The Alberta Potato Industry

Growing Success in 2022

POTATO GROWERS OF ALBERTA

The Potato Growers of Alberta, on behalf of its 150 growers, undertook this economic impact study to showcase the diverse and growing strength of our industry and the opportunities for continued expansion. As we assessed the growth that our growers and collaborative processors and packers have undergone in recent years, the extent of expansion in seed potato, table potato, and processed potato products was more evident than we anticipated. The economic impact results and supporting industry information within this report indicate clearly that Alberta's potato industry is a major contributor to the economy and communities of Alberta and across Canada.

This study was completed by Serecon Inc, an Alberta-based firm specializing in the business of agriculture. The economic impact findings were completed with support from Nichols Applied Management and Statistics Canada. To support the study findings, a third-party review was conducted by Dr. Suren Kulshreshtha of the University of Saskatchewan. He has conveyed his written support for the economic impact methodology of this report.

The foundation of our industry's success is the collaboration between our growers, the processors, packers, and industry associates to leverage Alberta's competitive advantages to deliver products that the potato industry and consumers want. The collaboration and entrepreneurship of this industry has driven its expansion and we welcome further partners to come grow with us.

PGA gratefully acknowledges the Canadian Agricultural Partnership grant it received from Alberta Agriculture and Irrigation to cover a portion of the costs of the project.

Sincerely,

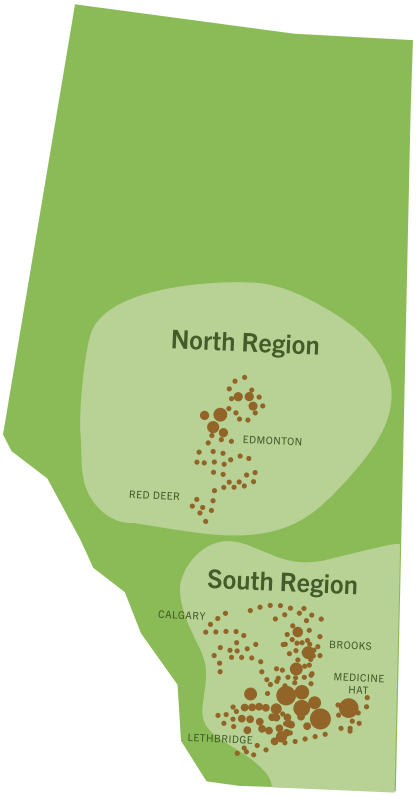
Terence Hochstein
Executive Director
Potato Growers of Alberta

Contents

Executive Summary

Alberta's potato industry is experiencing strong growth, with significant additional expansion underway. The industry's high, stable yields and available area for production expansion continue to drive investments by potato processors and packers serving the North American and International market.

Drawing from considerable recent growth in production and potato product sales, the industry in 2022 contributed $2.87B to the Canadian economy and $2.31B to the Alberta economy. These impacts include $662M in labour income and 9,390 FTE jobs across Canada, 7,380 of which are in Alberta.



$2.87B
TO CANADA'S TOTAL OUTPUT

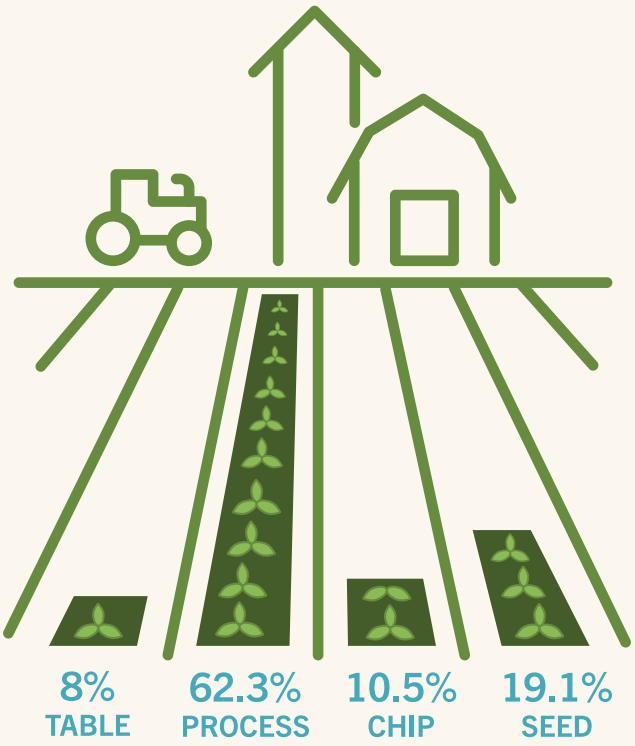
$1.33B
TO CANADIAN GDP

$662M
IN LABOUR INCOME

9,390
FULL-TIME JOBS IN CANADA

The potato industry in Alberta is highly diversified with strong seed potato, table potato, and processed potato product sales. Alberta's sales comprise 60% of Canada's net international seed potato exports, driven by northern-grown seed qualities, and grower's ability to reliably deliver quality products. Table potato acreage has grown by an average annual rate of 6.4%, driven in large part by success of creamer (baby) potato sales. Processing potato product sales, including french fries, hashbrowns, chips, perogies, and others are also undergoing surging growth driven largely by rising export opportunity to the US and Asia.

PORTION OF ACRES GROWN FOR EACH USE IN 2022



This growth has leveraged the competitive, stable, and entrepreneurial community of Albertan growers, who together work in close partnership with processors, packers, and customer farms across North America to ensure the delivered potatoes are of the highest quality. Continued growth will utilize these partnerships, and the broad suitable production areas to expand production and value-add activities across Alberta's potato industry. This growth brings significant economic benefits to Canadians, Albertans, and to potato product consumers in North America and around the globe.

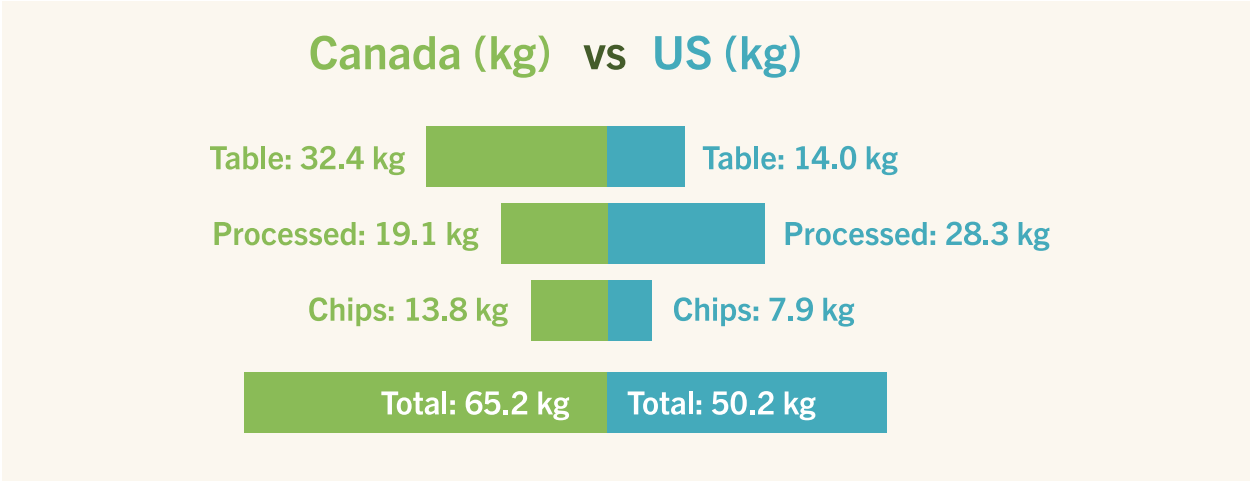
An added irrigated quarter of processing potatoes in Alberta results in $5.0M of total output and 16 full-time jobs generated in Canada

Alberta's Potato Industry

Potato Market in Canada and the US

Ever since potatoes were discovered in the South American Andes, they have provided an important source of nutrition for the peoples able to grow them. Potatoes were introduced to Alberta in the late 1800's as a market garden product and important food source. The industry has since developed into a modern commercial value chain that exports fresh and processed potato products across Canada, the United States, and increasingly to Asia.

