Father Louis Hennepin began traveling through the peninsula, groups of nomadic Haudenosaunee and Anishinaabe peoples were present in the area. In 1678, Hennepin wrote about the skills of the Haudenosaunee hunter-gatherers in catching wild goats, squirrels, and turkeys, as well as an abundance of whitefish.⁷

The land around the Niagara River was described as "very fertile" and in one instance, Hennepin and his fellow travelers were waiting to sail out of Niagara across Lake Erie when they were instructed to till the ground and plant "several sorts of Pot-herbs and Pulse, for the conveniency of those who should settle themselves there."⁸ The Indigenous nations living in Niagara at this time used the region's fertile soil to grow crops including corn, beans, and squash. Their diets were supplemented by wild game, berries, nuts, mushrooms, and other plentiful foraged materials including wild cherries and rocambole garlic.⁹



Belgian missionary Father Louis Hennepin traveled through Niagara in the late 17th century, describing interactions with Haudenosaunee hunter-gatherers who grew crops in the peninsula's fertile soil, their diets supplemented by wild game, berries, nuts, mushrooms, and other foraged materials. This scene of Hennepin encountering Niagara Falls was created by an unidentified Dutch printmaker for Hennepin as part of his published book of travels. Photo courtesy of Library and Archives Canada.

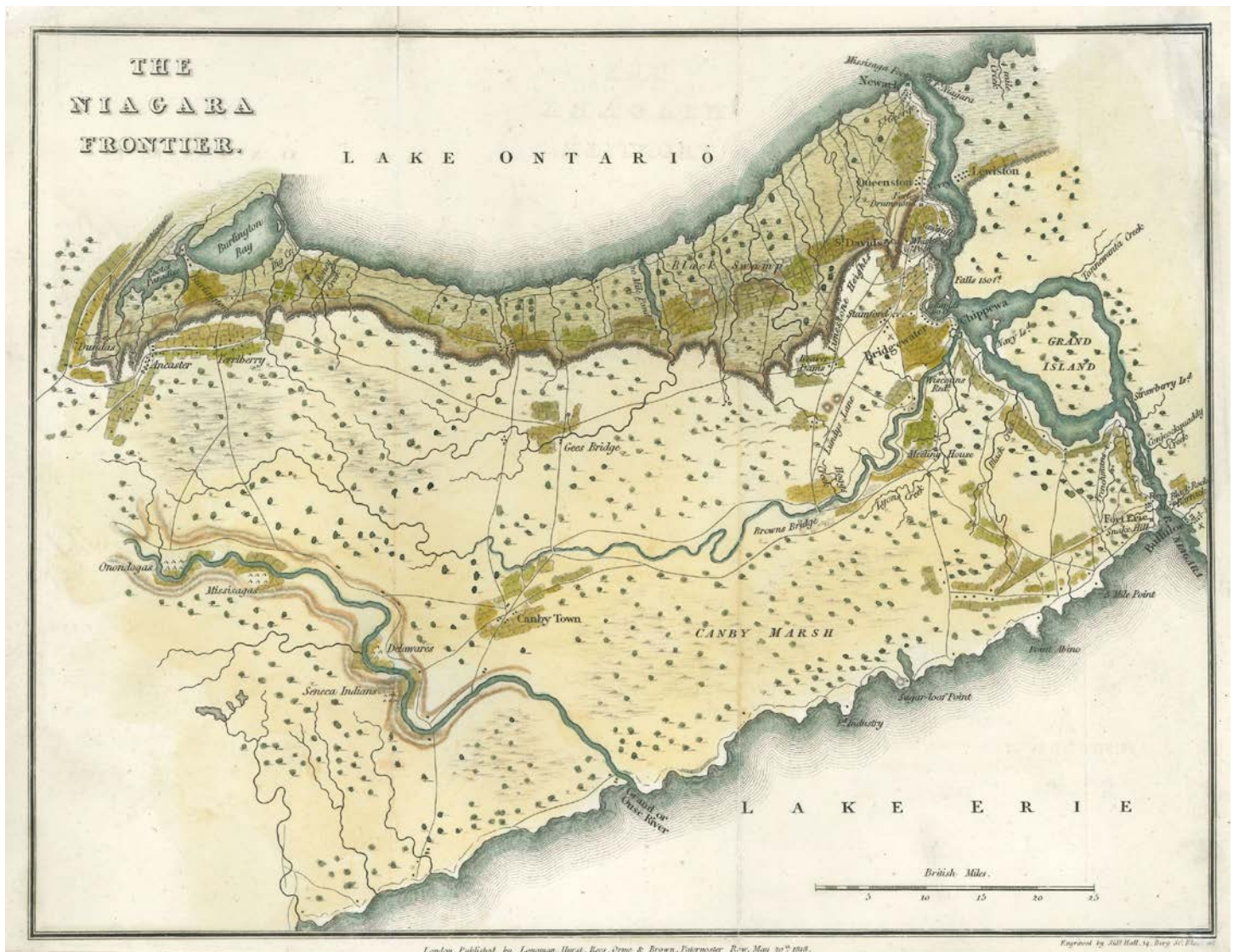
Colonial Settlement

The grid-like pattern of farms covering the region today was first laid out during the early days of colonial settlement over 200 years ago—although much has changed since then. Niagara's refugee settlers of the late-18th century, mostly United Empire Loyalists (UELs) who were granted parcels of land by the British government for their devotion to the Crown during the American Revolution, spent much of their early days clearing the land of trees before they began planting crops. An observant traveler in this nascent period noted how, like the Indigenous inhabitants, these families chose their land within the region based on soil fertility, proximity to water, and proximity to markets.¹⁰

Today, at least two-thirds of the region can be considered arable farmland.¹¹ However, a persistent

problem for farmers has been inadequate drainage, an even larger issue for colonial settlers as they developed their farms. Niagara's pockets of wet, swampy land impacted settlement choices and farming strategies for these new families. Although these wet areas were settled quite early compared to the rest of Upper Canada, people did not live there for long periods of time like they did in other parts of the region where the land was of better quality.

Still, the poorly drained soil and the resulting boglands that stretched through a large portion of Wainfleet proved advantageous to aspiring peat harvesters by the 1860s and became one of the first peatlands in Canada to be mined for peat as fuel.¹² Remnants of this industry remain there today, including old railway lines and wagons that were used to haul peat bricks.



This 1818 map shows areas such as the "Black Swamp" in St. Catharines and the "Canby Marsh" in Wainfleet and Port Colborne. Photo courtesy Brock University Library Archives and Special Collections.

The existence of these marshy sections and forested inland areas meant that much of Niagara was not immediately suitable for large-scale farming. Thus, settlers looked for other opportunities and diversified their interests while slowly improving their land over multiple generations. For example, farmers living along the Twenty Mile Creek harnessed the power of Niagara's water systems to become engaged in a small-scale shipping business.¹³ In this way, Niagara's unique watersheds also helped shape its early industrial networks.

A few key elements characterized Niagara's population and subsequent agricultural production throughout the 19th century—including absentee land ownership, high turnover rates, a lack of labour, tenant farming, and ethnic makeup. The land was initially surveyed throughout the 1780s and 90s and organized into townships. Using the "front and rear" method, the townships were laid out in concessions parallel to the lakeshores and generally contained 100-acre lots. Immediately, these lots were purchased in bulk by a handful of influential land speculators.¹⁴ As a result, much of the land lay bare for years at a time, affecting the establishment of roads and communication lines throughout the region. By 1850, only 40 per cent of Niagara's land had been cleared.¹⁵

Tenant Farming and Population Shifts

One of the main complaints of these UEL farmers was the need for hired labour. Most families farmed their own land, producing for subsistence within their own households. It was difficult to grow industries like milling, tanning, shipping, etc. without the help of a few extra hands. Thus, the region's small population, an estimated 6,000 settlers by 1811, limited the abilities of farmers from the outset.¹⁶ In the earliest days of colonial settlement, the most prosperous farmers were able to achieve such high levels of wheat production in part due to their use of enslaved Black labour.¹⁷ It cost between four to eight shillings per day to pay a labourer to harvest wheat at this time, so forgoing this expense placed enslavers in an economic category few others could reach.

Niagara saw frequent population changes during this early period, even decreases at times, and historians looking at the period between the War of 1812 and the 1840s have placed people into three categories: transients who stayed in the area for less than two years, sojourners who stayed from five to seven years, and long-term farmers.¹⁸ The transients and sojourners listed were often tenant farmers who did not actually own the land on which they lived and worked.

According to the 1848 Census, Niagara had a tenant-farming population larger than the provincial average.¹⁹ During the mid-late 19th century as immigrants, particularly from the British Isles, came looking for a place to settle, many felt it would be beneficial to test the land first before making a permanent decision to farm in Niagara—plus they may have not had the means to purchase a farm outright. Mortgages on land were treated similarly to today, where some farmers decided to mortgage it for a long time and direct their immediate efforts towards improving the land while others focused on first paying off the mortgage before improving it.²⁰ In some cases, the tenant-farming system produced adequate yields, but often the farm would not be improved to its full potential (i.e. installing drainage, building barns, etc.) because the renter understandably did not wish to put in the capital to complete those sorts of large land improvement projects.²¹

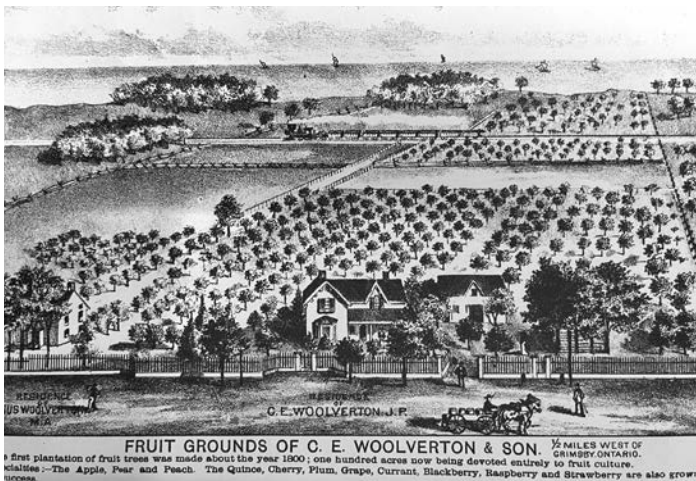
The ethnic makeup of Niagara's farming population also impacted agricultural success. Many settlers of Germanic origin farmed the land during the early colonial period, familiar with similar landscapes at their homes in New York and Pennsylvania. These groups were well-known at the time for operating successful farms, and many of them still exist today, run by their descendants on what are known locally as "Century Farms." This establishment of multi-generational farms and consequent knowledge and expertise in a particular sector was one of the key determinants of commercial success. In Niagara's 1920s fruit industry for instance, fruit farmers with 15 or more years of experience in the business statistically brought in a 57-per-cent higher income than that of someone with two years' experience or less.²²

Ontario's provincial leaders understood that hands-on learning was invaluable, and early in the 20th century they implemented a program incentivizing teenage boys to work on a farm for three years, like an apprenticeship, allowing them to make money while also gaining knowledge in the trade so they could begin their own farms.²³ The Department of Agriculture had a heavy hand in the promotion of agriculture in Niagara at that time, distributing propaganda to encourage immigrants to take up farming in Lincoln where there was "an unlimited market for all we can grow!"²⁴

Niagara's more-established farmers were sometimes frustrated by the tactics of newcomers, such as the tendency of upper-class British gentlemen to purchase and subdivide small farms after hearing about the commercial gains that could be made in growing crops like peaches and grapes. Due to lack of personal experience and local knowledge networks, the orchards and vineyards were not always cared for properly and later bred disease.²⁵ An Old Countrymen's Association was organized in Niagara

specifically to address this issue, advising incoming settlers to first work on a fruit farm to gain experience before purchasing outright.²⁶

In the mid-19th century, farms in Niagara varied in size, with the majority consisting of between 50–100 acres.²⁷ There were plenty of larger farms as well. In fact, the 1851–52 Census shows that 22 per cent of the peninsula's farms were more than 100 acres each. Over time however, these farms were partitioned and sold and by 1900, the percentage of farms having more than 100 acres had decreased to 14 per cent. By the early 20th century, most people were not looking to increase the size of their existing farms, however there were many looking to purchase small farms. With the high price tag on land in Lincoln County especially, smaller farm purchases were more attainable.²⁸



*The Woolverton fruit farm was a prime example of Grimsby's fruit production throughout the 19th century. This sketch shows the Woolverton house on Main Street West with orchards planted along the bottom of the Niagara escarpment stretching 1.5 kilometers all the way down to Lake Ontario. Photo from *The Illustrated Historical Atlas of the Counties of Lincoln and Welland*, 1876.*

The 20th Century

There was a clear, intentional shift in the purpose and goals of agriculture and agri-food production in Niagara between 1900 to 1969. From the beginning of the 20th century until around 1969, the number of farms and total area of occupied farmland both decreased by almost half. In 1910 there were a total of 6,906 farms in the region, down to 3,950 by 1970. Similarly, the total area of occupied farmland in Niagara went from 408,593 acres in 1910 to 252,544 acres in 1970.²⁹ As the region industrialized and cities grew, large-scale farming became a less common pursuit. However, this did not impact the region's ability to feed its local population, despite its number of residents quadrupling from 77,592 people in 1910 to 347,328 people in 1970.³⁰

The decrease in *number of farms* happened in other parts of Ontario as well, but the districts that have historically been large-scale producers did not see such decreases in *occupied farmland*. For example, in Wellington County during that same period, the number of farms decreased by 43 per cent which is similar to what happened in Niagara, but their total area of occupied farmland only decreased by 18 per cent (as opposed to Niagara's 38-per-cent decrease in occupied farmland) which means that much of the land being farmed in Wellington district during the early 20th century continued to be farmed more than six decades later.

