Guide to the Census of Agriculture, 2021

Census of Agriculture, 2021

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Guide to the Census of Agriculture, 2021

About this guide

This reference guide may be useful to both new and experienced users who wish to familiarize themselves with and find specific information about the 2021 Census of Agriculture.

It provides an overview of the Census of Agriculture communications, content determination, collection, processing, data quality evaluation and dissemination activities. It also summarizes the key changes to the 2021 census and other useful information.

List of abbreviations used in this guide

Abbreviation	Definition
AESD	Agri-environmental spatial data
CAR	Census agricultural region
CATI	Computer-assisted telephone interview
CCS	Census consolidated subdivision
CD	Census division
CMP	Collection Management Portal
CPS	Census Processing System
CV	Coefficient of variation
FEFU	Failed edit follow-up
IBSP	Integrated Business Statistics Program
LAOS	Large Agricultural Operations Statistics
NHS	National Household Survey
NRFU	Non-response follow-up
RTA	Random tabular adjustment

Chapter 1 – General information on the Census of Agriculture

Introduction

A picture of Canada would be incomplete without current information about agriculture, which plays an important role in the Canadian economy and landscape. Agriculture data have been collected in Canada since the first census in 1666, and a more modern version of the Census of Agriculture has been conducted every five years since 1956, together with the Census of Population. A comprehensive list of historical highlights regarding the collection of agricultural information via the census is available in the Census of Agriculture evolution and innovation section at the end of this chapter.

Every five years, the Census of Agriculture provides a comprehensive and integrated profile of the physical, economic, social and environmental aspects of Canada's agriculture industry; it is the only data source that consistently provides high-quality detailed statistical information on agriculture for small geographic areas. It collects a wide range of data at the national, provincial and subprovincial levels, such as the number of farms and farm operators, farm area, farm size, farm type, land use, crop areas, land management practices, livestock inventories, business operating arrangements, farm operating revenues, farm operating expenses, farm capital, and farm machinery.

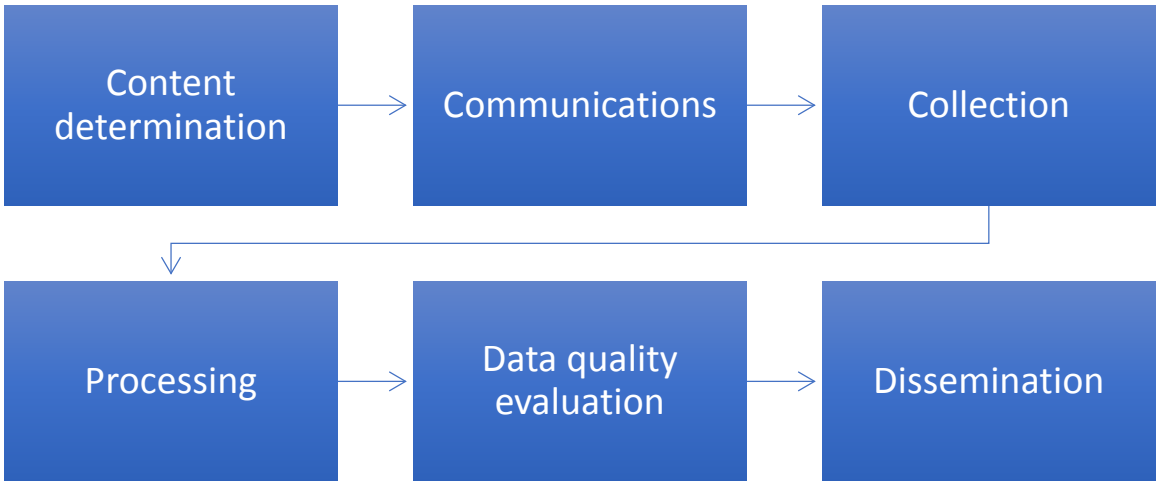
The Census of Agriculture not only provides a snapshot in time of the agriculture industry, but is also essential for understanding changes over time, thus serving as a basis for informed public and private decision making.