POTATO CONSUMPTION: POTATO PRODUCTS ON A SCALE – ***fresh equivalent***

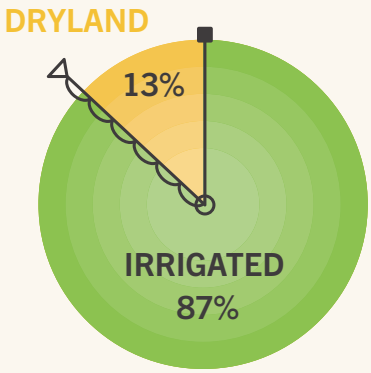


The Potato Industry is one of the few agricultural industries in Alberta that export value-added finished goods rather than raw product.

Canadian per capita consumption of potatoes is high with about half consumed fresh and the other half within various processed products. Potato consumption includes regular and creamer (baby) table potatoes, potato chips, french fries, hashbrowns, perogies, and other processed food products, all of which are produced within Alberta.

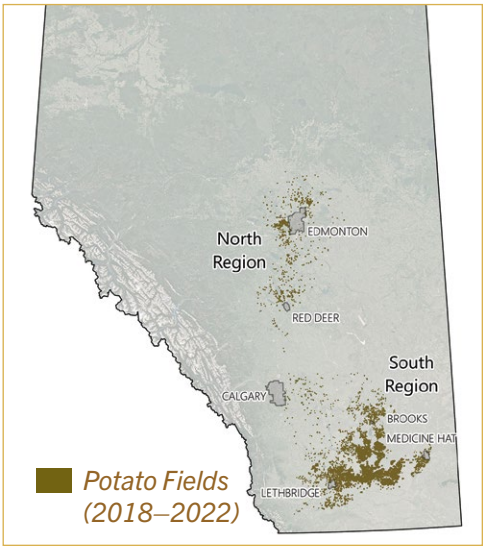
Potato Production in Alberta

Modern potato production uses high quality seed, precise application of water and fertilizer, and efficient, specialized machinery to produce and deliver potatoes to market. Alberta's example of this complex production system has been built on the hard work of previous generations. Many of these farmers developed their own specialized farming tools and implements, and ultimately relied upon their manual labour to get the potatoes on the plates of Canadians.



High, Stable Yields

Potato Production Regions of Alberta



Since those early efforts to develop from market garden to commercial production, the Alberta potato industry has continued to improve its productive efficiency and ultimately justify the development of significant potato product processing facilities. These processors are situated in the South Region to take advantage of the stable, high yields of irrigated potato crops. Approximately 87% of Alberta's potatoes are irrigated, primarily in the south, with the dryland (rainfed) acres being grown primarily for seed and table uses within the black soil zone north of Calgary. There is significant available, suitable land in both regions for potato production expansion.

Potatoes are grown commercially from tubers, or 'seed potatoes', which are primarily produced in the North Region. A yield advantage of as much as 30%[1] for potatoes produced from northern-grown seed potatoes drive strong demand. All potato varieties grown are not genetically modified, but are developed using proven cultivar selection and breeding techniques.

Northern Grown Seed Potato

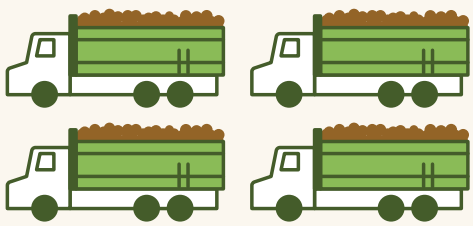
Advantageous Growing Conditions

LONG WINTERS

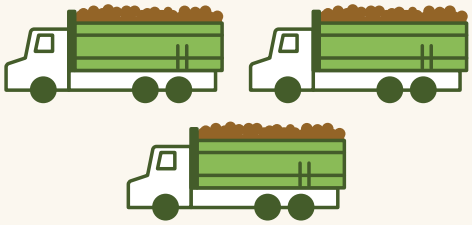
COOL SUMMER NIGHTS

LOW VIRUS LEVELS

In 2022, Alberta produced its largest potato crop ever with 26.8 million cwt (hundred weight) grown on 71,325 harvested acres. This record setting crop was achieved due to an expanding acreage and stable, high yield. Alberta's high average yield, 31% higher than the rest of Canada, is maintained by supplemental irrigation, high quality seed, and long crop rotations.