Both Niagara and Wellington began the century with similar farming statistics, but towards the end of the century, the two agricultural economies had developed quite differently. Wellington's landscape is generally flatter, encompasses a larger square footage and is thus more conducive to large-scale farming while Niagara has faced several challenges including industrial barriers like the construction of the QEW highway through prime agricultural lands, and geographical barriers like the Niagara escarpment, as well as poor drainage and hard clay soil in certain townships.

The data collected for this study, from censuses published every 10 years, lists the information by county, revealing clear differences between the northern and southern portions of Niagara district. Therefore, while Niagara's agricultural sector as a whole has a general development trend distinct from the rest of the province, it has historically been divided into two very different economic landscapes, which individually could be broken down even further by township. For example, Welland County slowly transitioned into an increasingly urban area from 1900 to 1969 as villages in Niagara Falls, Port Colborne, Welland, and Thorold expanded. At first, the population of Welland County and its total area of occupied farmland exceeded that of Lincoln County, but by the 1940s, the total area of occupied farmland in Lincoln surpassed that of Welland.³¹

Already in 1900, Niagara had a slightly more urban than rural population.³² This was not common, as most of the provincial districts at that time were primarily rural. Throughout the 19th century, Niagara's residents became increasingly involved in industrial sectors like shipping and manufacturing, spurred by the construction of the Welland Canal directly through the centre of the region. The building of this canal also facilitated the shipment of Niagara's agricultural products throughout the Great Lakes, adding another element to the region's intricate trade networks. After 1900 there was also a shift in the pattern of farms being owned vs. farms being rented,³³ and over time the

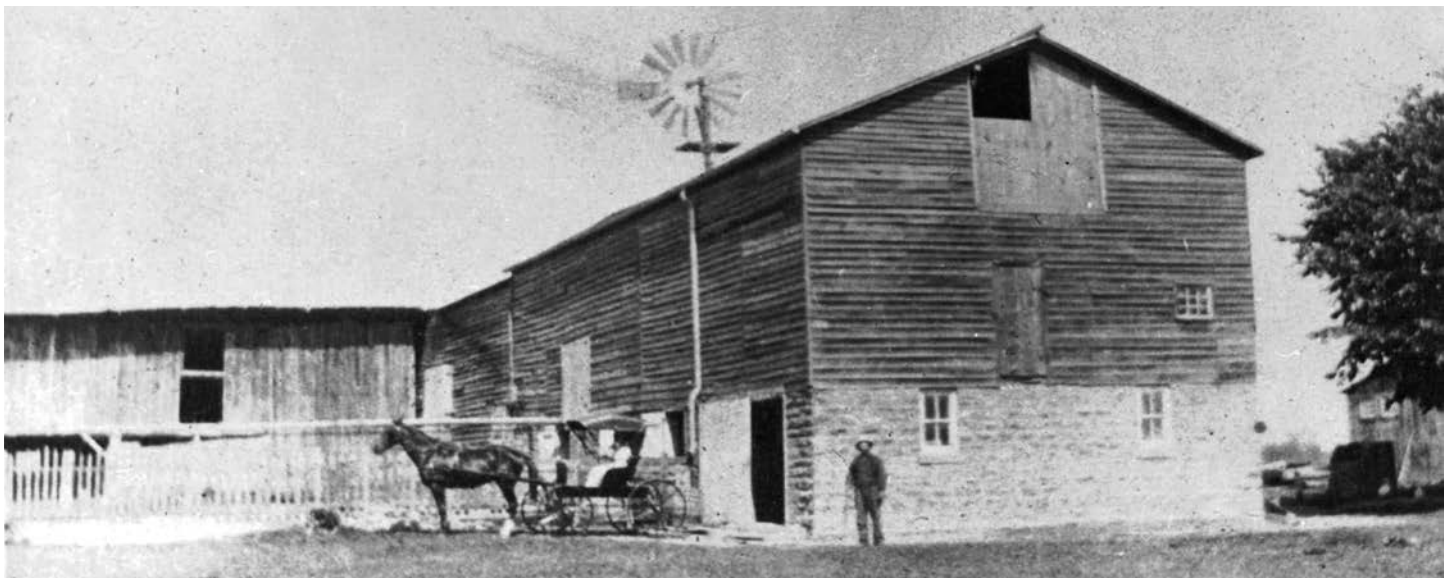
number of farms in Niagara being run by full owners rather than tenants or part tenant/part owners slowly increased. In 1890, 70.1 per cent of the farms were run by the owners of the farm, and by 1960 that number had risen to 85.8 per cent. Therefore, Niagara's farms were able to produce better yields each year throughout the 20th century as any needed investments were made and they gradually improved over time. Today, many landowners in Niagara rent farmland to management companies that work a select number of fields, orchards and vineyards. Thus, the process of farming has continued to evolve in the 21st century.

Overall, the value of Niagara's farms increased throughout the 20th century. Between 1900 and 1970, the total combined value of a farm's land and buildings, tools and machinery, and livestock grew from \$21.5 million to \$312.3 million.³³ The value of the Canadian dollar should be factored in here, as it increased more than 238 per cent between 1900 and 1970.³⁴ This means that the 1900 value was approximately equal to \$72.8 million in 1970 dollars and therefore the total value of Niagara's agricultural sector increased throughout those seven decades at least four-fold.

However, this was not a linear increase. The devastating economic effects of the Great Depression are reflected in Niagara's farm values for the years 1930 (\$50.7 million) and 1940 (\$46 million), which were both lower than the 1920 value (\$57.2 million). It is also important to note that crop yield depends largely on seasonal conditions and therefore it is difficult to judge a trend based on 10-year intervals

when the year on record could have been affected by rain, hail or blight. The leading cause of crop failure in Niagara, as well as in most counties, was hail and rain, as it still is today.³⁵ Still, records point to a general trend of productivity in Niagara's agricultural sector during the 1920s followed by a period of decline amidst the turmoil of economic recession and another global war, and finally back on track by 1950. By this mid-century period, Niagara's total farm values more than doubled from the previous decade, reaching \$104.5 million and they continued increasing from that point onward.

Despite the poor returns of the 1930s, Niagara's land was still worth comparatively more than anywhere else in the province. In 1930, land in Lincoln County was worth \$174.65 per acre, which was the most expensive land in all of Ontario at the time. In Welland, the land was the eighth-most valuable in the province, worth \$100.31/acre. As time went on, the dollar value per acre for Lincoln was surpassed by other counties. But in the early 20th century, the land below the escarpment—which was the prime national producer of peaches, grapes, and other fruits—was extremely desirable and worth “five and ten times the market value placed on them.”³⁶ This high value reflected the great time and energy put into improving the land in Lincoln County. By 1900, around half of the fields and orchards containing fruit crops had been either wholly or partially drained.³⁷ This, along with sandy soil for root penetration, strategic plowing methods, and the planting of cover crops were listed by the Niagara Fruit Growers' Association as key elements necessary—for peach trees in particular—to flourish.³⁸



Barn on the Powers Family farm in southwestern St. Catharines in the early 1900s. The original wooden structure, built in the early 1800s, had been lifted onto a new stone foundation, housing the family's horses, cows, and hogs. At this time, the family had over 100 acres of land to care for, including apple and pear orchards. This is a prime example of a Niagara farm that diversified its products for commercial reasons as well as for household subsistence. Photo courtesy The Brown Homestead Collections.

Overall, Niagara has consistently been a desirable place to farm. Indigenous peoples saw the value in its natural landscape, Loyalist settlers were granted large swaths of land, and speculators quickly purchased acreage in the region. Immigration throughout the 19th century impacted agricultural development as newcomers formed communication networks and navigated the complexities of farming large areas with primitive, animal-powered equipment. As the population grew, land was partitioned and sold but remained high-value—especially in the northern parts of the peninsula where tender fruits could be grown. At the turn of the 20th century many small farms dotted the landscape of Niagara. Since then, both the number of farms and total area of occupied farmland have been slowly decreasing due to advancements in technology and increasing urbanization.

Field Crops and Livestock

This section addresses some of the historical trends relating to the cultivation and sale of field crops in Niagara, as well as the livestock sector. Mixed farming was key to success throughout the colonial period and into the 20th century as farmers grew staple grain crops as their main source of income, supplementing sales with a variety of other field crops, fruit and vegetables, animal byproducts, and industrial endeavours. Over the centuries, farmers consistently adopted new practices and equipment, from the 19th century technological advancements in ploughs, cultivators, and threshing machines to the mechanized tractors and harvesters of the 20th century.³⁹ Such developments in science and technology revolutionized farming. At the local level, knowledge was shared in a variety of ways, often supported by public and private investors.

The evolution of transportation was also a key factor in the peninsula's agricultural development, allowing access to a wider variety of markets, a broader labour pool, and greater communication networks. Local markets included nearby cities like Hamilton and Toronto, but Niagara's field crops and other products reached other countries as well, including Great Britain and the United States. This history of cross-border sales was subject to decades of changing government regulations and tariffs, further impacting development in the region.

19th Century Mixed-Farming Methods and Markets

Although Niagara is known as a hub for fruit farms and plant nurseries today, it was originally dominated by staple products like corn and wheat, with poultry, hogs, sheep, cows, horses, and other farm animals contributing to the household economy. Prior to European settlement,

corn was the main field crop being grown by Indigenous peoples in the area. It could be ground into cornmeal and used in breads, soups and stews, along with beans to make succotash, or meats gathered while hunting.

During the early days of Loyalist settlement, wheat, hay, oats, and a variety of other field and grain crops were commonly grown in Niagara, along with corn. Wheat was transformed into by-products like flour, bran, and whiskey; purposed for home use, or traded for other goods. In the early 19th century, while other parts of the province with flat, empty landscapes focused on growing wheat as a staple crop for bulk export, Niagara's agricultural landscape was slightly more diversified, thanks to the industrial benefits offered by the region's escarpment and water system and the social benefits of a longer-established community.

The colonial settlers engaged in a variety of supporting industries such as milling, logging, tanning, potash manufacturing and more, supplying manufactured goods for both local consumption as well as export. Since grain needed to be turned into flour, the milling industry became an especially important part of Niagara's early economy. There were 14 sawmills and 10 grist mills in the peninsula by 1792, rising to 25 gristmills and 37 sawmills by 1805.⁴⁰ The early sawmills and gristmills gave way to more complicated iron and wool factories.⁴¹

Regarding product markets, the Niagara Purchase of 1781, a treaty between the Crown and the Mississauga peoples, allowed for settlement of UELs for "agricultural purposes" only, so that they could feed soldiers in the nearby garrisons like Fort Niagara, Fort Chippawa, and Fort Erie. Thus, some of Niagara's roots were founded in the agricultural sector. By the turn of the 19th century, Niagara farmers that were able to produce surpluses of agricultural goods began to find a new market for it in Montreal, selling to local merchants who shipped bushels of wheat and barrels of flour across Lake Ontario and down the St. Lawrence River. By 1822, wheat was still the main crop grown, but other important commodities exported from Niagara included industry-specific products like lumber and potash.

A mixed-farming economy continued dominating the local economy into the 1860s.⁴² This was beneficial as the wheat market was volatile and prices fluctuated drastically. Pests such as moths, fire blight, black knot and curculio often devastated crops.⁴³ By diversifying their field products, many profited from the sale of items like corn, barley and oats when wheat prices were low. These items, along with peas, found a steady market as animal feed for those with livestock.

In the spring and summer months, most farmers focused on producing a particular fruit and vegetable, or field crop as their primary source of income. In the winter they would plant cover crops, sell fattened swine, cows, and poultry. They also kept dairy cows and sold milk to the local creamery year-round.⁴⁴

While most families at the turn of the 19th century had animals on the farm, livestock-rearing on a larger scale was not a profitable enterprise for a variety of reasons. First, it required access to pastureland, which took up a lot of space and Niagara's farmers spent those first few decades clearing small sections of land and growing crops that could be put to immediate use rather than creating large sections of pasture for use beyond subsistence. At that time, it was common for families to share pasturelands with one another on a rotating schedule.⁴⁵ Protein intake for these families came from hogs and poultry which could roam the forests freely and didn't need to graze in pasture.