Census of Agriculture data are used by:

	**Farm operators** to formulate production, marketing and investment decisions.
	**Agricultural producer groups** to inform their members about industry trends and developments, to put the viewpoint of operators before legislators and the Canadian public, and to defend their interests in international trade negotiations.
	**Governments** to make policy decisions concerning agricultural credit, crop insurance, farm support, transportation, market services and international trade.
	**Statistics Canada** as quinquennial benchmarks and to help determine the sample frame for agricultural surveys to provide Canadians with annual estimates between censuses for the agriculture sector.
	**Businesses** to market products and services and to make production and investment decisions.
	**Academics** to conduct research on the agriculture sector.
	**The media** to portray the agriculture sector to the broader Canadian public.

The Census of Agriculture cycle

The Census of Agriculture cycle can be divided into six broad projects: content determination, communications, collection, processing, data quality evaluation and dissemination.



Details for each component of the Census of Agriculture cycle will be provided in the next chapters of this guide.

Why does Statistics Canada conduct the Census of Agriculture?

Statistics Canada is required by law to conduct a Census of Agriculture.

According to Section 20 of the *Statistics Act*, Statistics Canada is required to conduct a Census of Agriculture every five years, in the years ending in 1 and 6:

> A census of agriculture of Canada shall be taken by Statistics Canada
>
> (a) in the year 1971 and in every tenth year thereafter; and
>
> (b) in the year 1976 and in every tenth year thereafter, unless the Governor in Council otherwise directs in respect of any such year.

Just as Statistics Canada is required by law to conduct a census, respondents are required by law to complete their census questionnaires. For more information about the mandatory legal requirement to complete the Census of Agriculture questionnaire, refer to Appendix 1.

Why is the Census of Agriculture conducted in May?

By working with the Census of Population, the Census of Agriculture is afforded an opportunity to save taxpayers' dollars by leveraging the resources and infrastructure of the Census of Population's collection, printing, communications and contract management. This ensures increased exposure to associated communication activities for a wider audience, resulting in a higher response rate and increased coverage to minimize the cost of running the Census of Agriculture and managing standalone infrastructure systems.

The timing of the larger Census of Population is driven by the need to maximize the number of Canadians who are home during enumeration and allows enough time to conduct follow-up activities before the summer holiday period. This permits collection procedures to run smoothly, reducing costs.

Although the Census of Agriculture and the Census of Population are conducted at the same time, they do have separate questionnaires. Most of the development, testing, processing, data validation and preparation for data dissemination for the Census of Agriculture and the Census of Population are handled by different groups within Statistics Canada. However, sharing the data collection and communications activities between both censuses streamlines procedures and reduces costs considerably. Another important benefit is that information from the two questionnaires can be linked to create the Agriculture–Population Linkage Database. For more information on the agriculture–population linkage, refer to the Dissemination chapter.

Census Day provides a specific point of reference for respondents to base their answers on. For the 2021 Census, the reference date was set to May 11, 2021.

Key changes to the 2021 Census of Agriculture

Every census introduces new techniques and methodologies, with the goal to provide better service to data users, lower the burden on census respondents and manage costs. The 2021 Census of Agriculture introduced several changes as part of its modernization agenda, setting the stage for further innovations.

The key changes to the 2021 Census of Agriculture include a new conceptual definition of a "farm" or an "agricultural holding," the increased use of data integration, a new data processing environment, a new disclosure avoidance method and the release of quality indicators for published estimates.

A new conceptual definition of a "farm" or an "agricultural holding"

A significant conceptual change to the main statistical unit used by Statistics Canada's Agriculture Statistics Program has been introduced for the 2021 Census of Agriculture: a "farm" or an "agricultural holding" (i.e., the

census farm) now refers to a unit that produces agricultural products and reports revenues or expenses for tax purposes to the Canada Revenue Agency. Before 2021, a "farm" was defined as an agricultural operation that produced at least one agricultural product intended for sale.