ALBERTA AVERAGE
386.5 cwt/acre

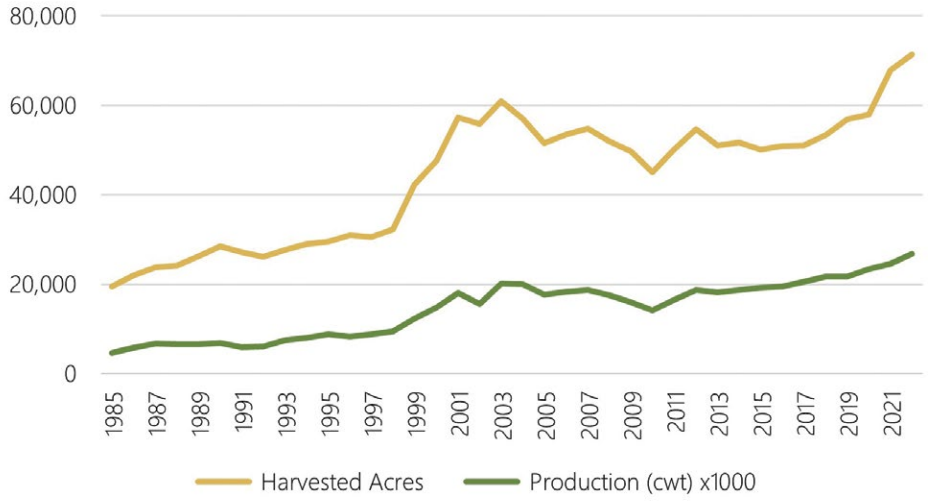


REST OF CANADA AVERAGE
295 cwt/acre

Alberta has a 31% GREATER 5-YEAR AVERAGE YIELD than the rest of Canada

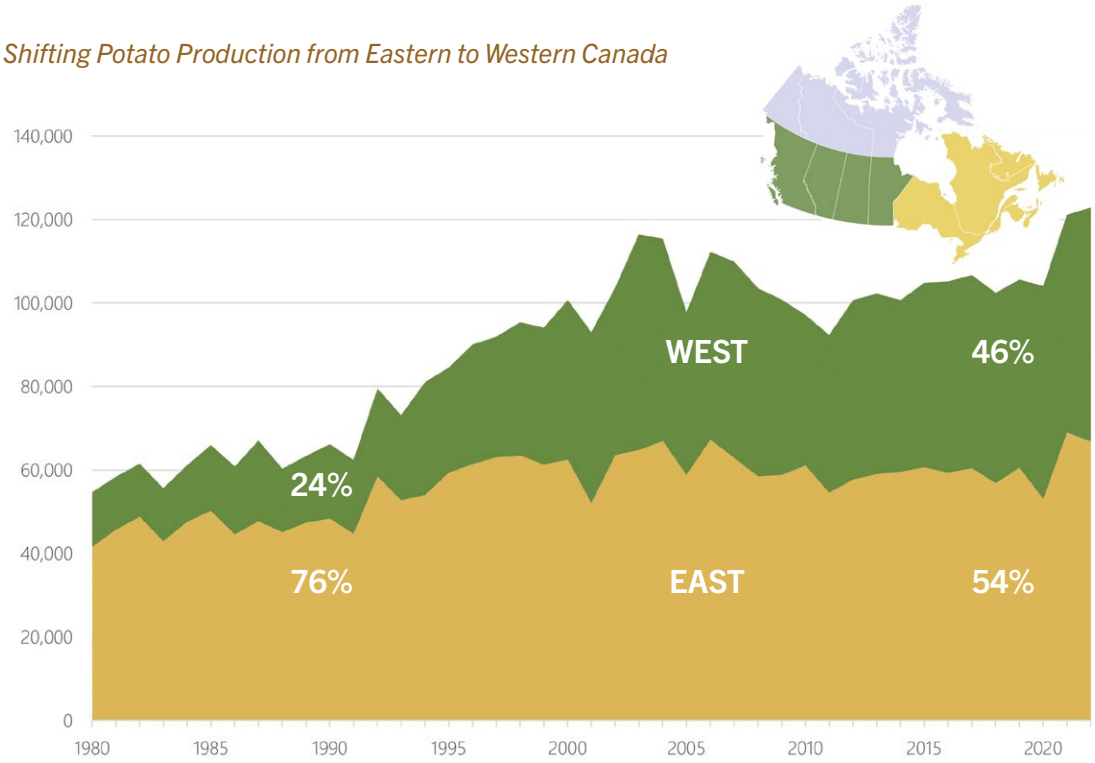
The large portion of Alberta appropriate for growing potatoes enables these sustainable 4 or 5-year crop rotations, which in turn reduce pest and disease pressure[2] while also maintaining soil health[3]. Growth of potato production while maintaining these rotations both in dryland and irrigated areas is also possible within Alberta's land base. This is most readily evidenced by the 2023 expansion announcement of the doubling in capacity of one of the province's largest potato processors[4].

Potato Production in Alberta (1985–2022)



Alberta's production growth has been joined by expansion in Manitoba to shift the national balance of potato production from the east to west of the country. In 2022 western Canada produced 46% of all potatoes on 42% of the acres harvested. Given expansion opportunities in the western prairies and acreage constraints in eastern provinces, this trend is likely to continue.

Shifting Potato Production from Eastern to Western Canada



Alberta's potato production is divided between sales of seed potatoes, table potatoes (for fresh consumption), and potatoes for processing. The largest portion of acres, about 73%, are grown for processing of frozen potato products and potato chips. These portions have been mostly stable since 2009, alongside an incremental increase in the portion of acres grown for fresh table potatoes.

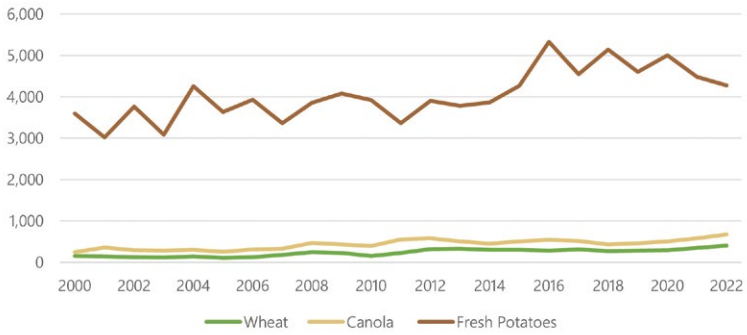
Potato Acreage by Intended Use

Chip acres were not distinguished from Process acres prior to 2009, though chip production also took place from 1998 to 2008

Potato Production Strengths in Alberta

Alberta's potato production has continued to expand due in large part to high, stable yields which bring reliable revenues to farmers and reliable supply to buyers and processors. The high level of production value drives significant economic activity within Alberta despite a much lower acreage than the major grains and oilseed crops[5].

Alberta Farm Cash Receipts per Acre, 2022$ (Statistics Canada)



This significant difference, facilitated in part by the irrigation opportunities in southern Alberta, is set to create strong growth in Alberta's economy through further expansion of potato acres. Planned expansion of irrigated potatoes is enabled by water conservation upgrades underway by irrigation districts. These upgrades make use of the same water allocation to, in one prominent instance, enable a planned increase of 80,000 acres, or a 15% expansion of a major potato producing irrigation district[6].

Government of Alberta announced in 2021 that it partnered with the Canada Infrastructure Bank (CIB) and 10 irrigation districts to invest a total of nearly $933 million in irrigation infrastructure to expand production through water efficiency.

Potato production has also expanded successfully in the province due to the strong entrepreneurial drive of its farmers. Potatoes Growers of Alberta represent about 150 family farms that are well positioned to successfully transition to upcoming generations. This is evident from the average Alberta potato farmer age of 48.0[7] which contrasts with the overall average Alberta farmer age of 56.5[8].

INTERGENERATION STABILITY OF ALBERTA'S POTATO FARMERS

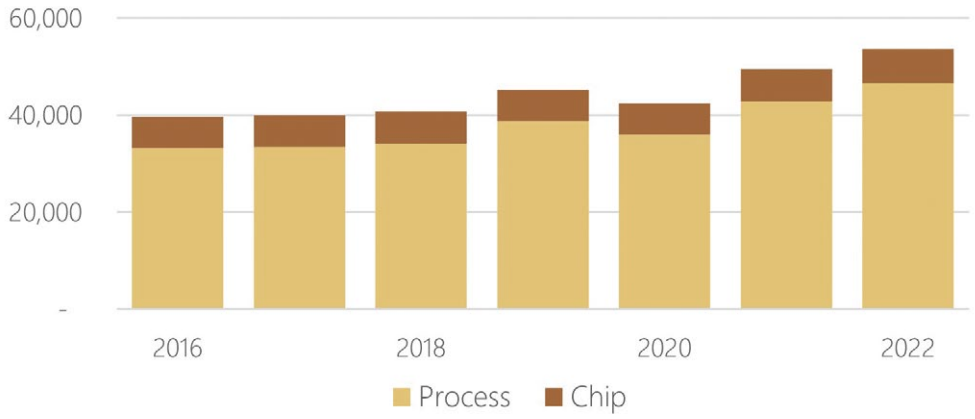
POTATO FARMERS
Average Age
48.0
YEARS OLD

ALBERTA FARMERS
Average Age
56.5
YEARS OLD

PROCESSING POTATOES

Processing potatoes are primarily grown in the south of Alberta to take advantage of irrigation and longer growing seasons. Processing potato production expands in close partnership with processors in response to market opportunities for potato chips, fries, hashbrowns, and other potato products. This value chain generates considerable jobs in farmers fields, processing facilities, and all the supporting input providers and industry partners.