Second, the quality of those early livestock breeds was poor due to the harsh conditions of pioneer settlement, including longer periods of starvation, minimal access to nutritious food, and poor shelter. Even if higher quality breeds were purchased, they might not have survived. In the first and second generations of colonial settlement, cattle, horses, sheep and other livestock on Niagara farms were only there for subsistence to feed families and perform labour, and they were mostly poorly bred animals brought over from the American colonies in Pennsylvania, New York, and New Jersey.⁴⁶ Still, Niagara's early agricultural societies focused on the improvement of certain breeds of cattle, horses, sheep and pigs in a manner comparable to their American counterparts and by the 1850s, they had made "respectable progress."⁴⁷

In 1843, the Canada Corn Act reduced the duties on Canadian wheat and flour imports into the UK, making it more profitable for Canadians to sell their cereal grains overseas. When the Act was repealed a few years later, the weakness of economies structured around the sale of this one staple product was made clear. Niagara farmers focused on developing a more diverse array of products were able to weather the storm better than their counterparts. For example, one study of a Dunnville farm from 1836 to 1850 revealed that 43 per cent of its total revenue came from wheat, with the rest coming from items like hay, corn, peas, potatoes, clover, wool, mutton, butter, beef, pork, and eggs.⁴⁸ This style of mixed farming prevailed across Niagara, before mechanical improvements, scientific innovation, demographic changes and financial stability of multi-generational farm

communities encouraged a greater focus on specialty farming of crops like the tender fruit of the northern townships below the escarpment.

While Niagara's farmers struggled against the trade limitations of their colonial benefactors, they had another national market directly to the east—namely, the United States. Proximity to the American border has had a major impact on Niagara's agricultural development, providing access to broader markets for the sale of locally produced goods, spurred by the advent of rail and steam transportation, and allowing greater access to information regarding environmental science and advancements in technology.

However, Niagara's farmers struggled with competition for decades as American goods flooded Upper Canadian markets. The implementation of the Colonial Trade Act in the 1830s allowed US citizens in New York and other nearby states to drive cattle and sheep over the Niagara border at no cost into Hamilton and Toronto markets to be sold and butchered. Niagara and other parts of the province experienced societal rifts between farming and merchant groups as a result, as the merchants and political elite that controlled sales supported this free importation along with other methods of trade expansion such as the construction of the Welland Canal. This was one of the key issues that led to the 1837 Upper Canadian Rebellions.⁴⁹ Almost 100 years later in its 1921 annual report, the Niagara Peninsula Growers organization offered a similar complaint, that the "biggest fruit year we have had in this province and possibly in the Dominion" had to compete against \$19 million worth of fresh fruits imported from the United States, resulting in growers being "practically driven off our own market."⁵⁰

While American competition disincentivized Niagara's production at times, markets over the border eventually opened in a greater capacity by the 1850s and with the Reciprocity Treaty. For a time, it eliminated tariffs into the US, and livestock being produced in other parts of Upper Canada ultimately passed through Hamilton into Queenston and over the border to be sold. This spurred agricultural production in Niagara, as raw food products like peas, corn, and barley were necessary to sustain Niagara's slow-growing livestock industry.

Historians studying the development of the province's agricultural economy agree that the policies of outside governments had an impact on the Upper Canadian economy that was equally important as population movement, market trends, export production, and flows of communication.⁵¹ Further indication of the US impact on

local markets, the onset of the American Civil War increased demand for products like mutton, wool and oats as well as specialty crops like barley, sorghum, hops, tobacco and flax.⁵² In fact, in the 1860s, barley was such an important Canadian crop that American brewers stated “if the barley now grown in Canada was reduced one-half, it would cripple the manufacture of malt liquors to such an extent as to involve a loss to the United States treasury, annually, of about \$2,000,000.”⁵³

As the grain trade improved on a national level, Niagara’s farmers also continued to produce significant quantities of wheat. In fact, the 1851 Census of Canada West reveals that in Lincoln County, two thirds of the cereal area was occupied by wheat.⁵⁴ Alongside wheat production came the establishment of even more shipping and milling industries. Industrial enterprises—those along the Welland Canal especially—flourished.⁵⁵ In the 1880s, Thorold township’s two main industries were grain and wool, which were sold in the eastern counties of Ontario as well as the more “distant parts of Canada.”⁵⁶ One of the most prominent enterprises was the Thorold Woolen and Cotton Manufacturing Company, established in 1882. This establishment manufactured \$100,000 worth of goods annually and was one of the largest of its kind in the entire province.⁵⁷



1911 photograph of the Maple Leaf Flour Mill along the Welland Ship Canal in Port Colborne, Ont. A large ship is parked next to the government elevator. Photo courtesy Brock University Library Archives and Special Collections.

As wheat continued to hold importance in Niagara’s economy, there was a gradual evolution in the construction of grain storage facilities and larger milling enterprises. For example, the Maple Leaf Milling Company with its large Port Colborne plant (c. 1911) had acquired mills in Thorold and St. Catharines around the turn of the century, operating until 1997. Similarly, the Robin Hood flour plant in Port Colborne was built during the 1940s to process grain and export products using the surrounding Welland Canal

and railway systems. This was just one of many examples of Niagara’s greater economic impact, as products were shipped to other parts of Canada, the U.S., and overseas. Many of these manufacturing plants in Niagara contained office headquarters in Toronto, thus forming stronger networks and expanding the sector’s commercial reach.

20th Century Field Crop Production

Statistics from the 20th century censuses suggest that the majority of the region’s cultivated agricultural lands (between 50–80 per cent) were used for field crops each year between 1900 and 1969. Niagara’s improved lands were generally divided between use for field crops, pasture, orchards, vineyards, small fruits and vegetables, nurseries and market gardens, and a portion left fallow.

Compared to other parts of Ontario, Niagara’s field crop production is not particularly impressive. For example, in 1900 the total area of cultivated land being used for field crops in Niagara was 158,053 acres.⁵⁸ This included grain crops such as wheat, barley, oats, rye, corn, buckwheat, beans, peas, flax and mixed grains; cover crops like clover and grass seed; forage crops and hay; and potatoes and other root crops. Out of the 94 districts in Ontario at that time, Niagara ranked somewhere in the middle. Places like Wellington County had farmed more than 300,000 acres of field crops in that same year.

Compared to other agricultural commodities grown within the region itself, the production of Niagara’s field crops is still noteworthy. By 1970, the area of improved land being used for field crops was slightly higher than it had been in 1900, totalling 166,128 acres. In other words, close to 80 per cent of the region’s farmland was dedicated to growing field crops in 1970, compared to only 65 per cent in 1900. This suggests that while the land area being farmed in Niagara decreased by half over these seven decades (as noted in the previous section), farmers still considered field crops to be a valuable venture.⁵⁹

The most produced field crop in Niagara throughout the 19th century was wheat, but by 1900 this was no longer the case. In that year, bushels of oats and bushels of corn had both surpassed quantities of fall wheat. In 1910, oats were still more plentiful, and bushels of grass seed, clover seed, and corn were all produced in similar quantities to that of fall wheat. In fact, Niagara has consistently produced almost twice as many bushels of oats as fall wheat, over a seven-decade span. Recall how oats were used as feed for horses and cattle, both of which were vital sources of power for farmers throughout the first half of the 20th century.

As tractors, trucks, and other machines became more prominent, oat production in Niagara decreased from 46,269 acres planted in 1930, to 14,933 acres in 1970.⁶⁰ A decrease in pasturelands was another sign of lessening dependency on livestock, following the developments of heavy machinery. From the early 1900s until the 1940s, approximately 20 per cent of the improved land in Niagara was used as pastureland for livestock. This dwindled to just 10 per cent by 1970.



Steam tractor use in Niagara Falls. Note Brock's monument in the background. Photo courtesy of the Niagara Falls Public Library.

Many farmers during the first half of the 20th century continued to engage in a range of commercial activities throughout the year. A grape farm in Niagara Falls provides an example of mixed farming through the eyes of 15-year-old Harold MacLeod who recorded in his diary the daily tasks of farm life in 1904.⁶¹ In addition to the vineyard, he also helped care for his family's apple and peach orchards, raised livestock, grew small amounts of field and grain crops, brought the harvests to the mill to be processed, and traveled to local markets to sell their chickens, flour and other farm products.

According to the Government of Canada's overview of the Canadian agriculture and agri-food sector, Ontario's top crop commodities by average 2018-2022 farm receipts were vegetables and soybeans, each worth approximately \$2 billion.⁶² In Niagara's southern townships, soybeans are commonly grown crops that contribute to this high value. Yet historically, this commodity was not a driver of the local agricultural sector like it is today. In fact, soybeans do not even appear in agricultural returns until 1940 as part of the total "bean" crop, and do not receive their own category until 1970 when 27 Niagara farms reported farming a meagre 771 total acres of soybeans.⁶³

Machinery and Farm Tools

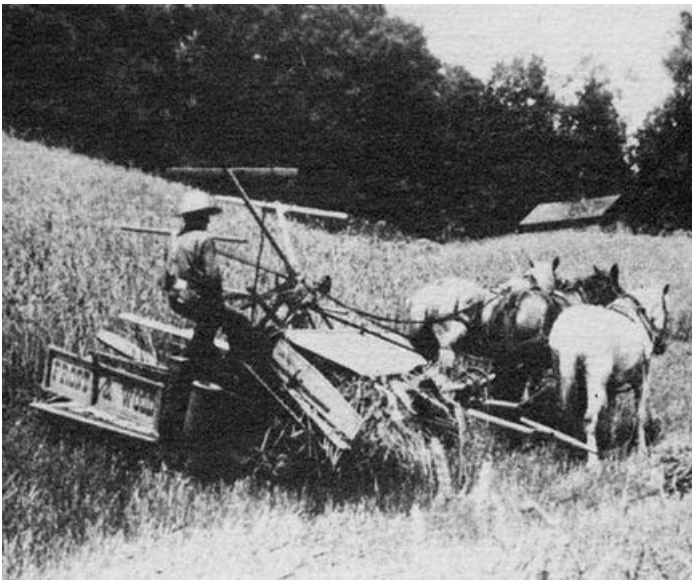
The federal Department of Agriculture's Marketing Service and Economics Division published a report in 1954 stating that a rapid mechanization had taken place in Canada between 1945 and 1953, and that there was a subsequent 25-per-cent increase in agricultural production in Ontario.⁶⁴ Plowing and tilling machinery in particular saved hundreds of hours in farm labour each year. This mechanization had clear implications for Niagara during that mid-century period as the size of farms began to slowly increase in tandem with such technological advancements. Recall how Crown land grants in Niagara were given in 100-acre parcels in the late 1700s. Approximately 150 years later, in 1940, only 17 per cent of the region's farms included 100-plus acres. By 1960, farm sizes showed signs of growing once again with 33 per cent of Niagara farms containing 70-plus acres.⁶⁵

Tractors were one of the most influential innovations, used for tilling and grain binding, and for use with hay balers, threshing mills, ensilage cutters, and feed grinders. The report revealed that of the Ontario farms visited, only 32 per cent used tractors in 1941 but by 1950 this number had increased to 85 per cent.⁶⁶ Niagara was also an early adapter of motor trucks, which were commonly used on the fruit farms and orchards that dominated Lincoln County. First recorded in the 1930 agricultural census, the region's farms reported 1,289 motor trucks.⁶⁷ This made up nine per cent of all motor trucks in the entire province and was more than any other county. These trucks, along with the railroads and streetcars, were essential for shipping produce.⁶⁸

Mechanical innovations were employed on Niagara farms long before the 20th century. With the shortage of farm labour that permeated the area in the early-mid 1800s, the invention of time-saving machinery was vital. These developments also resulted in a decreased need for animal labour to pull carts and farm implements. In fact, the population of working oxen in Ontario dropped from a peak of 50,000 in 1841 to only 6,700 by 1891.⁶⁹

Machines were subject to gradual improvement over time, with newer models being produced every year. By 1870, reapers and mowers had reached a level of product standardization, with harvesters and binders following suit around 1885.⁷⁰ Much of the technical innovation in terms of conception came from places like the UK and the U.S., but Ontario held its own when it came to assembly. From 1830 to 1900, provincial manufacturers used U.S. licences to acquire product designs and by 1880 had "mastered ownership of the designs and built the technical ability to produce their own patented designs."⁷¹

The manufacturing businesses along the Welland Canal and in surrounding urban areas produced many of the tools and equipment used by local farmers. Inventions like the sulky plow, wheat binders and grape hoes such as the ones made in Grimsby by Grout Agricultural Works in the 1870s and 1880s, made planting, weeding and harvesting much more efficient. Farm implements and edge tools were also manufactured at Tuttle, Date & Rodden, a large company founded in 1869 and eventually known as Welland Vale Works. It manufactured scythes, hoes, forks, rakes, chisels, picks and more, winning prizes at Toronto's Provincial Exhibition in 1870. This exhibition, as well as similar ones in Hamilton and other parts of the province, were routinely entered by companies like Welland Vale Works and Grout Agricultural Works, and they won prizes for their inventions.