The migration to a new "farm" concept was in response to Statistics Canada's modernization initiative and the transformation of the Agriculture Statistics Program. It depends on reliable, measurable, national, trans-industry signals from the Canada Revenue Agency to define and maintain the agriculture frame. A single "farm" definition across all agriculture statistics programs at Statistics Canada allows for better data comparability and interpretability across programs. The new definition removed the ambiguity in the interpretation of a farm and focuses on business-driven operations.

The application of the new "farm" concept will affect the comparability of farm counts with previous censuses.

New "farm" concept

The new "farm" concept of the Census of Agriculture refers to a unit that produces agricultural products and reports revenues or expenses for tax purposes to the Canada Revenue Agency.

- **Agricultural products include the following:**
  - crops: grains, oilseeds, leguminous crops, potatoes, vegetables, fruits, berries, greenhouse products, mushrooms, sod, nursery products, Christmas trees, maple tree taps, hay and fodder crops, cannabis, hemp, and other crops
  - livestock: dairy and beef cattle (including feedlots), pigs, poultry and eggs (including hatcheries), turkeys, ducks, geese, sheep, goats, horses and other equines, bison (buffalo), elk (wapiti), deer, llamas and alpacas, rabbits, mink, bees, and other animals.
- **Not included are** forestry and logging, hunting and trapping, fishing and aquaculture, support activities for agriculture and post-harvest activities, horse boarding and riding lessons, and operations making products that are not for human consumption (e.g., genetic operations, insect farms for pet food).

Increased use of data integration

To enhance the information from the 2021 Census of Agriculture and to minimize respondent burden, Statistics Canada combined census data with information from other surveys or from administrative sources, where possible. For example, tax data from the Canada Revenue Agency were used to eliminate the need to ask respondents questions about the operating arrangement, revenues and expenses. Also, the age and sex of each farm operator were obtained from the Census of Population. Operators on the Census of Agriculture for whom no link was found had their information imputed with that of another Census of Population person with similar characteristics.

With the use of the new processing environment, the Census of Agriculture concepts and variables for greenhouse content were standardized with those of the Annual Greenhouse, Sod and Nursery Survey, allowing for more direct confrontation, while setting the stage for possible data replacement in the future.

A new data processing environment

The 2021 Census of Agriculture migrated to the Integrated Business Statistics Program (IBSP) to process and integrate its data. The IBSP framework uses corporate, standard, modern, automated processes and methods to integrate, edit, impute and estimate data. Most of the Agriculture Division's Agriculture Statistics Program and the rest of Statistics Canada's business statistics programs have already migrated to the IBSP platform, which allows for data integration within and across programs. For example, the 2021 Census of Agriculture integrated data from the Agriculture Division's Agriculture Taxation Data Program for revenues and expenses via the IBSP.

The IBSP uses standard concepts for common content, leading to better coherence and interpretability. It also allows for more effective use of administrative data to reduce respondent burden, and can be used to create data quality indicators, enabling data users to better use the data.

For more details on Census of Agriculture data processing, refer to the Processing chapter.

A new disclosure avoidance method

Statistics Canada is required by law to protect the confidentiality of respondents. A data disclosure avoidance method is therefore required to protect the confidentiality of respondents' answers in published data.

In past censuses, the disclosure avoidance method used was based on a system that suppressed "sensitive" cells and their complements in data tables. While necessary, this method often led to the suppression of a large number of data points and significantly reduced the amount of available data, in particular for certain types of data and lower geographic levels. In the 2016 Census of Agriculture, about one-third of individual non-zero estimates—excluding farm-count estimates—were suppressed and thus unavailable to data users. Data were either considered publishable or not by the disclosure control method.

As part of Statistics Canada's user-centric focus to make more granular data available, the 2021 Census of Agriculture is introducing a new disclosure control method called random tabular adjustment. Instead of suppressing cells in which there is a risk of divulging an individual respondent's data, this system intelligently changes the estimate in the cell to protect the respondent's data, allowing an estimate for virtually all cells to be released.

The implementation of the new disclosure avoidance method will affect the comparability of estimates with previous censuses.

For more details on disclosure avoidance methods used by the Census of Agriculture to protect the confidentiality of respondents, refer to the Dissemination chapter.