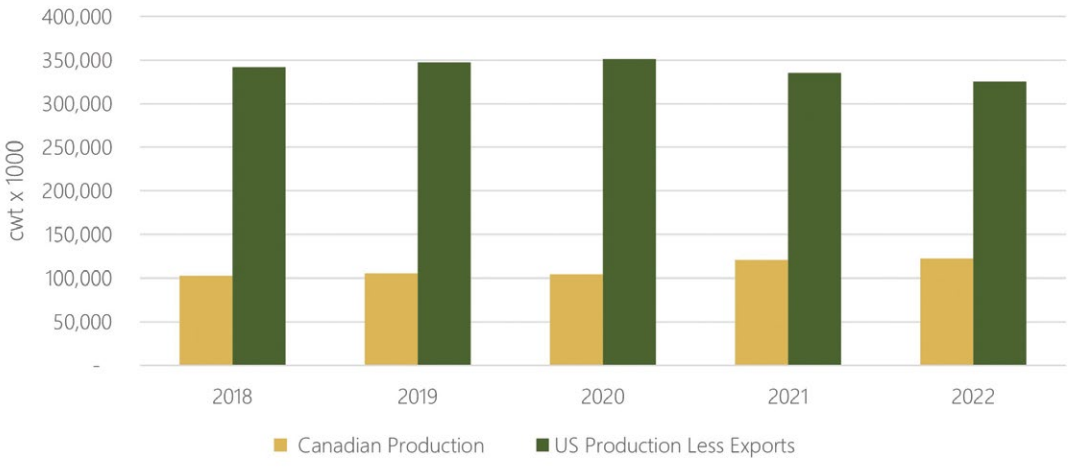
Processing Potato Acres in Alberta



Lamb Weston Inc.
McCain Foods Canada
Old Dutch Foods Ltd.
Cavendish Farms Corporation
PepsiCo Inc.
Shearer Foods

The potato packing and processing industry in Alberta includes facilities run by some of the largest such companies in North America. Expansion of processing capacity leverage market opportunities in the US and Asia. Increasing demand in Asia has increased direct exports and indirectly created additional opportunity in the US market. By drawing processing output from the US pacific northwest, the increased demand from Asia has in turn created a regional opportunity in the US for Alberta's processed potato products. This opportunity for exports to the US is demonstrated by the decreasing US production available for domestic consumption and the contrast of growing Canadian production to satisfy this demand.

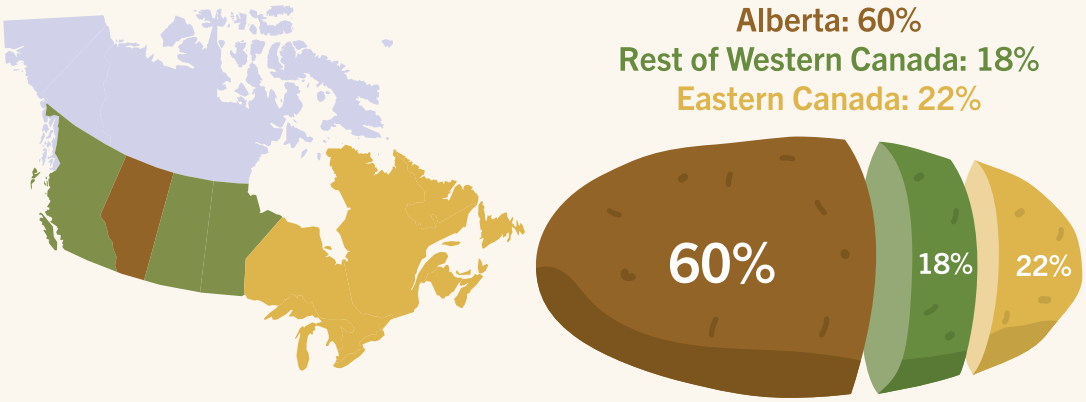
Canadian Potato Production Backfilling US Potato Availability



SEED POTATOES

Alberta's potato industry dominates Canadian international seed potato exports with **60% of the net exported value in 2022**, which considers the seed potato trade balance, or exports minus imports. To maintain low disease levels in seed for export customers and Alberta farmers, seed potatoes are grown under a limited generation system, whereby seed potatoes remain in a certification system for a maximum of 7 consecutive field-grown generations. Alberta growers are not in practice limited by this system, as they almost exclusively sell seed that is at most the 4th field-grown generation.

SHARE OF NET EXPORTED SEED POTATOES



Before seed potatoes are field grown, 'nuclear' tubers are grown in greenhouses from tissue samples cultured and grown as plantlets. Alberta has 14 such greenhouses that produce nuclear tubers for domestic propagation and export[9]. There are a total of 55 seed potato farms, or 37% of all the province's potato farms that are certified to propagate seed potatoes for their own use or for domestic and export sales. 85% of these seed potato farms exclusively produce seed potatoes, demonstrating the specialization of this critical part of the potato industry.

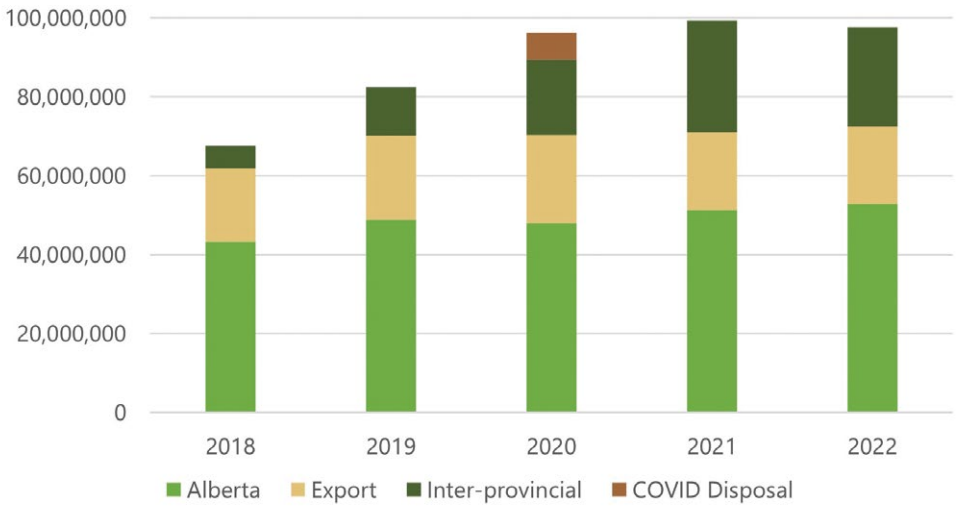
THRIVING SEED POTATO PRODUCTION

55
Licensed Seed Potato Farmers

+200
Varieties Grown

Approximately 54% of the province's seed potatoes are used by Alberta farmers, 26% is sold interprovincially, and the remaining 20% are exported to the US[10]. Transporting this large volume of potatoes by truck and over long distances is feasible because of the seed potatoes high value and Alberta's strong infrastructure.

Alberta's Seed Potato Sales by Destination (2022$)

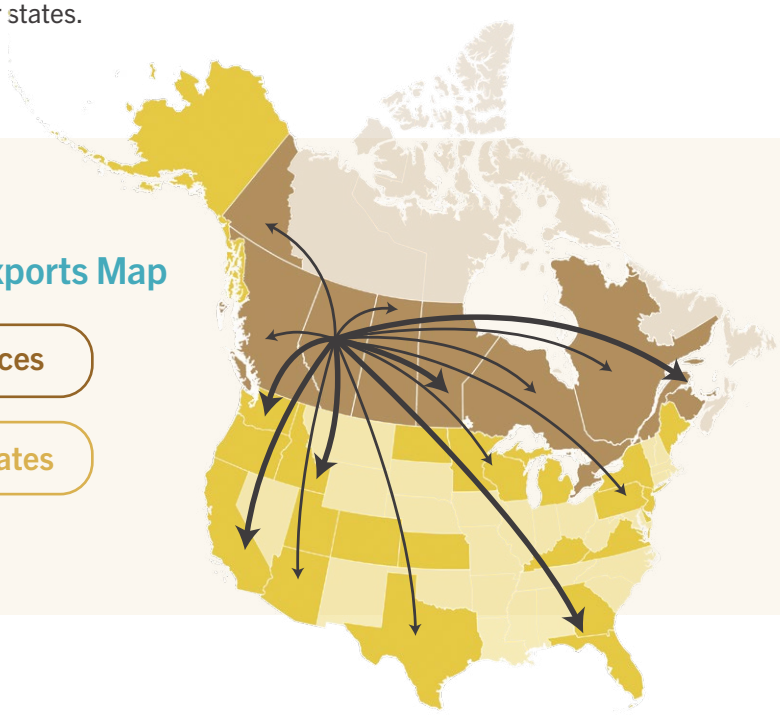


Exports of seed potatoes are broadly spread across the US while also a significant volume is supplied to the major potato producing states of Idaho and Washington. Strong growth in international exports has occurred by cultivating markets in many other states.