Some Niagara businesses were pioneers in producing time-sharing machinery and cultivating implements for the agriculture industry. In this photograph, Pelham farmer Taylor Beckett is shown operating a hay binder pulled by three horses in the Short Hills of Effingham. Photo courtesy of the Niagara Falls Public Library.

As this new machinery developed, however, so did the need to repair it and thus along with knowledge of soil science and the intricacies of plant growth, training in basic engineering also became useful to Niagara farmers. As tractors became more widely used, the old implements would often break due to being now used at higher speeds. Machinery for manufacturing goods was introduced as well and that needed to be installed, maintained, and repaired by knowledgeable technicians.⁷²

Equipment like cream separators and milking machines allowed dairy products to be produced in larger quantities. Because of this, attention could be more readily turned

towards the raising of livestock and poultry as a large-scale commercial venture for animal by-products such as milk, cream, butter, cheese, eggs, wool, and butchered meats. Also, artificial insemination was introduced in the 1940s and 1950s, and by the 1980s was a major industry influencing the "course and rate of dairy cattle improvement to a profound degree."⁷³ This scientific advancement made it easier for dairy farmers to improve their herds without the financial burden of having to purchase and take care of a superior bull. It also helped with disease prevention, which occurs more often in natural breeding.

Evolution of Transportation

Travel and communication routes in and out of Niagara prior to 1900 developed from dirt to plank roads to highways, and saw the rise and fall of the stagecoach, steamboat, and rail travel. These changes were important for the agricultural sector because they allowed greater access to a wider variety of markets and communication network expansion.

Niagara's early 19th century road system remained severely underdeveloped but saw improvement with the introduction of plank roads in the 1840s.⁷⁴ Highway 8, one of the main east-west trails along the base of the Escarpment, was one of the main travel routes at this time and continues to be a main east-west passage through the region today. The external transportation routes around Niagara were also valuable as part of a larger Great Lakes economy. Niagara sits between Montreal and Detroit, two major points of commerce in the Great Lakes economy for centuries. This was a vital transshipment location into which the British government poured its resources. Because of this, the people of Niagara were exposed to markets for their agricultural products that other parts of Upper Canada had a tougher time accessing. When the Welland Canal was built, connection to these other port cities became even more accessible.

The improvement of these routes connected Niagara's farmers to other major cities, expanding their market opportunities. For example, stagecoach lines along the main plank roads connected Niagara with surrounding areas like Hamilton and Buffalo on a more regular basis. There were also regular steamboat schedules between Niagara and ports in Toronto and Hamilton throughout the 1840s, not to mention the introduction of a telegraph line running along the southern shore of Lake Ontario a few decades later. Telephones and radio further expanded information networks, making it easier for farmers to communicate with buyers and manufacturers throughout the region and beyond.

Education and Agricultural Organizations

Another facet of Niagara's developing agricultural sector included the formation of some of Ontario's oldest agricultural societies, mechanics institutes, annual fairs, 4H-clubs, women's organizations, and similar farming associations. Niagara's rural population benefited from these educational groups: learning how to use certain tools and implement scientific practices, and gaining access to new seed varieties and animal breeds along with receiving information about how to care for them. Annual fairs and exhibitions also provided a space for information-gathering. Many of these organizations were government-funded, as agriculture was a sector that the province saw value in improving and these groups were seen as tools of knowledge-sharing.

As this section will demonstrate, there has been a long history of public and private investment in agriculture-related education and research. In the mid-19th century, farmers had limited knowledge of innovations in agricultural science, as well as insufficient access to capital resources, transportation, and markets.⁷⁵ Provincial departments stepped in with funding for this sector, establishing technical colleges, short courses, and farmers institutes to mobilize knowledge amongst the producing classes. These were operated by groups like the Provincial Agricultural Association and the Council of Agriculture and Arts.

While sometimes given a one-time payment by the province to get up and running, grassroots organizations like agricultural societies and local farming associations were mostly funded by the members themselves. The goal of agricultural societies was to stimulate improvement within the community, and the first one in the entire province was founded in Niagara in 1792. Far ahead of its time, members of the Niagara Agricultural Society paid dues which were used to buy books on farming that could be shared with one another. It later became known as the Niagara District Agricultural Society, organizing fairs throughout the 19th century and branching into smaller township fairs. As time went on, these fairs provided opportunities for farmers in Niagara to show off the fruits of their labour so they could market them to potential buyers, while including the more urban communities and helping them appreciate what it meant to be a farmer. After all, "If you don't show, you don't sell", said Smithville farmer Cy Lowden.⁷⁶

Farmers depended on general plant and animal breeding education to maintain consistently healthy, productive crops and herds. This was an ongoing battle as they understood "today's useful variety may not suit tomorrow's

needs."⁷⁷ Since the early colonial period, agricultural societies met in Niagara for farmers to discuss the issues they faced and hear about new varieties being successfully grown by their family and neighbours in places like New York and Pennsylvania. These plant varieties and animal breeds were brought in from the U.S., but there were also many varieties that developed organically over generations of use through cross-pollination and natural selection. Farmers used their local knowledge networks to determine which crop varieties would produce the most favourable products as they annually combatted various quality issues, pests, and diseases. As scientific knowledge evolved, so did the quality of products as animals were more selectively bred and plant varieties intentionally developed in places like the Horticultural Experiment Station in Vineland and the St. Catharines Laboratory of Plant Pathology.

In 1907, the Extension Branch of the Department of Agriculture was formed, and experimental farm plots were given to high schools, Women's Institutes, and junior farmer associations. The 4-H program began in 1912 by representatives of the Ontario Department of Agriculture as they worked to implement more fairs and educational programs in the province, targeting the next generation of farmers. In the 1920s, the government even distributed seeds throughout classrooms in the spring so children could enter their flowers and vegetables to be judged at the local fair.⁷⁸ In Niagara-on-the-Lake, the annual Fall Fair was held on a Friday and school children were given a half-day holiday to view the local products including livestock and poultry, grains and fruits, canned tomatoes, peaches, pears, and small fruits.⁷⁹ As these children grew older, it was common for those living on farms and plant nurseries to stay home in the early spring to help their families with work as the season began.

Most of the township fairs in Niagara began around the mid-1800s, with the horse races being the highlight.⁸⁰ However, the number of fairs slowly declined throughout the 20th century. In 1906 there were 13 annual fairs throughout Lincoln County, decreasing to only two by 1967.⁸¹

At these fairs, farmers and business owners had the opportunity to advertise their wares. Advertisements for supporting industries like feed stores, farm equipment dealers, liveries and butchers appear in the fair books for Smithville in 1916, and Clinton & Louth in 1915, revealing intricate networks of trade and commerce as suppliers as far away as Hamilton and St. Catharines touted their businesses.⁸² These networks became even more localized by the mid-1900s as most places, even in rural areas, contained businesses that could provide necessary products and services to farmers without them having to leave town.⁸³



Agricultural fairs provided opportunities for farmers in Niagara to show their produce so they could market them to potential buyers. But they were also community-building events, connecting people to each other, and to their town's agricultural roots. This photograph depicts the crowd watching the horse races at the Fenwick Fair in the early 1900s. Photo courtesy of the Pelham Historical Society.

While fairs in rural communities allowed farmers to demonstrate their skill in growing crops and rearing livestock, rose and flower shows were also organized for members of garden clubs and horticultural societies to show off their talents. Horticulture as a hobby was an urban phenomenon, with gardening clubs and societies forming in cities like Port Colborne, Welland, St. Catharines, Thorold, Niagara Falls and Fort Erie. Indeed, horticulture was more than a hobby to the hundreds of plant nursery growers and market gardeners in the region throughout the 20th century. The Niagara Parks School of Horticulture was established in 1936 to teach apprentice gardeners while also beautifying Parks land with ornamental flowers and shrubbery.⁸⁴

At first, the apprentices at the School of Horticulture could only be male. The first female student was not allowed to enroll until 1973. While women were excluded from this learning environment for a long time, they had already been engaged in learning opportunities for decades. Women's Institutes (WI) were one such avenue for learning that had started to take shape in the 20th century.

The first WI began in Stoney Creek, Ont. in 1897 by Adelaide Hoodless, and many branches opened in Niagara soon afterwards. Women discussed topics pertaining to their everyday domestic tasks, including floriculture, horticulture, health, domestic economy, architecture, literature, education, and more. They fundraised in their communities to support local social services and, in the 1920s and 1930s, the Port Colborne Women's Institute packed jars of fruit and delivered them to places like the Welland Hospital and the Sick Children's Hospital in Toronto. During WWII, these women also canned local fruits to be sent overseas, with WI records showing a total 15,000 lbs. of jam sent out from Welland County.⁸⁵

Niagara also contributed to the war effort during WWI, in large part thanks to female labourers. The Ontario Fruit Branch shipped boxes of fresh fruits straight from Niagara to the Canadian Red Cross which were then distributed throughout the organization in Great Britain and France. In addition to boxes of fresh apples, it shipped products that had been processed at the Horticultural Experiment Station in Vineland including canned peaches, peaches in syrup, pears in syrup, jams and jellies.⁸⁶

The provincial government provided funding for the construction of storage facilities and the improvement of transportation infrastructure supporting the agricultural sector. In 1910, the Ontario Department of Agriculture forwarded \$3,000 to the Grand Trunk Railway to allow it to open a station on its line in Vineland.⁸⁷ In 1914, they also funded the construction of an experimental pre-cooling facility in Grimsby for fruit so that it could be stored for a few days before being shipped.

In 1965, the Ontario Milk Marketing Board was formed because of the Ontario Milk Act, which called for the creation of a regulatory organization to purchase all the milk on Ontario farms and distribute it to be processed. The organization is now known as the Dairy Farmers of Ontario. There are countless examples of government involvement in Niagara's agricultural growth and as the 20th century developed, many of these endeavours proved successful, even vital, elements of progress in the region's agricultural sector.

Livestock and poultry were an important part of the mixed-farm economy during the period of early colonial settlement, and their value evolved as technology advanced, and markets became more specialized. As the region urbanized and transportation networks improved, it became easier for farmers, especially those in Welland County, to make a living with one staple product. Some farmers chose to run primarily dairy farms producing fresh goods like milk, butter and cheese. Others raised beef cattle, hogs and pigs, or sheep and goats—either singularly, or a combination thereof. Mutton, wool, pork, beef, poultry, and eggs were important animal by-products being sold from these farms, supplying food primarily to residents in surrounding urban areas.

However, when examining statistics in the 10-year censuses, production of animal goods for export was not a defining characteristic of Niagara's agricultural sector. Still, it held value as a crucial part of the peninsula's internal economy. Livestock were also vital for farm development prior to the mid-20th century.

As tractors and other farm equipment were introduced in the mid-1900s, the need for horses, cows and oxen decreased, affecting the profits of grain producers, liverys, feed stores, and other businesses that relied on the existence of these animals.⁸⁸ Niagara farms have since grown in acreage, but decreased in number, and its agricultural landscape continues to evolve alongside technological advancements, government legislation, and competing markets.

Fruit Crops and Plant Nurseries

Niagara has been the leading producer of tender fruits for more than a century. The air circulation that takes place between the Niagara Escarpment and Lake Ontario creates a temperate growing environment for tender fruits that has been fundamental to Lincoln County's success in the fruit-growing industry. This unique climate allows growers to produce specialty crops that could not be grown in most other parts of the province, including peaches, grapes, cherries, pears, plums, apricots, and fields of other small fruits and vegetables.

Fruit was undoubtedly Niagara's claim to fame throughout the 20th century, far outshining market-garden and plant-nursery operations, which have grown to dominate the region today. This section addresses the historical development of fruit farms and plant nurseries in the region.

From apples to peaches to grapes, the region has experienced waves of productivity for different specialty fruit products throughout its history. These fruits were manufactured into jams, jellies, and other canned goods. Several townships—especially the ones below the escarpment—exploded with canneries, basket factories, grading stations, packing warehouses, cold storage plants and shipment centres.

Co-operative organizations and fruit growers' associations were formed to further the interests of fruit farmers, aided by advancements in scientific agriculture and local experimental farms. Such innovations were crucial for the advancement of the industry by introducing new plant varieties and virus-free stock, and providing education around topics like spraying, cultivating, pruning, fertilization, and more. The industry is equally indebted to the thousands of temporary farm workers, most often women, who toiled in those fields and orchards for over 100 years and provided essential labour that allowed the sector to achieve such success.