Quality indicators for published estimates

For the first time, the Census of Agriculture will provide quality indicators for most estimates to be published in its main data release, providing users with a means to assess the accuracy of estimates.

For more details on quality indicators, refer to the Dissemination chapter.

Census concepts

The following concepts are often used in Census of Agriculture publications:

age
census family
census farm
economic family
educational attainment
ethnic or cultural origin
farm capital
farm headquarters rule
farm operator
farm population
farm type
gender
household
immigrant status
labour force
major source of income
marital status
mother tongue
net farm income
occupation
place of birth
population centre
religion
rural area
sex at birth
total income

Source: Dictionary, Census of Population, 2021.

Census of Agriculture evolution and innovation

Below is a comprehensive list of historical highlights regarding the collection of agricultural information via the census.

1666—The first Canadian census was taken in New France by Intendant Jean Talon. Information was obtained on age, sex, marital status, professions, trade and locality. In addition, the census gathered information about livestock and property under cultivation.

1666 to 1867—Numerous censuses were taken at irregular intervals in the colonies of France and Britain that became parts of Canada.

1867—The *Constitution Act*, 1867 (formerly the *British North America Act)* included the requirement that a census be taken every 10 years (decennially) to determine representation by population in the new Parliament.

1871—The first decennial census was taken in this year. The census enumerated the population of the four original provinces (Nova Scotia, New Brunswick, Quebec and Ontario). Manitoba and British Columbia, which had also joined Confederation, were surveyed separately.

1881—All census enumerators were required to take an oath of secrecy, a pledge still required today. The census was extended to include British Columbia, Manitoba and Prince Edward Island.

1891—The population was prepared for census enumerators' visits through newspaper announcements and from pulpits.

1896—Rapid expansion in Western Canada at the turn of the previous century made a more frequent census necessary. A mid-decade census was held in Manitoba beginning in 1896.

1905—The census office became a permanent bureau of the federal government.

1906—The Prairie provinces of Manitoba, Alberta and Saskatchewan began to take a separate census of population and agriculture every five years to monitor the growth of the West.

1912—Responsibility for conducting the census was transferred from the Department of Agriculture to the Department of Trade and Commerce.

1918—The Dominion Bureau of Statistics was created.

1921—A "farm" was defined as a holding of one acre or more that produced crops of any kind valued at $50 or more in the year before the census. In previous censuses, the minimum area was not clearly defined.

1931—Though compilation and tabulation for the 1931 Census were still carried out with mechanical equipment, a new sorter-tabulator developed by an employee of the Dominion Bureau of Statistics made production 50 times faster by allowing a whole data card to be read at once rather than one column at a time.

The "farm" definition was expanded to a holding of one acre or more that produced agricultural products valued at $50 or more in the year before the census, or that was under crops of any kind or used for pasturing in the census year.

1941—Sample information was collected for the first time. One in 10 households were asked additional content about their dwelling (type, number of rooms, cooking fuel used, etc.).

1951—Canada's first census as a nation of 10 provinces and 2 territories.

The “farm” was redefined as a holding on which agricultural operations were carried out and that was (a) three acres or more in size, or (b) from one to three acres in size, with agricultural production in the year before the census valued at $250 or more.

The census used “mark-sense” technology based on punch cards, greatly reducing processing time and costs.

1956—Rapid economic growth and development created the need for both national demographic and agricultural information at more frequent intervals. Starting in 1956, the Census of Population and Census of Agriculture were held in all provinces across the country, replacing the mid-decade censuses of the Prairie provinces. That year, the two censuses started a long tradition of being conducted concurrently.

1961—The “farm” was redefined as a farm, ranch or other agricultural holding of one acre or more with sales of agricultural products of $50 or more during the 12-month period before Census Day.

The farm type classification used by the Census of Agriculture was aligned to the Standard Industrial Classification for the first time.

1971—Under the *Statistics Act* of 1971, the Dominion Bureau of Statistics was renamed Statistics Canada. The act also confirmed that a Census of Population and a Census of Agriculture would be taken every five years. Conducting the Census of Agriculture and the Census of Population at the same time allowed for information from the two censuses to be linked, and the first Census of Agriculture’s Agriculture–Population Linkage Database was created in 1971. This unique database continues to the present, providing users with information pertaining to the social characteristics of the farm population (i.e., farm operators and their families).