Seed Potato Exports Map

9 Provinces

24 US States



Alberta's Export of Seed Potatoes to Major US States, 2022$

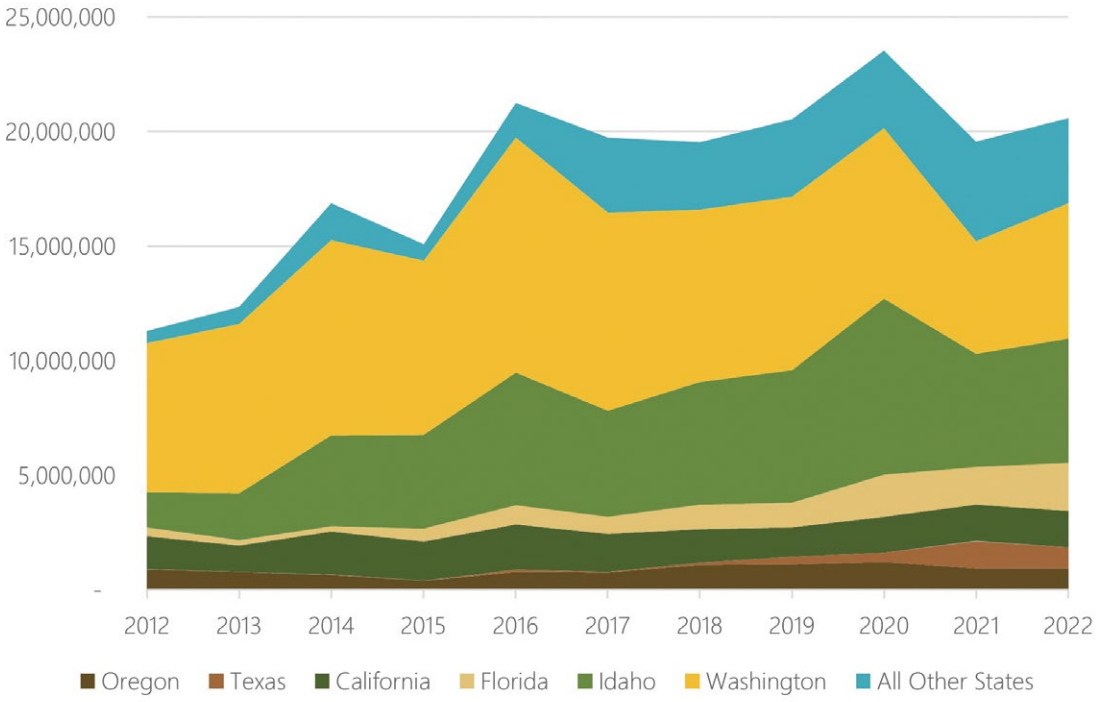
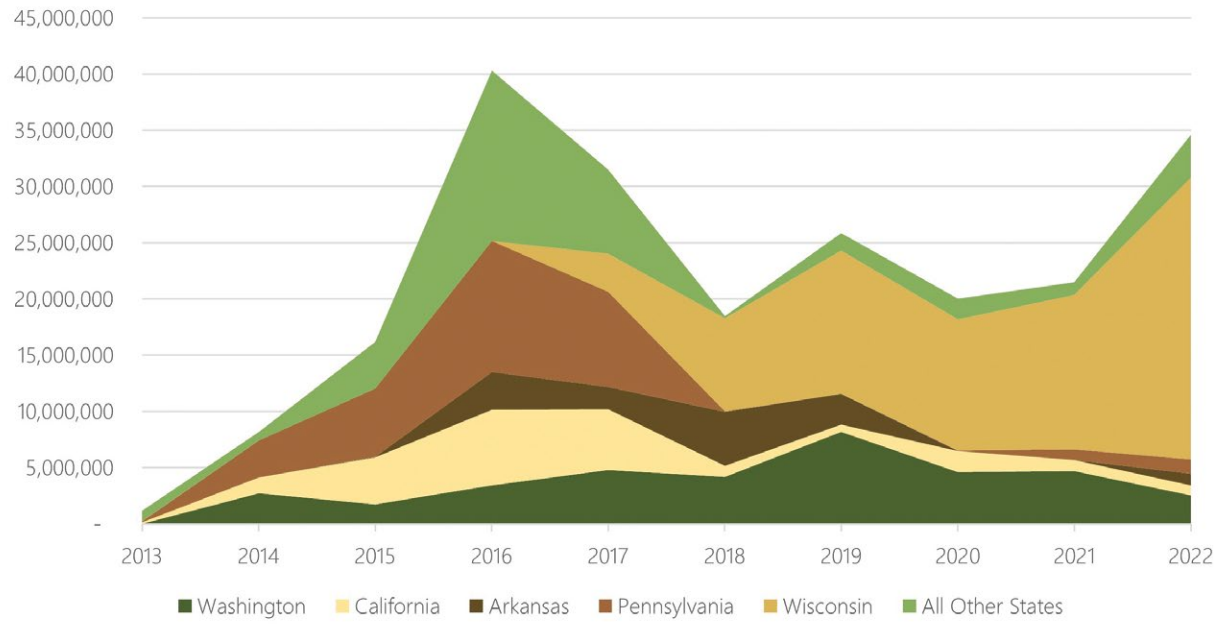
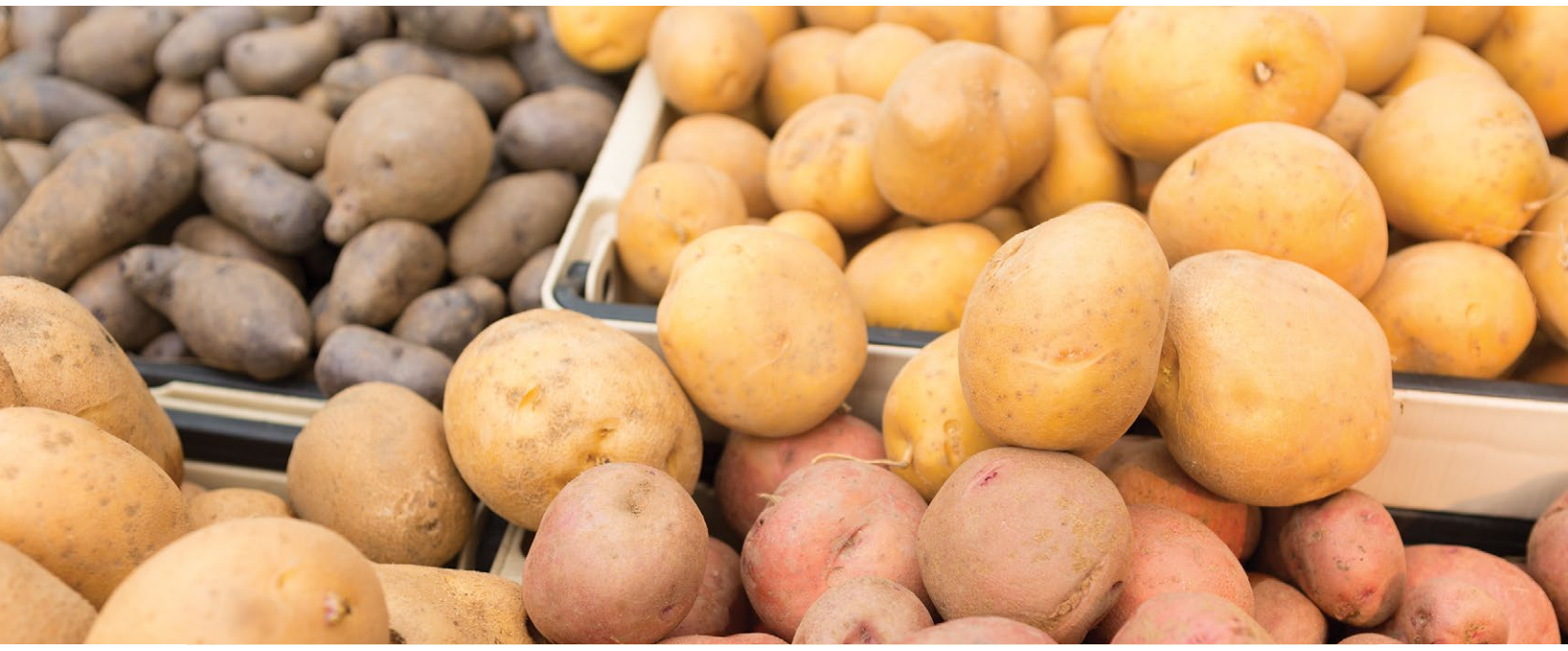