Use of Farmland for Tender Fruits

The 20th century censuses suggest that between seven and 14 per cent of Niagara's improved agricultural lands were planted with orchards, vineyards, small fruits, vegetables, nurseries and market gardens. This percentage was much higher than in any other part of the province. Long before the 1900s though, Niagara was already home to such luxuries. On his journey across Lake Erie towards Lake Huron in 1678, Father Louis Hennepin described forests that were "chiefly made up of Walnut-trees, Chestnut-trees, Plum-trees, and Pear-trees, loaded with their own Fruit and Vines."⁸⁹ In addition, he and his men came across wild cherries growing near Niagara Falls.⁹⁰

A little more than a century later, apples were the primary fruits grown in Niagara.⁹¹ Women would use them in a variety of meals for the family, but they could also be turned into higher value products like cider. Similarly, prominent Queenston merchant Robert Hamilton distilled peach brandy from a small orchard he had planted. Elizabeth Simcoe, wife of the first Upper Canadian Lieutenant Governor, wrote about the numerous peaches, cherries, grapes, currants, raspberries, huckleberries and cranberries along the Niagara River in her diary from the 1790s.⁹²

Yet, fruit growing was not a viable venture for the average farmer until much later in the 19th century. By the 1850s, farmers in Niagara began to improve their orchards, and new varieties were brought in from England and the US. Farmers continued their investments in this regard, encouraged by their climatic advantages and the fact that new railroads were opening urban markets. The Niagara Fruit Growers' Association was established in 1859 by a government Act, with its purpose being "the advancement of the science and art of fruit culture, by holding meetings for the exhibition of fruit and for discussion of all questions relative to fruit culture, by collecting, arranging and disseminating information, and by such other means as might from time to time seem advisable."⁹³

Growers agreed that by the 1880s, Niagara's fruit industry had officially taken root.⁹⁴ The sector was generally centred in the townships of Lincoln County, since the peninsula is naturally divided by the Niagara Escarpment into two main climatic regions. The northern section has a frost-free period that is 10–20 days longer than the southern portion and has higher minimum winter temperatures. These climatic variations from township to township impacted farmers' decisions on what to grow. While Welland generally produced crops aimed towards stock-rearing such as hay and silages, corn fodder, corncobs and hulls of grain and other seeds, in Lincoln fruit was the "chief product".⁹⁵

Throughout the 1800s, and even around the turn of the 20th century, apples were Niagara's main fruit product. In 1900, the region produced a total 695,616 bushels—in comparison to only 338,009 bushels of peaches. Niagara growers also produced 10 million lbs. of grapes and two million quarts of small fruits like strawberries, raspberries, currants, etc. in that year.

Lincoln was Canada's leader in the production of peaches, grapes, pears, and cherries at that time, also producing the second highest quantities of apples, plums, and other small fruits in the nation. Remarkably, only 1.9 per cent of the total improved lands in Lincoln County were vineyards and nurseries/market gardens, but this was the most of any county in the entire country.⁹⁶ Welland County was close behind, containing the third-most vineyards and nurseries in all of Canada. Although production was less significant compared to Lincoln, Welland was still a major fruit producer in the mid-late 1800s, both statistically and in the minds of its farmers.⁹⁷ The second-highest number of vineyards and nurseries in 1900 were in South Wentworth County, adjacent to the westernmost part of Lincoln County (now Grimsby) and encompassed the rest of the land below the escarpment in what is now Winona and Stoney Creek.



Picking grapes in Grimsby, 1905. Photo courtesy Grimsby Museum.

At the turn of the 20th century, Lincoln also had the most orchards (10,925 acres) in the province, and the second-most in the entire country after Kings District in Nova Scotia. At that time, orchards made up 8.5 per cent of the entire area of the county's improved farms. As noted earlier, these orchards made up Ontario's most valuable farmland and, by 1910, peaches quickly became the most prominent fruit in Lincoln County, while apples remained the leading fruit in Welland County.⁹⁸

In 1920, Lincoln raised the bar once again in what was the beginning of one of its most productive fruit-growing decades on record.⁹⁹ The Ontario Fruit Growers' Association (OFGA) attributed the exponential growth of Niagara's fruit sector between 1896 and 1921 to three things, namely: "improvement in transportation facilities, in marketing methods, and in grading and packing the product."¹⁰⁰ The OFGA was a key stakeholder in Niagara's fruit sector, beginning in 1859 and still existing today as the Ontario Fruit and Vegetable Growers' Association (OFVGA). As a non-profit, it has represented Ontario's fruit and vegetable farmers for over 160 years at all levels, from fighting for better legislation to providing judging standards at rural fairs and exhibitions.¹⁰¹

By 1927, Ontario's fruit and vegetable industry was worth over \$23 million, representing 85 per cent of the country's total outputs in that sector.¹⁰² Therefore, the government saw the value in investing in some of the sector's key areas through infrastructure and co-operatives. For example, it provided funding in 1914 for the cold storage plant in Grimsby. Also, when growers banded together to form the Niagara Peninsula Growers (NPG) Ltd. as a commercial group, they were supported by the Minister of Agriculture who championed a meeting in Vineland in 1920 for "the purpose of discussing the advisability and practicability of organizing a fruit marketing company for the remaining fruits of the [Niagara] district."¹⁰³ That same year, the Minister also promised members of the NPG that he would provide financial assistance to fund the construction of more packing houses.¹⁰⁴

Experimental Plots and Agricultural Science

Aided by local agricultural societies, annual fairs and exhibitions, generational knowledge, and contributions by experts working in experimental farms and colleges in and around Niagara, the period from 1906 to 1944 has been referred to as "the beginning of scientific agriculture."¹⁰⁵ Already 50 years prior, Welland County farmer William McMicking foreshadowed such a desire for research into the agricultural sciences. In 1852, when writing about the state of agriculture in that part of the peninsula, he said:

"The time has come in which science is lending a helping-hand to elevate the calling of the farmer, and when every farmer may know what manures and what cultivation is necessary to render his land productive; and the time will come when every farmer must know something of the principles of agricultural chemistry, to hold anything like a respectable standing among his fellow farmers."¹⁰⁶

Little did he know the impact that experimental plots and laboratories would have within the region just a few decades later.

The Ontario School of Agriculture in Guelph was founded in 1874, on a farm provided by the Ontario government to teach young people about agriculture and to implement modern technologies. Still existing today as the Ontario Agricultural College (OAC), this school has had a long legacy of groundbreaking research in areas of food, agriculture, and the environment. The OAC established experimental fruit farms and “variety test” plots throughout Ontario. Prior to 1906 there were 15 experimental fruit stations on grower-owned and operated test plots, including ones in Winona, Grimsby, Jordan Station and St. Catharines, in cooperation with the Ontario Fruit Growers’ Association and the Department of Agriculture.

Yet, there was still a need for more advanced, full-time testing. Provincial fruit industry leaders proposed a new Horticultural Experiment Station in Niagara, stating: “The growing importance of the fruit interests and the multiplicity of the unsolved problems connected with it, well warrant the careful consideration of the Government and the united efforts of the growers.”¹⁰⁷ They argued it was important that such a research centre be opened and operated in Niagara, itself, to support local efforts in a prime fruit-growing district.

The experiment station in Vineland was founded to develop, test, and introduce plant varieties, particularly fruits, and produce virus-free stock for Ontario farmers. While the land was donated, the equipment was purchased by the Department of Agriculture and funded by the government throughout the 20th century. The Horticultural Experiment Station in Vineland became a leading organization for testing and experimentation, impacting Niagara’s agricultural development throughout the 20th century by coordinating the Ministry’s horticultural research and service programs.



Vineland experiment station, 1914. Photo courtesy of Brock University Library Archives and Special Collections.

Throughout the 20th century, Ontario fruits, vegetables, and nursery stock fell prey to various diseases and viruses. This experiment station, along with the Dominion Plant Pathology Laboratory in St. Catharines, played a vital role in assigning solutions to these issues.

Not only that, but they provided advancements in research that allowed Niagara’s fruit crops to flourish. One such advancement was in spray and dusting technology, which was vital for eliminating fruit-devastating pests and diseases such as the railroad worm, the San Jose scale, and the peach canker. In the 1920s, a spray service was begun on a more regular basis to advise farmers on when and with what to spray. There were only two spray services in the province at this time, and one of them was dedicated to the Niagara peninsula alone.¹⁰⁸

This experiment station was urged by provincial leaders to conduct research facilitating the improvement in Niagara’s grape varieties, which today is one of Niagara’s main economic drivers via agri-food tourism. Niagara’s wine industry had its start in the 1800s as some farmers grew small plots of grapes for home use. Table grape varieties like the Concord and the Niagara were mostly eaten on their own or made into jams. Wine was manufactured commercially in larger quantities by the 20th century when new specific vinifera varieties were brought to the region. Around that time, Thomas G. Bright and F. A. Shirriff formed the Niagara Falls Wine Company, producing over 300,000 gallons by 1904.

In 1921, only one white variety and one “blue” variety of grape were commercially grown and sold in Niagara.¹⁰⁹ The Department of Agriculture appointed an Ontario Wine Standards committee in 1933, advocating to produce new varieties of grapes for finer table wines, and thus a small winery was opened alongside the experiment station in the 1940s. Following WWII, the rise in demand of lighter wines combined with research of new European-style hybrids allowed Niagara grape growers to achieve their goals. Prior to this, only five per cent of the production of wines in Niagara were table wines and the rest was all used for ports and sherries.

By the 1950s, French varieties and hybrids were introduced in Niagara and from 1918 to 1960, some 80,000 grape seedlings were grown at the experiment station as researchers conducted their studies, leading into what was called the “white wine bloom of the 1970s.”¹¹⁰ By the 1960s, vineyards became more common, replacing orchards in some parts of Lincoln County. Grape growers took advantage of the mechanical advancements that had been made in the 20th century, eventually investing in tractors

to make jobs like plowing, spreading fertilizer, disking and spraying more efficient and, by 1982, 90 per cent of grapes were gathered by machine harvesters.¹¹¹

A final example of experimentation in Niagara is shown in the story of global retailer Stokes Seeds on Martindale Road in St. Catharines, which opened in 1927 and sold seeds all over the world. Expanding its head office into New York in the 1970s, it became the principal supplier to farmers and greenhouse growers throughout Canada and the northeastern United States. Part of its success came from the ability to test the seeds on an adjacent farm to assess how well they performed in local weather and soil conditions. A large portion of its sales were made directly through mail order, and due in part to increasing globalization throughout the 20th century, this local company was able to flourish.¹¹²

Co-operatives and Supporting Industries

In the early 20th century, some farmers preferred to drive their products to commission houses and sell in bulk where they'd be offered different prices for produce of different grades. On years where there was a lighter crop, the salesmen would drive straight to the farmers who could then sell at a higher price directly from their property. These salesmen became an issue for many farmers who felt they were being lowballed, and thus co-operative organizations were formed to ensure fair market prices. Niagara Peninsula Growers Ltd., formed in 1921, was one such co-op. It did business of \$1.5 million in that first year. However, because there were not enough growers in the region joining this co-op, the organization folded in 1924. A few years later, a new company was formed called Niagara Packers Ltd. which lasted into the 1980s. Another one in St. Catharines, the Cold Storage and Forwarding Company, founded in 1898, bought fruit from local growers while also offering tools and items to members at wholesale prices. Between 1890 and 1900, the fruit and vegetable canning industry in St. Catharines grew from one factory to six, employing hundreds of locals.

Despite the large quantities exported each year, Niagara's co-op sales were not substantial in comparison with other districts in the province. In 1930, Welland County had the second-lowest-value amount of produce sold in the whole province via co-ops, only \$1,253 worth of crops and animal byproducts. Lincoln placed somewhere around the middle with \$174,652 in total co-op sales that year.

In addition to securing fair market prices, co-operatives also worked to support fruit-growing-adjacent industries. In fact, the NPG were formed largely because of "the great basket famine" of 1920, wherein a lack of baskets for packing

fruit eliminated a large portion of their potential profits.¹¹³ Canneries and basket factories were two of the main supporting industries for Niagara's fruit sector throughout the 20th century, employing thousands of labourers and producing the items necessary for packing, shipping and sale of goods. There were many basket factories in the region, directly supporting the fruit sector by providing baskets, berry boxes, and hampers for shipping produce.¹¹⁴ Full of flammable material, many of these buildings burned down and it is common to see advertisements for fire insurance in the local records.¹¹⁵

Before 1903, most of the independent canning factories in Canada were in the Niagara region.¹¹⁶ In 1903, 30 of these companies amalgamated to form Canadian Canners Ltd. In 1910, another 60 canning companies joined, and the company became known as Dominion Canners. The E. D. Smith Company was one such cannery located in Winona that quickly became a household name, offering a ready market to local growers for decades. Fruit was shipped there from all over the region. The Yungblut farm in Pelham shipped there, as well as to the nearby Harry Daboll & Sons' Canning Factory in Effingham, showing an interconnected internal web of manufacturing and processing agri-food stakeholders.¹¹⁷



Workers at Canadian Canners Ltd., 1914. Photo courtesy of the Grimsby Museum.