Self-enumeration was first introduced in 1971. With only a few exceptions, census questionnaires and completion instructions were dropped off at private homes, and respondents were asked to complete their own questionnaires. In population centres of 10,000 people or more, respondents were asked to mail their completed questionnaires back in a pre-addressed envelope. In other areas, questionnaires were picked up by census enumerators.

1976—A reduced Census of Agriculture with a four-page questionnaire was conducted in 1976.

A “census farm” was defined as a farm, ranch or other agricultural holding of one acre or more with sales of agricultural products of $1,200 or more during the year 1975. This concept differs from the “farm” concept used in previous censuses. The basic unit for which a questionnaire was collected was termed “agricultural holding” in 1976, which was equivalent to the 1971 “farm” concept.

1979—Statistics Canada established a remote sensing program, to use satellite imagery to derive crop area estimates and look for alternative methods to improve the survey estimates, lower respondent burden and better plan sampling methods.

1981—The “census farm” was redefined as a farm, ranch or other agricultural holding (feedlots, greenhouses, nurseries, institutional farms, mushroom houses and fur farms) with sales of agricultural products of $250 or more during the 12 months before the census, or agricultural holdings with anticipated sales of $250 or more.

1986—The Census of Agriculture was to be fully cancelled because of budget cuts; trade groups, academics and other government departments rallied to oppose the decision. After lengthy discussions, negotiations and analyses, the Census of Agriculture program was reinstated.

1991—The questionnaire was changed so that respondents could report more than one operator per farm. This change recognized the contribution of farm women and other farm family members to Canadian agriculture.

The “census farm” was redefined as an agricultural holding that produced at least one agricultural product intended for sale. The definition did not include a minimum sales condition, as in previous censuses.

1996—The Census of Agriculture digitally scanned all the questionnaires, a first for Statistics Canada. This meant that census processing operations and authorized analysts had instant access to questionnaire images showing individual responses, under strict security and privacy measures.

The "census farm" definition was expanded to include commercial poultry hatcheries and operations that produced only Christmas trees. This expanded definition resulted in the inclusion of 138 commercial poultry hatcheries and 1,593 operations across Canada that produced only Christmas trees.

2001—The intelligent character recognition technology was introduced as a new data capture system. Questionnaires were scanned and "read" by a computer rather than being manually captured by data-entry operators.

The farm type classification used by the Census of Agriculture was aligned to the North American Industry Classification System (NAICS) for the first time.

2006—For the first time, selected Canadians were offered the option to answer the Census of Agriculture questionnaire online as part of a proof of concept.

Respondents no longer returned their completed Census of Agriculture paper questionnaires to an enumerator, but sent them directly to a secure central data processing facility for editing and follow-up.

2011—In another first for Statistics Canada, all the Census of Agriculture paper questionnaires were sent to respondents by mail and included a secure access code as an option for respondents to complete the questionnaire online. Also, all respondent follow-up tasks were carried out remotely (i.e., via mail or telephone), for the first time.

A question requesting the Canada Revenue Agency's Business Number for the agricultural operation was added.

Information previously collected by the mandatory long-form census questionnaire was collected as part of the new voluntary National Household Survey (NHS). Data from this survey replaced the long-form data previously used to produce the Census of Agriculture's Agriculture–Population Linkage Database, containing information on the socioeconomic characteristics of the farm population.

2016—Canada Post delivered an invitation letter to fill out a Census of Agriculture questionnaire on the Internet to addresses determined from Statistics Canada's Business Register, populated from the previous census and other agriculture surveys.

In November 2015, the government reinstated the long-form census questionnaire, replacing the NHS, and the Census of Agriculture's Agriculture–Population Linkage Database went back to the traditional data sources it used before 2011.

2021—The "census farm" was redefined as a unit that produces agricultural products and reports revenues or expenses for tax purposes to the Canada Revenue Agency. This new definition is applied uniformly throughout Canada's provinces and territories.