TABLE POTATOES

Potatoes that make their way to consumers in whole form are aptly named ‘table potatoes’. Prior to Alberta’s processing expansion at the turn of the century, table potatoes were a much more significant portion of the potato industry with nearly 20% of acres devoted to their production. After dipping to as little as 3% in 2006, table potato acres have steadily grown to make up about 8% of Alberta’s potato acres. This resurgence has taken place from steady growth in regular and creamer (Little Potato Company) potato sales to the Canadian and US markets.

Export Value of Alberta Table Potatoes by Major US State, 2022$



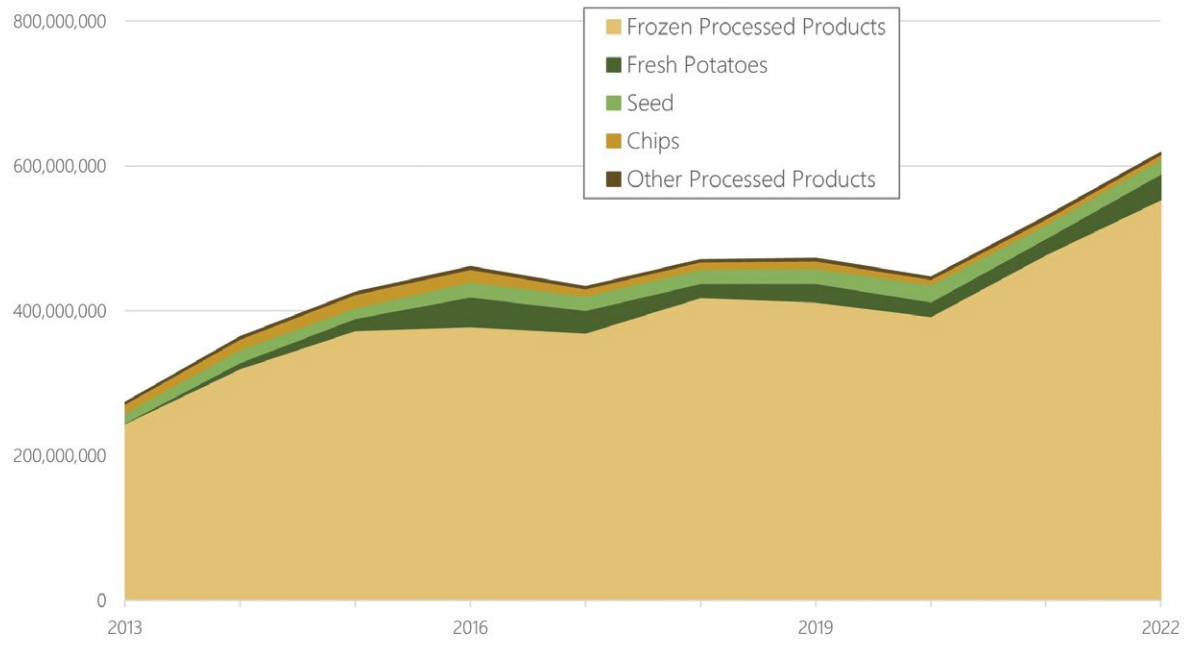


Alberta Potato Product Exports

Potatoes are grown for seed, table, or processing end uses. These three value streams interact through the production of seed potatoes intended as an input for table and process potato production. From each production stream, sales are divided between international exports, interprovincial exports, and Albertan consumption. International export values have recently grown for all three value streams due primarily to expanded production and processing, and in part due to rising real product prices.

When compared to export sales from other major potato producing Canadian provinces, Alberta has grown comparably with PEI and Manitoba. Canada's potato exports have grown in real terms by 95% in the last 10 years, while Alberta's have grown by 126%. Growth across the country has been supported by improved market opportunities in the US and growing demand from other international markets in Asia and Central America. Planned expansion in Alberta is based on growing demand in Asia, which Alberta is well positioned to meet.

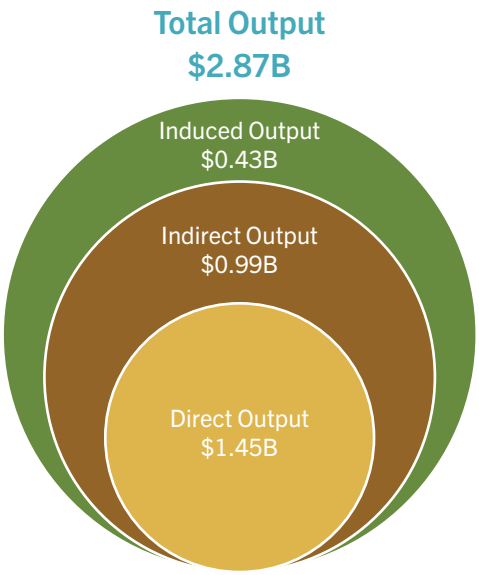
Alberta Potato Product Exports and Total Exports, 2022$



Alberta's potato product exports have more than doubled in a decade - growing 33% more than the national industry

Economic Impact of Alberta's Potato Industry

Alberta's potato industry is a significant driver of economic activity in the province and Canada. In 2022, the total economic activity, as measured by domestic and export sales of all potato products grown and produced in Alberta and their required inputs was $2.87 billion. $1.33 billion of Gross Domestic Product (GDP) was contributed to the national economy through the activities of the farmers, packers, processors, and all the corresponding supporting businesses. 9,390 full-time jobs are supported by the industry with a total labour income of $662 million. Each of these measures of economic activity are further described in the following sections.



Methodology

The potato industry supply chain involves a complex mix of businesses that jointly contribute towards final potato products. Each contributing component requires consideration when estimating the economic activity of the industry in Alberta. Measurement of these total impacts, or the economic impact analysis, is completed using an Input-Output Model of product and service flows within the Canadian economy. These product and service flows are used to capture all the required inputs, either domestically produced or imported, to produce an industry's final products.

The potato industry supply chain includes three product streams and the supporting businesses that provide inputs and services to the potato industry including those imported from the rest of Canada or internationally.

SEED POTATOES

Seed potatoes are grown for interprovincial and international export, both of which are considered final products by the Alberta potato industry. Seed potatoes are also grown as an input for table potatoes, processing potatoes, and for propagating seed potatoes themselves.