In the 1920s, manufacturers processed more than just jams and jellies, also focusing on evaporated and preserved products, wines and cordials, as well as vinegar, pickles, sauces and relishes.¹¹⁸ Throughout this decade, Niagara introduced several methods for preserving and manufacturing these valuable goods. Pre-cooling facilities were constructed for fruit so that it could last a few days longer in storage before being shipped. Also, experiments conducted at the Horticultural Experiment Station were

valuable in introducing hardier varieties of peaches more conducive to processing and shipping. Three new varieties of Vedette, Valiant, and Veteran peaches were created at this time and remained popular until the mid-1940s.¹¹⁹

Transportation, Markets, and Labour

Growers in Niagara produced large quantities of fruit but also needed a way to transport it. The construction of the Great Western Railway in the 1850s allowed for more efficient access to markets. The produce from the expanding fruit industry at that time fed and employed people within Niagara, with fresh fruit and canned goods being shipped in bulk to nearby cities like Hamilton and Toronto. In addition to rail transport, steamboats were also used for shipping Niagara's fruit products.¹²⁰ In the age of rail and steam travel, Niagara's fruit sector flourished.

Plant nurseries and market gardens also flourished in Niagara during the latter half of the 19th century, aided by advancements in transportation. By the 1850s there were fewer than two dozen nurseries in Upper Canada, half of them located in Niagara.¹²¹ Fuller's 1863–64 Directory of St. Catharines, and Vernon's 1901–02 Directory of the same both list men working as "gardeners" and show a variety of market gardens in operation. Many of them are indicated on the 1913 fire insurance plans in the appropriately named "Garden City." One of the earliest nursery operations in St. Catharines belonged to the Beadle family, who had cultivated approximately 250,000 fruit trees already by 1839.¹⁹ Delos White Beadle targeted customers by putting ads in the *St. Catharines Journal*, and shipped products via the Welland Canal, Lake Ontario, and Lake Erie.

With the advent of rail and steam, nurseries and market gardens now had access to a wider variety of markets. In 1887, the Fonthill Nurseries brought in around \$200,000 in annual sales and local advertisements referred to it as one of the "largest and finest nurseries in Canada." The ability to travel further distances thanks to rail and steam also made it easier for Niagara's manufacturers to create outposts in larger city centres.

Part of what made the Fonthill Nurseries so successful was the fact that it had a distribution office based in Toronto, which connected it to more avenues for sale. Eventually, it shipped to customers worldwide and, in the 1930s, its catalogue included flowering shrubs, roses and evergreens, fruit trees, ornamental and shade trees, small fruits, asparagus, and rhubarb plants. Similarly, Welland Vale Works on the Welland Canal—manufacturers of agricultural implements—had a warehouse in Toronto and eventually opened a subsidiary company in Montreal, by the 1890s.



One of the largest plant nurseries in Niagara prior to 1900 was Morris, Stone & Wellington Nurseries in Fonthill, Ontario, which was also known as "Fonthill Nurseries." Their advertisements, like this one, boast that it is the "largest in Canada." Photo courtesy of the Pelham Historical Society.

The destination for Niagara's agricultural products was mostly within the immediate area and surrounding cities, but jams, jellies and other fruit and vegetable by-products made their way into Western Canada, Quebec, and the Maritimes. Some of it even ended up being shipped to Great Britain. However, these products were not shipped westward in substantial quantities until the 1900s.¹²² Even by 1910, farmers, government officials, and key stakeholders discussed the practicality of shipping peaches to England in bulk, believing the costs to be prohibitive.¹²³ Industry leaders were quick to set up booths and show off local produce at international fairs and exhibitions, but it was not profitable to sell fruit there in large quantities.

As the government saw the profits from this region, it aided shipping efforts by adding a new railway switch and spur lines to the Grand Trunk Railway in Grimsby, directed towards the new government-funded Cold Storage and Ice Plant, as well as the cannery further down the street. In 1922 there was a glut of peaches, and in September a record was set when 486 carloads of fruit were sent out from the train stations in Grimsby alone.

In addition, the Hamilton, Grimsby, and Beamsville electric rail line and the Grand Trunk Railway were essential for shipping produce from West Lincoln at this time. Lines like the Niagara, St. Catharines and Toronto Railway (N S & T) were essential for other parts of the region, too, as produce was sent to Toronto daily. In addition, the St. Catharines Cold Storage and Forwarding Company was one of the oldest processing and shipping centres in the region, founded in 1898 by a group of local farmers and fruit growers.



Flower, fruit, and vegetable exhibition in the St. Catharines Armoury, 1910. Photo courtesy of the St. Catharines Public Library Online Collections.

In Welland County, the railway was also extended in key areas. According to one report, four railways went through Welland County in 1880. By the early 1900s, as the Welland Division of the N S & T went through Thorold, Welland, and Port Colborne, it connected the southern, industrial parts of the peninsula along the Welland Canal with the fruit producers in St. Catharines, Fonthill, and the rest of Pelham. As had been provided in Grimsby, a spur off the track line was designed in Fonthill to serve the Canadian Cannery factory that manufactured canned tomato products as well as strawberries, raspberries, asparagus, beets, plums, peaches and pears. In the 1920s, pears were even imported there from the US to be processed along with local products. Thus, Niagara had become an internationally recognized manufacturing centre for the northeastern fruit market.¹²⁴ In general, markets for Niagara's fruit and vegetables were enhanced by these local points of manufacturing and the proliferation of canneries. Similarly, there were small wineries appearing by the 1970s and 1980s as quantities of high-quality wine-making grapes became more readily available.

The railway also brought workers in from local cities to the rural areas where they could hop off the train and look for work in the orchards or at the local cannery. Temporary labourers are a vital component of Niagara's fruit industry today, and they have been throughout much of history. Work on fruit farms and nurseries was tedious, hard labour. In the past, it was mostly conducted by temporary labourers hired on a daily or weekly basis, since so much of it was seasonal.

This menial labour was in large part performed by non-British immigrant women and girls, mostly of Italian and Polish descent and coming over from Buffalo. These women were housed in dormitories in St. Catharines, Beamsville and Stamford.¹²⁵ Haudenosaunee people from the Six Nations

Reserve at the Grand River also came to the region to work during harvest.¹²⁶ Both these Indigenous and immigrant workers, mostly women, were seen as lower-class citizens.

During wartime when young men were not available to work on the farm, there was a shortage of labour and teenaged girls and young women from the cities, known as "Farmerettes", were hired to help pick and pack fruits. They were billeted at the farms in temporary housing. As "daughters of Canada", these workers were treated far better than the immigrant workers returning to Niagara every year during the busy season.



Farmerettes on a wagon, 1917–18. Photo courtesy of the Grimsby Museum.

Women supplied essential elements of labour in Niagara's fruit sector from 1900 to 1969. It was common for farms to be worked by the family that owned it, with some year-round labourers (depending on the size) and supported by temporary hired workers. In 1930, there were 5,809 total temporary male workers in Niagara—the second highest number in the censuses (after Kent).¹²⁷ What stands out, though, are Niagara's 4,032 temporary female workers. Nowhere else in Ontario were there even close to that many women temporarily employed on farms. The next highest district was Wentworth with 1,451 temporary female labourers.¹²⁸

While many of those women traveled to Niagara from surrounding areas, much of the labour was also done by local women. Women were commonly employed in canneries all over the region, contributing their wages to the collective household income. Many housewives would perform their full-time domestic duties, can and jar fresh fruits for home use, and then go next door to tie grapes at the neighbour's farm, pick beans, or work in the local factory to can and jar some more.¹²⁹

Niagara's fruit industry is one of the defining elements of the region's agricultural sector. While the climate has been conducive to these crops for centuries, commercial fruit production for export really took off by the late 19th century, growing to a point where it supplied markets all over Canada, and even garnered international attention. It has remained key to the region's agricultural economy in recent decades, supported by major growth in food and beverage processing, food service, hospitality and retail activity.

The grape is now Niagara's primary fruit product, the cornerstone of the region's renowned wine tourism industry. However, it took decades to reach this level of commercial success. Similarly, while the area was home to a handful of highly successful market gardens and nurseries, the production of ornamental horticulture was not a main driver in Niagara's agricultural sector until later into the 20th century. Still, these industries dominating the peninsula today are deeply rooted in histories of scientific innovation, immigrant labour, and government investment.

Conclusion

Today, many elements historically important for the development of Niagara's agricultural sector remain relevant. Niagara's soil, climate, and access to fresh water are some of the main reasons for the success of this sector, as well as the unique physiography offered by the Niagara Escarpment. While the agricultural sector's development can be directly attributed to the unique Niagara landscape, it was also heavily influenced by external factors such as international trade policies, government support, advancements in technology for both transportation and agricultural science, and the region's various waves of immigration and settlement.

Throughout history, public investments by government bodies and private investments by co-operatives, agricultural societies, and large business owners with a stake in the industry have supported advancements in this sector. Competition with international markets has long been an issue, continuing today as the global marketplace has made it difficult for Niagara's farmers to sell their products locally without dropping their prices to match imported foods. Twentieth-century advancements have made it so that agricultural products grown in Niagara can be easily manufactured and shipped anywhere in the world. Yet, like in the past, the sector is still largely governed by policies that are arguably prohibitive to the success of local producers in some industries, such as liquor taxation and limitations on where products can be sold.

Labour is another defining element historically as growers have relied on the labour of temporary farm workers for more than a century. In fruit farming and plant nurseries especially, the role of women was vital. The sector continues to depend on these men and women today.

Scientific and technological advancements are also noteworthy. The groundbreaking experiments and research conducted in places like the Vineland Research and Innovation Centre in Lincoln have helped growers combat obstacles like plant disease and pests using environmentally sustainable methods, while also introducing new plant varieties and hybrids.

The educational opportunities and agricultural research at local institutes like Brock University and Niagara College are part of a long tradition of knowledge mobilization and scientific innovation within the region's agri-food sector. In the present day, researchers at Brock University share practical knowledge regarding environmental sustainability via the Brock-Lincoln Living Lab—a five-year partnership between Brock and the Town of Lincoln that "strives to bridge the gap between theory and practice in order to solve complex sustainability issues."¹³⁰ The university is also deeply involved in the local wine industry. Its Cool Climate Oenology and Viticulture Institute (CCOVI) was established in 1996, in partnership with the Grape Growers of Ontario—an organization with its head office in St. Catharines.

Over time, the agricultural sector has developed in a variety of ways. By understanding what this progression looks like through the lens of history, it is hoped industry leaders and stakeholders can make more informed decisions for the future of agriculture in Niagara.

Image Credits

Page 2, Father Louis Hennepin: This image was first published in Description de la Louisiane in 1683. It was later translated into English in 1698 as A New Discovery of a Vast Country in America. A Facsimile View of Niagara Falls by Father Louis Hennepin, 1698 © Library and Archives Canada | Bibliothèque et Archives Canada, Acc. No. R9266-2197 Peter Winkworth Collection of Canadiana.

Page 5, Woolverton & Son: This is a photograph of a sketch found on page 17 in the 1971 reprint of the Illustrated Historical Atlas of the Counties of Lincoln & Welland Ont. Toronto: H. R. Page & Co., 1876

Page 19, Fonthill Nurseries: Drawing of the Fonthill Nurseries labeled "Largest in Canada—Over 850 Acres" dated May 9, 1912 and produced in Toronto was sourced from Rickers, Don. "Pieces of our past: A tale of two nurseries". Pelham Today. September 23, 2022. Accessed April 22, 2023.

Endnotes

¹ Niagara Region Agricultural Task Force, *Growing the Industry: Farm Economic Viability for the Long-Term*, 2006, accessed April 16, 2023.

² Niagara Region, *Niagara Agriculture Economic Impact*, 2017, accessed April 16, 2023.

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⁴ Our analysis ends at 1969, when the Province of Ontario created the Regional Municipality of Niagara (Niagara Region). Modern-day agriculture in Niagara is studied in subsequent Wilson Foundation Project working papers.

⁵ Niagara Region, *Niagara Region Archaeological Management Plan: APPENDIX A—Indigenous Archaeological Site Potential Model* (2021), 59, accessed Apr. 16, 2023.

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⁷ Louis Hennepin, *A New Discovery of a vast Country in America, Extending above Four Thousand Miles, between New France and New Mexico. With a Description of the Great Lakes, Cataracts, Rivers, Plants, and Animals*. (London: Printed for M. Bentley, J. Tonson, H. Bonwick, T. Goodwin, and S. Manship, 1698), 50, accessed July 26, 2023.

⁸ Hennepin, *A New Discovery of a vast Country in America*, 23.

⁹ Hennepin, *A New Discovery of a vast Country in America*, 292.

¹⁰ Isaac Weld, *Travels through the States of North America, and the Provinces of Upper and Lower Canada, During the Years 1795, 1796, and 1797*. By Isaac Weld, Junior. Third Edition. Illustrated and Embellished with Sixteen Plates. In Two Volumes. Vol. 1 (London: printed for John Stockdale [by Luke Hansard], Piccadilly, 1800), 93, accessed April 16, 2023.