To reduce the response burden on Canadian farmers, information on operating arrangements, revenues and expenses was retrieved from administrative sources.

Impact of COVID-19

Statistics Canada was faced with the unprecedented challenge of conducting the census during a pandemic. COVID-19 arrived in Canada in early 2020, and the pandemic required the agency to make significant adjustments to its census activities.

Statistics Canada employees across the regions adapted to new virtual work requirements, as established by the Government of Canada, ensuring the safety of Census of Agriculture data and employees.

As a result of the COVID-19 pandemic, virtual outreach and engagement with agricultural stakeholders was even more important this census cycle, with meetings conducted online exclusively. Also, the attendance of Census of Agriculture staff to farm shows had to be cancelled.

Security, privacy and confidentiality

Statistics Canada is bound by law to protect the identity of individuals at every step of the statistical process, including in all published data. Statistics Canada will never release identifiers such as names, addresses or email addresses, either alone or in combination with any other information from the census questionnaire. These identifiers will never be given or sold to any individual or organization, or added to any mailing list.

All information provided is securely held and used for statistical purposes only.

Chapter 2 – Communications

Introduction

Above everything else, the success of the Census of Agriculture communications campaign rests upon the continued assistance, cooperation and goodwill of key agricultural stakeholders and, especially, farmers. A program that touches every Canadian and every Canadian farm operator requires an effective communications campaign. This campaign informs, engages and calls to action its population—specifically, its goal is to make every Canadian farm operator aware of the Census of Agriculture, when it takes place, that it is mandatory, that privacy issues will be respected and that all information collected is confidential.

The Census Communications Team handles communications tasks for both the Census of Agriculture and the Census of Population. Communications is an area where the two census programs are closely integrated, with activities coordinated together for better efficiency in terms of reach and cost. The Census of Agriculture benefits from communications activities targeted at farm operators, and from the concurrent Census of Population communication activities that reach the Canadian population at large.

The focus of this section is the Census of Agriculture communications campaign; further details of the overarching communications campaign for the Census of Population can be found in the *Guide to the Census of Population, 2021* reference product.

Key activities

The Census Communications Team provided communications support activities that were targeted, agile, creative and cost-effective, while maintaining a positive, non-partisan corporate image of Statistics Canada.

Census communications materials focused on

- increasing awareness of the 2021 Census
- promoting self-response through online collection
- increasing self-response rates by encouraging farm operators to complete and return their census questionnaire in May 2021.

Communications activities for the 2021 Census of Agriculture took place leading up to and throughout the entire collection process, building awareness of when and how to complete the census, informing Canadian farm operators about the benefits of completing the 2021 Census questionnaire, and encouraging them to complete their questionnaire and complete it online. The main activities of the 2021 Census Communications Program included outreach, public and media relations, social media, respondent relations, and census website management.

2021 Census website

The 2021 Census website, which was available to the public from March 11, 2019, to November 17, 2021, provided a centralized platform for testing, for posting census jobs, for respondents to complete their questionnaires online, and for sharing information about 2021 Census dissemination products and other important information on topics such as data privacy and security.

Census of Agriculture online portal

A new Census of Agriculture online portal was launched on May 11, 2021, based on consultations with stakeholders and data users. The portal serves as a singular gateway providing easy access to Census of Agriculture data, analysis, reference materials, infographics, interactive data visualization tools, important announcements and more.

Social media

Statistics Canada continued to leverage its official social media accounts to increase access to its high-quality statistical information. Social media (e.g., Facebook, LinkedIn, Twitter, Instagram, blogs) was also used to foster engagement, cooperation and information-sharing with the public during all phases of the census, especially during collection.

Respondent relations

The Respondent Relations team was responsible for answering public, corporate and ministerial enquiries related to the 2021 Census. In addition to responding to written requests received by mail and email, Respondent Relations also supported internal stakeholders—Statistics Canada's "Contact Us" team (Infostats), regional outreach teams, follow-up operations, social media, media relations, the Office of the Chief Statistician and the Census Help Line—with their census-related questions and operational needs. Additionally, Respondent Relations helped respondents by sending secure access codes, submitting requests for paper questionnaires and updating respondent statuses on behalf of the Census Help Line.