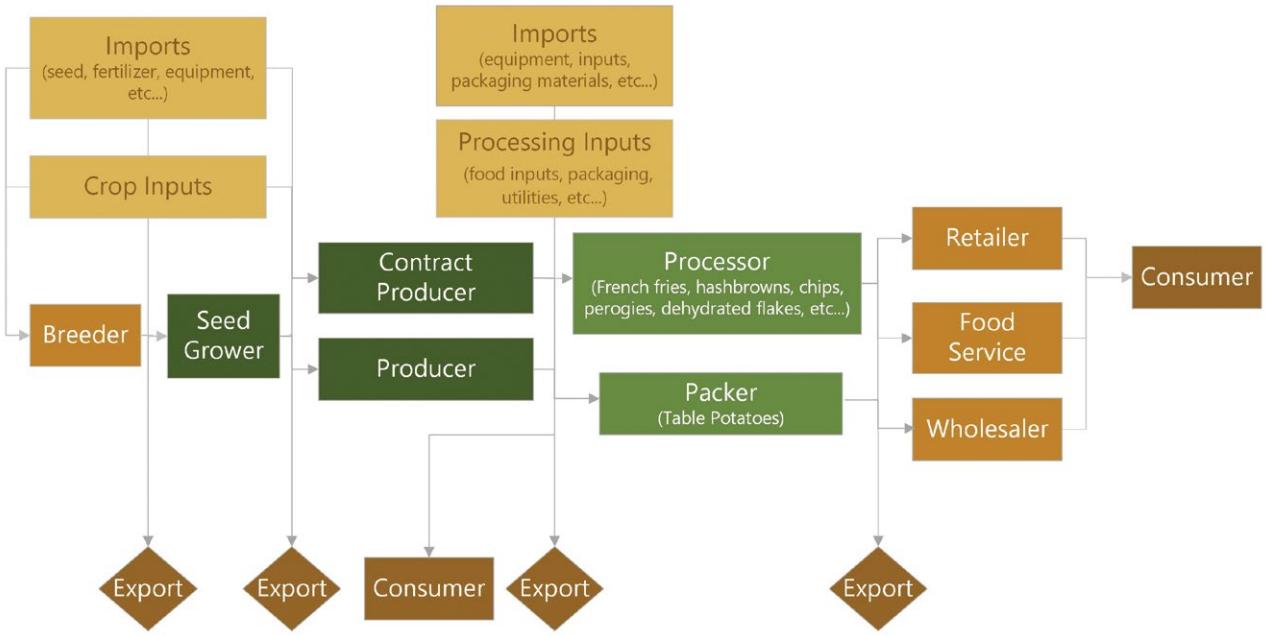
TABLE POTATOES

Table potatoes are grown for consumption within Alberta and for interprovincial and international export.

PROCESSING POTATOES

Processed potato products made almost exclusively from Alberta grown potatoes which are predominantly interprovincially and internationally exported, with a portion consumed within Alberta.

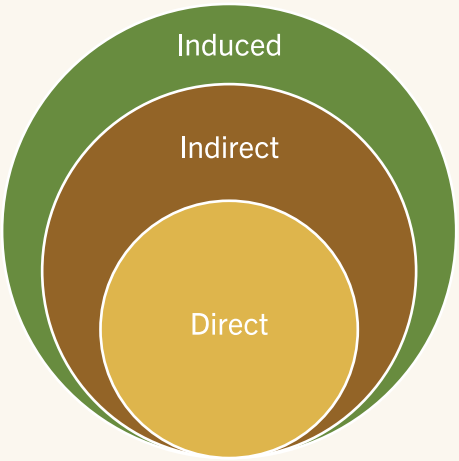
Alberta Potato Industry Supply Chain



ECONOMIC IMPACTS ARE CATEGORIZED INTO THREE COMPONENTS:

INDUCED IMPACTS

Impacts from spending the wages earned within the potato industry, and earned within the indirect suppliers to the industry, on household consumption



DIRECT IMPACTS

Economic activity generated by producing potato products

INDIRECT IMPACTS

Economic activity generated by suppliers of inputs and supporting businesses to the potato industry

The economic activities of the farmers, packers, processors, exporters, and retailers are taken as the direct impacts and include the sum of the industry's direct contribution to the economy. Economic activities by suppliers of inputs, such as fertilizer and fuel producers and wholesalers, equipment manufacturers and dealers, and utility providers all contribute to the indirect impacts of the potato industry. The activity resulting from the household spending of employees supported by the potato industry and supporting industry members represents the induced impact. The three types of impacts are represented in each of the measures of economic activity described below.

ECONOMIC IMPACTS

Economic activity is generally described by a series of indicators, including the total output, or sales, of the industry, the number of people employed, the value-added, and the tax contribution. There are differing uses for each metric, and so each is included within the economic impact summary for Alberta's potato industry.

TOTAL OUTPUT:	Sales of products as measured by the producers' price of the good or service of an input to or final product of the industry
GDP:	Contribution of value-added to a good or service
LABOUR INCOME:	Sum of labour income generated
EMPLOYMENT:	The number of total employed people, or the Full-time Equivalent (FTE) number of people employed. Labour income is a component of GDP
TAX REVENUE:	The total tax generated for the applicable levels of government. Tax revenue is a component of GDP

Economic Impacts of Alberta Potato Industry, 2022

Impact Metric*	Total Impact on Canadian Economy	Direct	Indirect	Induced	Total Impact on Alberta Economy
Total Output	**$2,872,000,000**	$1,415,000,000	$638,000,000	$258,000,000	$2,311,000,000
GDP	**$1,332,000,000**	$588,000,000	$310,000,000	$160,000,000	$1,058,000,000
Labour Income	**$662,000,000**	$281,000,000	$163,000,000	$66,000,000	$510,000,000
FTE Jobs	**9,390**	4,440	2,020	920	7,380
Total Jobs	**11,960**	5,620	2,570	1,250	9,440
Tax Revenue	**$87,000,000**	(Direct + Indirect) $33,000,000		$29,000,000	$62,000,000

** For a detailed breakdown of the direct, indirect, and induced impacts of each value stream refer to Appendix 2.*

ECONOMIC IMPACTS IN CONTEXT

Planned expansion of processing capacity and corresponding potato production will bring significant economic benefits to Canadians, and most significantly to Albertans. For every addition of an irrigated quarter section of potatoes for processing uses, $5M of total annual output in 2022$ is added to the Canadian economy. Within Alberta, this marginal expansion would result in $1.9M in additional GDP, of which about $900,000 can be attributed to wages across 13 full-time jobs.

Economic Impacts of additional irrigated pivot of processing potatoes, 2022

Impact Metric*	Total Impact on Canadian Economy	Total Impact on Alberta Economy
Total Output	**$5,000,000**	$4,100,000
GDP	**$2,300,000**	$1,900,000
Labour Income	**$1,100,000**	$900,000
FTE Jobs	**16**	13
Total Jobs	**21**	17

Economic impacts from potato production and value-add activities contribute significantly to the economy, and especially so when considering the relatively small acreage potatoes are produced upon. When compared to the GDP per agricultural acre of Canada's 2022 agri-food system, Alberta's potato industry contributes 19.5 times the GDP per acre[11]. This is due to the high agricultural productivity of potato production paired with a high level of value-add processing and packing within Alberta.

Conclusions

Alberta's potato industry is experiencing strong growth, with significant additional expansion underway. The industry's high, stable yields and available area for production expansion continue to drive additional investments by potato processors and packers serving the North American and International market.

High levels of agricultural productivity and paired value-add processing and packing lead to significant contribution to Alberta and Canada's economies. Planned growth will expand this impact with new jobs added throughout the industry's value chain.