¹¹ Niagara Region, *Niagara Region Archaeological Management Plan: APPENDIX A—Indigenous Archaeological Site Potential Model* (2021), 27, accessed April 16, 2023.

¹² Barry G. Warner & Pierre Buteau, "The Early Peat Industry in Canada, 1864–1945". *Geoscience Canada*, 27, no. 2 (2000): 58, accessed May 9, 2023.

¹³ The Pennsylvania German Folklore Society of Ontario, *Tales of the Twenty*, Vol. 7. (Campbellcroft, ON: Homeward Bound Books, 1979), 23.

¹⁴ Jackson, John. *St. Catharines Ontario: Its Early Years*. (Belleville: Mika Publishing, 1976), 33.

¹⁵ David Wood, *Making Ontario*, (Montreal: McGill-Queens University Press, 2000), 98.

¹⁶ W.B. Turner, "The Early Settlement of Niagara" in *Niagara's Changing Landscapes*, edited by Hugh Gayler, (Ottawa: Carleton University Press, 1994), 190.

¹⁷ In Niagara and Grantham Townships for example, the top four wheat producing families in the year 1787 (Phelps, Secord, Street, and Tenbroeck) all employed the use of enslaved labour. Jessica Linzel, "Re-imagining Niagara: A Spatial Study of Economic Development

(1783–1812)," MA Thesis, (Brock University, 2021), 46.

¹⁸ Wood, *Making Ontario*, 27.

¹⁹ Wood, *Making Ontario*, 97.

²⁰ Howard Angus Kennedy, *Canada's Farthest South: Niagara and Lake Eric Fruit District, a Trip through the Famous Peach Orchards and Vineyards of Southwestern Ontario*, (Ottawa: Dept. of the Interior, 1910), 29.

²¹ William McMicking, Secretary of the Welland County Agricultural Society wrote in 1852: "Farming operations are, for the most part, conducted by the owners of the land themselves; of late years, however, the renting system has been to some extent adopted. This may, and does, work very well in some cases, in which the tenant is observed to be more prosperous than the proprietor himself has been; yet it is natural to suppose that a tenant would not feel the same interest in improving, and especially in ornamenting, a farm which he has no guarantee for holding beyond a few years, as if the farm were his own; and hence the system is a bad one, and calculated to hinder the general improvement of the county." William McMicking, *Agricultural and Statistical Report of the County of Welland for the Year 1852*, (Niagara-on-the-Lake Public Library Heritage Portal: NOTL, Ontario), accessed July 26, 2023.

²² Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1921), 77, accessed from Brock University Library Archives & Special Collections June 26, 2023.

²³ Hon. John S. Martin, Minister of Agriculture, *A Farm Home in Ontario Canada: Pictures Tell the Story*, 37.

²⁴ Kennedy, *Canada's Farthest South: Niagara and Lake Eric Fruit District, a Trip through the Famous Peach Orchards and Vineyards of Southwestern Ontario*, 15.

²⁵ Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1901), 58, accessed from Brock University Library Archives & Special Collections June 26, 2023.

²⁶ Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1910), 12, accessed from Brock University Library Archives & Special Collections June 26, 2023.

²⁷ Statistics Canada, *Census of the Canadas, 1851–2: Agricultural Produce, Mills, Manufactories, Houses, Schools, Public Buildings, Places of Worship, &c., Vol II*. (Quebec: Lovell and Lamoreaux, 1855), 60, accessed July 23, 2023.

²⁸ From 1900-1969, Niagara district was comprised of two counties containing a total fifteen townships. Lincoln County included the northern townships of Gainsboro, Caistor, Grimsby, Clinton, Louth, Grantham and Niagara, while Welland County to the south included Pelham, Thorold, Stamford, Willoughby, Crowland, Wainfleet, Humberstone and Bertie townships. In 1970, the two counties amalgamated to form the Regional Municipality of Niagara.

²⁹ Statistics Canada, *Fifth Census of Canada 1911, Agriculture, Volume IV*, (Ottawa: J. de L. Taché, 1914), accessed July 1, 2023 and Statistics Canada, *1971 Census of Canada, Agriculture, Ontario*, (Ottawa, 1973), accessed July 1, 2023.

³⁰ Statistics Canada, *Fifth Census of Canada 1911, Agriculture, Volume IV*, and Statistics Canada, *1971 Census of Canada, Agriculture, Ontario*.

³¹ In 1910, there were 190,271 acres of occupied farmland in Lincoln

County and 218,322 acres in Welland County. By 1960, Lincoln had more farmland with 165,853 acres while Welland had only 125,707 acres. This information was recorded in Statistics Canada, *Fifth Census of Canada 1911, Agriculture, Volume IV*, (Ottawa: J. de L. Taché, 1914), accessed July 1, 2023 and Statistics Canada, *1961 Census of Canada, Agriculture, Canada*, (Ottawa, 1963), accessed July 1, 2023.

³² In Lincoln & Niagara 12,695 people lived in rural areas and 14,871 lived in urban areas. In Welland 12,587 lived in rural areas and 13,503 lived in urban areas. This information was recorded in Statistics Canada, *Fourth Census of Canada, 1901, Bulletin II. Rural and Urban Population of the Provinces of Manitoba and Ontario*. (Ottawa: The Census Office, 1903), accessed July 1, 2023.

³³ The total value of Niagara's agricultural sector from 1900–1969 is comprised of values recorded in the decadal censuses including the total value of land and buildings, farm implements and machinery, and livestock. Statistics Canada, *Fourth Census of Canada, 1901, Bulletin II. Rural and Urban Population of the Provinces of Manitoba and Ontario*. (Ottawa: The Census Office, 1903), accessed July 1, 2023, and Statistics Canada, *1971 Census of Canada, Agriculture, Ontario*, (Ottawa, 1973), accessed July 1, 2023.

³⁴ This value was determined using the Bank of Canada's inflation calculator for the year 1914, which is as far back as it goes.

³⁵ For example, in 1910, growers stated: "The damage done by hail to the branches of trees was serious two years ago." They later said: "Many of you have lacked buds as the effect of hail this year, and in the Grimsby district a lot of damage was done." Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1911), 58–59, accessed from Brock University Library Archives & Special Collections June 26, 2023.

³⁶ The financial returns of Niagara's fruit industry in 1921 as determined by C. E. Riley of the Guelph Agricultural College state: "With regard to the Niagara district, we have probably the greatest example in Ontario of increased values in farmland. Those old farms once had the same values as any other farms, but we have prosperity in the Niagara district—or evidence of it at least—that is not equalled in any other part of Ontario in agricultural lines." Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1921), 76, accessed from Brock University Library Archives & Special Collections June 26, 2023.

³⁷ In their annual report from that year, growers stated: "The natural surface drainage of the district for the most part is very good, with the exception of some small, isolated areas." Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1901), 107, accessed from Brock University Library Archives & Special Collections June 26, 2023.

³⁸ Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1911), 27–28, accessed from Brock University Library Archives & Special Collections June 26, 2023.

³⁹ In 1910, the value of farm implements and machinery was \$1,119,567 in Lincoln and \$1,018,361 in Welland. By 1960, the value of farming implements in Lincoln County had risen exponentially and became worth approximately twice as much as that of Welland, valued respectively at \$13,461,500 and \$6,548,300. At this time, however, the number of farms in Welland began declining at a faster rate than in Lincoln, so this divide was partially because there were simply fewer existing farms requiring machinery. Statistics Canada,

Fifth Census of Canada 1911, Agriculture, Volume IV, and Statistics Canada, *1961 Census of Canada, Agriculture, Canada*.

⁴⁰ Ernest Cruikshank lists the mills in Niagara by 1792, copied from the returns compiled by Surveyor General D. W. Smith in *Notes on the history of the district of Niagara, 1791–1793*, (Welland: Welland Tribune Print, 1914), 49. The numbers from 1805 come from Library and Archives Canada, Upper Canada and Canada West: Returns of Populations and Assessment, RG5 B26 vol 4, "A General Account of all the Rateable Property in the District of Niagara from the 4th Day of March 1805 to the 3rd Day of March 1806 Inclusive," microfilm reel H-1175, 774.

⁴¹ Ernest Cruikshank and Andrew F. Hunter, *The Correspondence of the Honourable Peter Russell: With Allied Documents Relating to His Administration of the Government of Upper Canada during the Official Term of Lieut.-Governor J. G. Simcoe, While on Leave of Absence. Volumes I–III*. (Toronto: The Ontario Historical Society, 1932).

⁴² Marvin McInnis, "Marketable Surpluses in Ontario Farming, 1860," *Social Science History* 8, no. 4 (1984): 395–424. accessed April 16, 2023.

⁴³ The Hessian fly devastated crops in the early 1800s, and the wheat midge wreaked havoc throughout the 1850s. By the 1900s, insects and disease still posed constant danger to growers. Robert Leslie Jones, *History of Agriculture in Ontario 1613–1880*, (Toronto; Buffalo: University of Toronto Press, 1946), 212.

⁴⁴ In Pelham township for example, Maple Villa farm on the corner of Balfour and Metler streets purchased milk from farmers during the 1880s and 1890s, processing it as the central manufacturing point for local animal byproducts. Margaret Comfort, *Intertwined Through Time: Fenwick and North Pelham*, no date or publisher cited, 187.

⁴⁵ This was evidenced, for example, in the records of the Goring family in Niagara Township. Library and Archives Canada, Francis Goring fonds, entries from December 1 and December 6, 1791.

⁴⁶ Jones, *History of Agriculture in Ontario 1613–1880*, 240.

⁴⁷ Jones, *History of Agriculture in Ontario 1613–1880*, 155.

⁴⁸ Douglas McCalla. "The Internal Economy of Upper Canada: New Evidence on Agricultural Marketing Before 1850." in *Historical Essays on Upper Canada*, edited by Bruce G. Wilson and J. K. Johnson, 253, (Canada: MQUP, 1989).

⁴⁹ Jones, *History of Agriculture in Ontario 1613–1880*, 130.

⁵⁰ They go on to say: "When you consider exchange ranging from 12% to 18% you will realize the amount of toll the people of Canada paid the United States fruit growers." Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1921), 67, accessed from Brock University Library Archives & Special Collections June 26, 2023.

⁵¹ Canadian economic historian Douglas McCalla makes this argument. Douglas McCalla, *Planting the Province: The Economic History of Upper Canada, 1784–1870*. (Toronto: University of Toronto Press, 1993), 10.

⁵² Jones, *History of Agriculture in Ontario 1613–1880*, 219.

⁵³ Jones, *History of Agriculture in Ontario 1613–1880*, 240.

⁵⁴ Jones, *History of Agriculture in Ontario 1613–1880*, 89.

- ⁵⁵ Jones, *History of Agriculture in Ontario 1613–1880*, 135.
- ⁵⁶ Robert R. Mutrie, “Thorold Township Papers” in *The Township Papers of the Niagara Settlers*, accessed September 19, 2023.
- ⁵⁷ Robert R. Mutrie, “Thorold Township Papers” in *The Township Papers of the Niagara Settlers*, accessed September 19, 2023.
- ⁵⁸ In 1900, the combined total value of Lincoln and Welland’s field crops was \$1,390,714. Statistics Canada, *Fourth Census of Canada, 1901, Bulletin II. Rural and Urban Population of the Provinces of Manitoba and Ontario*.
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- ⁶² Statistics Canada, *Overview of Canada’s agriculture and agri-food sector*. last modified July 6, 2023, accessed July 23, 2023.
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- ⁶⁴ J. A. Dawson & L. R. Fortier, *Farm Mechanization in Ontario and Quebec*, (Ottawa: Department of Agriculture, 1954), 1.
- ⁶⁵ The 1960 and 1970 censuses only show categories of “10–69 acres” and “70–239 acres” rather than neat 50-acre increments like they had before.
- ⁶⁶ J. A. Dawson & L. R. Fortier, *Farm Mechanization in Ontario and Quebec*, 8.
- ⁶⁷ This was of only 1,213 farms reporting. There were 5,724 occupied farms in Niagara in 1930, so there were likely more trucks and machinery than what was recorded.
- ⁶⁸ Hon. John S. Martin, Minister of Agriculture, *A Farm Home in Ontario Canada: Pictures Tell the Story*, 17.
- ⁶⁹ Ian MacLachlan, *The Historical Development of Cattle Production in Canada*. (University of Lethbridge, 2006), 7.
- ⁷⁰ G. M. Winder, “Technology Transfer in the Ontario Harvester Industry 1830–1900,” *Scientia Canadensis*, 18, no. 1 (1994): 44.
- ⁷¹ Winder, “Technology Transfer in the Ontario Harvester Industry 1830–1900,” 38.
- ⁷² Fonthill resident Leman Reid was one of these necessary technicians who learned the mechanical trade and managed the can-capping operations at the local cannery throughout the 1920s, also working on all the repairs required at the plant. Albert E. Snow, *Fonthill 1920–1930: A glimpse of the glory years*, (1994), 58, courtesy of Local Histories Collection, Libraries and Cultural Resources Digital Collections, University of Calgary, accessed July 1, 2023.
- ⁷³ Agriculture Canada, *Dairy Husbandry in Canada*. Government of Canada Catalogue Number A63-1439/1981E-PDF, (Ottawa, 1982), 8, accessed from the Internet Archive July 1, 2023.
- ⁷⁴ David Wood, *Making Ontario*, (Montreal: McGill-Queens University Press, 2000), 125.
- ⁷⁵ Douglas A. Lawr, “Agricultural Education in Nineteenth-Century Ontario: An Idea in Search of an Institution.” *History of Education Quarterly* 12, no. 3 (1972): 347.
- ⁷⁶ Lowden began showing sheep at fairs and exhibitions in 1918 when he was only 11 years old. “71-Year Veteran Sheep Exhibitor,” *Niagara Farmers’ Monthly*, August, 1989, accessed from the West Lincoln Historical Society Archives July 11, 2023.
- ⁷⁷ E. F. Palmer, *Horticultural Experiment Station and Products Laboratory: the first fifty years 1906 to 1956*, (Toronto: Department of Agriculture, 1956), 31, accessed July 11, 2023.
- ⁷⁸ Blair Burgess, “Smithville Fair ‘shaping up’”, *West Lincoln Review*, August 21, 1991, accessed from the West Lincoln Historical Society Archives July 11, 2023.
- ⁷⁹ Joseph E. Masters, “Town of Niagara—Reminisces”, *The Masters Papers—1978*, The Niagara Historical Society Museum, 213, accessed July 11, 2023.
- ⁸⁰ The Fenwick Fair which began in 1856 had some spectacular horse and buggy races along Canboro Road. Similarly, the Thorold Agricultural Society began in 1846, and the Smithville Fair began in West Lincoln in 1878.
- ⁸¹ Robert W. Carbert, “Agricultural and Horticultural Societies and Fairs in the Niagara Peninsula” in *Agriculture and Farm Life in the Niagara Peninsula: Proceedings from the Fifth Annual Niagara Peninsula History Conference*, 51, Brock University, 1983.
- ⁸² Clinton & Louth Agricultural Society, “Prize List of the Clinton & Louth Agricultural Society,” Fall Fair booklet, 1915, accessed from the West Lincoln Historical Society Archives July 11, 2023, and “Lincoln Class ‘C’ Smithville Fall Fair September 4 & 5”, Fall Fair booklet, 1964.
- ⁸³ For example, the 1964 Smithville Fall Fair program booklet contains advertisements for feed providers, chemical spray producers, auto wreckers, dry goods stores, lumber providers, farm equipment dealers, drainage tile installers, farm service providers, and medical and fire insurance providers. Smithville Agricultural Society, “Lincoln Class ‘C’ Smithville Fall Fair September 4 & 5”, Fall Fair booklet, 1964, accessed from the West Lincoln Historical Society Archives July 11, 2023.
- ⁸⁴ “Niagara Parks School of Horticulture,” Brock University Library Archives & Special Collections, digital exhibit, accessed July 1, 2023.
- ⁸⁵ “Excerpts from Minute Books 1944–1948,” *Ontario Women’s Institutes—Port Colborne Branch*, L. R. Wilson Heritage Research Archives, accessed July 26, 2023.
- ⁸⁶ E. F. Palmer, *Horticultural Experiment Station and Products Laboratory: the first fifty years 1906 to 1956*, (Toronto: Department of Agriculture, 1956), 76, accessed July 11, 2023.
- ⁸⁷ This was paid back when receipts at Vineland and Jordan “exceeded the amount received in the previous year at the Jordan station by at least \$80.00...after being in operation only about a year the business at the Vineland station was so great that the railway refunded the money advanced, with interest”. E. F. Palmer, *Horticultural Experiment Station and Products Laboratory: the first fifty years 1906*

to 1956, (Toronto: Department of Agriculture, 1956), 74, accessed July 11, 2023.

⁸⁸ The shift towards mechanized farming is obvious when comparing advertisements in the previously mentioned prize list booklet for the 1915 Clinton & Louth Agricultural Society Fall Fair to those in the 1964 Smithville Fall Fair booklet. The 1915 booklet contains advertisements for businesses including department stores, horse dealers, hog dealers, a livery and boarding stable, a livery and dry goods store, and a butcher & livestock dealer. In 1964, the advertisements evolved to include auto wreckers, chemical spray producers, and mechanized farm equipment.

⁸⁹ Hennepin, *A New Discovery of a vast Country in America*, 80.

⁹⁰ Hennepin, *A New Discovery of a vast Country in America*, 77.

⁹¹ "The various species of this most useful of fruits grow in all the districts; but most plentifully around Niagara, and thence westward to the Detroit, where they have been cultivated with emulation and success. No country in the world exceeds those parts of the province in this particular." Robert Gourlay, *A Statistical Account of Upper Canada: Compiled with a View to a Grand System of Emigration. 2 Vols.*, (London: Simpkin & Marshall, Stationers Court, 1822), 153, accessed from the Internet Archive April 16, 2023.

⁹² "We have thirty large May Duke cherry trees behind the house, and three standard peach trees, which supplied us last autumn for tarts and desserts during six weeks, besides the numbers the young men eat. My share was trifling compared with theirs, and I eat thirty in a day." J. Ross Robertson ed., "The diary of Mrs. John Graves Simcoe, wife of the first lieutenant-governor of the province of Upper Canada, 1792–6," (Toronto: W. Briggs, 1911), 136–139, accessed through Internet Archive, September 19, 2023.

⁹³ Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1921), 8, accessed from Brock University Library Archives & Special Collections June 26, 2023.

⁹⁴ "The peach and grape industry of the Peninsula extends back more than fifty years, but neither industry was carried on, on a large commercial basis, until between 1885 and 1890." Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1901), 95, accessed from Brock University Library Archives & Special Collections June 26, 2023.

⁹⁵ Samuel Casey Wood, *Report of the Commissioners, and Appendices A to S*. (Canada: C. B. Robinson, 1881), 327.

⁹⁶ In addition to being the highest producer of grapes in 1900, Lincoln was also Canada's leader in the production of peaches, pears, and cherries. They produced the second highest amounts of apples, plums, and other small fruits as well. Statistics Canada, *Fourth Census of Canada, 1901, Bulletin II. Rural and Urban Population of the Provinces of Manitoba and Ontario*.

⁹⁷ In 1852, William McMicking wrote in his published notes *Agricultural and Statistical Report of the County of Welland for the Year 1852* that Welland County was "emphatically the fruit county. Apples, peaches, pears, plums, cherries, quinces, etc. Wherever proper attention is paid to their culture, all grow luxuriantly."

⁹⁸ In 1930, land in Lincoln County was worth \$174.65 per acre, which was the most expensive land in all of Ontario at the time. In Welland, the land was the 8th most valuable in the province, worth

\$100.31/acre. Statistics Canada, *Seventh Census of Canada, 1931, Ontario, Census of Agriculture*. (Ottawa: J.O. Patenaude, I.S.O., 1935), accessed July 1, 2023.

⁹⁹ Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1921), 67, accessed from Brock University Library Archives & Special Collections June 26, 2023.

¹⁰⁰ Fruit Growers' Association of Ontario, *Annual Report*, 79.

¹⁰¹ The 1915 Clinton & Louth Agricultural Society Fair wrote in their program booklet that the standards for fruit judging had been "approved by the Ontario Fruit Growers Association." Clinton & Louth Agricultural Society, "Prize List of the Clinton & Louth Agricultural Society," Fall Fair booklet, 1915.

¹⁰² Hon. John S. Martin, Minister of Agriculture, *A Farm Home in Ontario Canada: Pictures Tell the Story*, 43.

¹⁰³ Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1921), 63, accessed from Brock University Library Archives & Special Collections June 26, 2023.

¹⁰⁴ Fruit Growers' Association of Ontario, *Annual Report*, 67.

¹⁰⁵ J. H. H. Phillips, "A History of Fruit Crop Research on the Niagara Peninsula" in *Agriculture and Farm Life in the Niagara Peninsula: Proceedings from the Fifth Annual Niagara Peninsula History Conference*, 93, Brock University, 1983.

¹⁰⁶ William McMicking, *Agricultural and Statistical Report of the County of Welland for the Year 1852*, (Niagara-on-the-Lake Public Library Heritage Portal: NOTL, Ontario), accessed July 26, 2023.

¹⁰⁷ Palmer, *Horticultural Experiment Station and Products Laboratory: the first fifty years 1906 to 1956*, 8.

¹⁰⁸ Phillips, "A History of Fruit Crop Research on the Niagara Peninsula," 98.

¹⁰⁹ Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1921), 34, accessed from Brock University Library Archives & Special Collections June 26, 2023.

¹¹⁰ Ronald C. Moyer, "The Niagara Grape Industry—Evolution to World Status" in *Agriculture and Farm Life in the Niagara Peninsula: Proceedings from the Fifth Annual Niagara Peninsula History Conference*, (Brock University, 1983), 7.

¹¹¹ Moyer, "The Niagara Grape Industry—Evolution to World Status," 11.

¹¹² In 2000, 20% of their sales were through mail order. Gordon Pitts, "Stokes Seeds takes hybrid approach," *The Globe and Mail*, June 21, 2000, accessed July 11, 2023.

¹¹³ Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1921), 63, accessed from Brock University Library Archives & Special Collections June 26, 2023.

¹¹⁴ The 1901–02 classified business directory for St. Catharines, Merritton, Thorold, and Port Dalhousie lists the fruit basket manufacturers, fruit growers, fruit shippers, and fruit and vegetable canners all as separate categories. Vernon Directories, *Vernon's St. Catharines and Thorold city directory 1901/02*, (Hamilton, Ont.: Vernon Directories, 1901/1902), 140, accessed from the Brock University Archives & Special Collections June 15, 2023.

¹¹⁵ The 1901–02 classified business directory for St. Catharines, Merritton, Thorold, and Port Dalhousie lists 23 fire insurers, and their 1916 directory lists three times that number. Vernon Directories, *Vernon's St. Catharines and Thorold city directory 1901/02*, 144, and Vernon Directories, *Vernon's city of St. Catharines street, alphabetical, business and miscellaneous directory*, (Hamilton, Ont.: Henry Vernon & Son, 1916), 310, accessed from the Internet Archive June 15, 2023.

¹¹⁶ "Grown in the Garden of Canada: The History of the Fruit Industry in Grimsby, Ontario," The Grimsby Museum, digital exhibit, accessed July 1, 2023.

¹¹⁷ Comfort, *Intertwined Through Time: Fenwick and North Pelham*, 168.

¹¹⁸ Hon. John S. Martin, Minister of Agriculture, *A Farm Home in Ontario Canada: Pictures Tell the Story*, 43.

¹¹⁹ E. F. Palmer, *Horticultural Experiment Station and Products Laboratory: the first fifty years 1906 to 1956*, 34.

¹²⁰ "The fruits of the Niagara district go to a rather cosmopolitan market. A great deal of the fruit grown within handling distance of Hamilton is sold on the open market. During the fruit season buyers from Toronto and other cities purchase a good deal of fruit on the Hamilton market and have it shipped out, especially to Toronto by boat. The large portion of the fruit sold on the local market is for home consumption. Other markets which consume the output of the district are the commission markets in all the large cities of the Province and Montreal, local fruit dealers and the private customers of the individual growers." Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1901), 112, accessed from Brock University Library Archives & Special Collections June 26, 2023.

¹²¹ Pleasance Crawford, "BEADLE, DELOS WHITE," in *Dictionary of Canadian Biography*, vol. 13, University of Toronto/Université Laval, 2003–, accessed April 22, 2023.

¹²² The year they specify here is 1904. Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1921), 63, accessed from Brock University Library Archives & Special Collections June 26, 2023.

¹²³ They shipped 2,500 packages in 1910, and 5,000 in 1911. Fruit Growers' Association of Ontario, *Annual Report*, (Ottawa: Department of Agriculture, 1911), 40, accessed from Brock University Library Archives & Special Collections June 26, 2023.

¹²⁴ Albert E. Snow, *Fonthill 1920–1930: A glimpse of the glory years*, (1994), 58.

¹²⁵ Carmela Patrias, "More Menial Than Housemaids? Racialized and Gendered Labour in the Fruit and Vegetable Industry of Canada's Niagara Region, 1880–1945," *Labour (Halifax)* 78, no. 78 (2016): 77.

¹²⁶ Carmela Patrias, "More Menial Than Housemaids," 79.

¹²⁷ The number of temporary workers is not recorded in the 1900, 1910, or 1920 censuses.

¹²⁸ Statistics Canada, *Seventh Census of Canada, 1931, Ontario, Census of Agriculture*, 19.

¹²⁹ Author Albert E. Snow talks about his mother doing exactly this in *Fonthill 1920–1930: A glimpse of the glory years*, (1994), 4.

¹³⁰ Erin Daly, "Creating Connections with the Community through the Brock-Lincoln Living Lab." *The Brock News*, February 10, 2020, accessed October 23, 2023.

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