> **The foundation of our growing success is the partnerships between growers, processors, packers, and industry partners. This spirit of collaboration drives opportunity today and tomorrow**

Endnotes

[1] *Wahab, M.N.J., 2012. Productivity of potato seed-tubers from different latitudes (Doctoral dissertation, University of Saskatchewan).*

[2] *Larney, F.J., Pearson, D.C., Blackshaw, R.E., Lupwayi, N.Z. and Lynch, D.R., 2016. Conservation management practices and rotations for irrigated processing potato in southern Alberta. American Journal of Potato Research, 93, pp.50-63.*

[3] *Li, L., Larney, F.J., Angers, D.A., Pearson, D.C. and Blackshaw, R.E., 2015. Surface soil quality attributes following 12 years of conventional and conservation management on irrigated rotations in southern Alberta. Soil Science Society of America Journal, 79(3), pp.930-942.*

[4] *McCains Foods. March 13, 2023. McCain Foods makes largest global investment in company history. https://www.mccain.com/information-centre/news/mccain-foods-coaldale/*

[5] *Canada Infrastructure Bank. November 2021. Investing in Irrigation, Farmers and Jobs. https://cib-bic.ca/en/medias/articles/investing-in-irrigation-farmers-and-jobs/*

[6] *Western Producer. December 2022. "Southern Alberta Irrigators Approve Expansion". https://www.producer.com/news/southern-alta-irrigators-approve-expansion/*

[7] *Potato Growers of Alberta. 2023 data of Alberta farm operators.*

[8] *Statistics Canada. 2021. Characteristics of farm operators: Age, sex and number of operators on the farm, Census of Agriculture, 2021. Table: 32-10-0381-01.*

[9] *Potato Growers of Alberta. Annual Report 2021-22.*

[10] *Potato Growers of Alberta. Personal Communication. May 14, 2023.*

[11] *Canada's 2021 agri-food value chain GDP contribution inflated to 2022 using the annualized Consumer Price Index change of 6.8% and applied to the total 2021 farm area of 153,687,771 acres. GDP figure sourced from: Government of Canada. Overview of Canada's agriculture and agri-food sector. https://agriculture.canada.ca/en/sector/overview Accessed June 21, 2023.*

[12] *Note that the fresh potato value stream includes both table potatoes and potatoes for processing end uses.*

Appendix 1. Detailed Economic Impact Methods and Findings

Overview

Economic activities at one stage of a supply chain drive upstream activities from suppliers of inputs and services. These various chains of economic activity are quantified using provincial and national product and service flow data aggregated by Statistics Canada. To estimate the economic impacts of the Alberta potato industry, custom simulations were performed by Statistics Canada using the Inter-Provincial Input Output (IO) Model to yield economic impacts according to value stream (i.e., seed, fresh[12], and processing potato products). Conceptually, an IO model allows an analyst to quantify the economic impacts of a particular activity as the spending associated with the activity ripples through the economy due to the interconnected nature of various sectors and markets. The model aims to capture the interdependencies between industries and with the final demand sector. Specifically, an IO model considers:

- the direct impact of spending on key inputs to produce a good/service;
- the indirect impact of business activity as suppliers expand their output to meet the needs of the direct industry; and,
- the induced impact of spending as the additional income paid to employees of the direct and indirect sectors is circulated through the economy.

Together, the direct, indirect, and induced impacts constitute the full economic impact of a project or activity at a provincial level and are expressed using the following metrics:

- Output sold into the economy.
- Value added to the economy, expressed in terms of Gross Domestic Product (GDP).
- Earnings, expressed in terms of labour income. Note that labour income is a subset of GDP; labour income and GDP are not additive.
- Employment, expressed in terms of total jobs and full-time equivalent (FTE) jobs. Note that 1 FTE is the equivalent of 1 person working full time for one year. For example, 1 FTE could represent 1 person working full time for 1 year or twelve people working full time for 1 month.
- Revenues to government (i.e., taxes).

An economy is a dynamic and complex system comprised of millions of different agents, all of whom are responding to a complex system of incentives and flows of information. As such, expressing the relationships between, and behaviours of, people and firms mathematically requires some simplifying assumptions. The following are key assumptions of IO models:

- Production functions are fixed and linear, which necessarily implies a constant return to scale in production;
- The supply of inputs is unconstrained, and the prices of inputs are fixed and not sensitive to the magnitude of the shock being analyzed;

- The IO model tacitly assumes that the economy-wide response to the expenditure being analyzed occurs instantaneously and does not evolve over time; and,
- All output decisions are demand driven.

These assumptions have implications with respect to the interpretation of IO model results. In situations where these assumptions are substantial departures from prevailing economic realities, IO analysis may over-estimate the impacts of a particular activity. For example, if a particular input, such as labour, is in very short supply and labour mobility is constrained, growth or development in one sector may place upwards pressure on wages and, in extreme situations, result in foregone economic activity in other sectors that cannot procure the necessary labour. The dynamic of shifting input combinations (e.g., competing industries using less labour in favour of capital) or shifting prices (e.g., paying more for labour and passing some of this cost on to consumers) is not captured in IO analysis.

Additionally, the degree to which direct activity gives rise to incremental changes in indirect or induced activity is subject to uncertainty as the assumed linearity between direct, indirect, and induced activity may not be an accurate characterization of prevailing economic conditions. For example, suppliers may be able to satisfy new demand by engaging underutilized capacity without hiring incremental new labour. In such a case, the IO model would over-estimate indirect impacts.

To appropriately capture the impacts across the Alberta potato industry, 2022 output data for each output level was collected. Specifically, domestic sales and exports for each of the three value streams were estimated.

IO Simulations

In total, six simulations were run to capture the entire economic impact of the Alberta potato industry. Specifically, the economic impacts of the following components of the value-chain were estimated:

- **Primary production** (i.e., fresh and seed potato production). A crop production function specific to potato production in Alberta was provided by the PGA and incorporated into the IO model by Statistics Canada. We note that there were insufficient data to estimate individual production functions for table, processing, and seed end-uses. As such, the same production function and economic multipliers were applied to all primary production activities.
- **Processing activities**. This included simulations for the two industry groups that utilize fresh potatoes as inputs.
    - Fruit and vegetable preserving and speciality food manufacturing (NAICS code BS311400) (includes frozen French fries).
    - Other food manufacturing (NAICS code BS311900) (includes potato chips, dehydrated potatoes, potato mixes).
    - Retail, wholesale, and transportation margins associated with:
    - Final household consumption.
    - Intermediate input uses by other industries.
    - Exports of potatoes and processed potato products.
- Together, these six simulations capture virtually all economic impacts associated with the Alberta potato industry both within Alberta and across Canada.

OUTPUT ESTIMATES

The domestic and international export output values for each value-stream were used to inform the final shock values used in the custom simulations. The output estimates for each value-stream were developed in collaboration with Statistics Canada. In total, the output of the Alberta potato industry in 2022 used to inform the final shock values was an estimated $1.1 billion.

Key data sources used to estimate the output values for each value-stream include:

- Data provided directly by the PGA (PGA 2023).
- The Government of Canada's Trade Data Online portal (Government of Canada 2023).
- The most recent Alberta Trade Flows Data from Statistics Canada (Statistics Canada 2022a).
- Statistics Canada's Consumer Price Index (Statistics Canada 2023).
- The 2019 Statistics Canada Supply and Use Tables (Statistics Canada 2022b).

FINAL SHOCKS

The output estimates described above informed the final shocks used by Statistics Canada In the IO simulations. Output estimated were adjusted to ensure there was no double-counting of impacts associated with seed inputs for potato production or potato inputs for processing activities, as well as no double counting of margins.

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PERSONAL COMMUNICATION

- Potato Growers of Alberta (PGA) 2023
- Alberta Seed Potato Data: 2021 Crop Shipped and Planted 2022.


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