Outreach, public relations and events

Stakeholder groups and organizations play a significant and important role in promoting the Census of Agriculture. Outreach activities engage key stakeholders at the community level and support partnerships to engage their communities' populations. Over 400 agricultural associations were contacted for outreach between the late fall of 2020 and early spring of 2021. Communications staff contacted these associations by email and telephone.

As mentioned before, outreach and engagement with agricultural stakeholders were conducted exclusively online this census cycle because of the COVID-19 pandemic. For example, the Census of Agriculture campaign continued to benefit from the ongoing virtual collaboration with Agriculture and Agri-Food Canada, the other members of the Federal-Provincial-Territorial Committee on Agriculture Statistics (including representatives from the departments of agriculture of provincial and territorial governments), and industry associations. Also, attendance to farm shows and exhibitions by Census of Agriculture staff to engage with farm operators directly had to be cancelled in 2020 and 2021.

Toolkits

The Census of Agriculture used two toolkits to promote and increase awareness of the 2021 Census of Agriculture: the Community Supporter Toolkit and the Census Teacher's Kit.

Community Supporter Toolkit—This toolkit, available through the census website from August 10, 2020, to September 24, 2021, targeted governments, farmers' associations, agricultural businesses and other agriculture-related organizations to increase awareness of the benefits of completing the census questionnaire. Supporting organizations were asked to use or distribute census materials when contacting their clients, include census banners on their websites, follow Statistics Canada on social media, and send internal messages to their members and employees.

The toolkit included

- short articles to promote the benefits of the Census of Agriculture
- industry articles by farm sector highlighting the data and findings of the last census
- an official Census of Agriculture web banner and poster
- social media messages.

Census Teacher's Kit—This toolkit**,** published on August 10, 2020, was developed for use in elementary, intermediate and secondary classes across the country. The kit's Food, feed and function activity was used in schools to promote and increase awareness of the 2021 Census of Agriculture and agricultural production in Canada.

Advertising

Advertising campaigns during the collection period boosted awareness and the call to action for the general public and farm operators. Both the Census of Agriculture and the Census of Population benefited from the campaign's messages to complete the online questionnaires

- early in collection: "Complete your questionnaire as soon as possible online";
- later in collection: "It's not too late to complete your questionnaire online."

Chapter 3 – Content determination

Introduction

Content refers primarily to the questions included in the Census of Agriculture questionnaire (Form 6). The process of determining the content of the Census of Agriculture for each census cycle involves user consultations, content testing and content approval by Cabinet.

For the 2021 Census of Agriculture, the main priorities of the project were to

- remain relevant and respond to the information needs of agricultural operators, farm organizations, governments, other data users and Canadians
- reduce response burden on farm operators
- improve cost-effectiveness.

Although the questionnaire is updated every census to reflect users' changing requirements as identified through the submission process, certain questions—such as those on farm operators, land area, livestock numbers and crop areas—can appear on every census, as they are considered essential by Statistics Canada and other major users of Census of Agriculture data. Repeating key questions allows the census to measure change over time, while adding new questions and dropping others allows for the census to adapt to changes in the agricultural sector (e.g., the adoption of new technologies or farming practices).

For more information about the content consultation and content determination processes of the 2021 Census of Agriculture, refer to the *Content Consultation Report*.

User consultations

Feedback from data users was requested to inform content development for the 2021 Census of Agriculture. There were two ways for data users to provide feedback throughout the consultation process:

1. by attending a 2021 Census of Agriculture consultation workshop (in person or online)
2. by submitting a 2021 Census of Agriculture submission form.

In 2017, a series of workshops were held across Canada with users such as federal departments and provincial ministries, agricultural associations, academics, and agriculture service providers.

The purpose of these workshops was to

- engage with data users
- obtain feedback on 2016 Census of Agriculture content, to identify content gaps and potential changes to be made in 2021
- gain a better understanding of the needs of data users and receive justification for keeping non-essential questions in the 2021 Census of Agriculture.

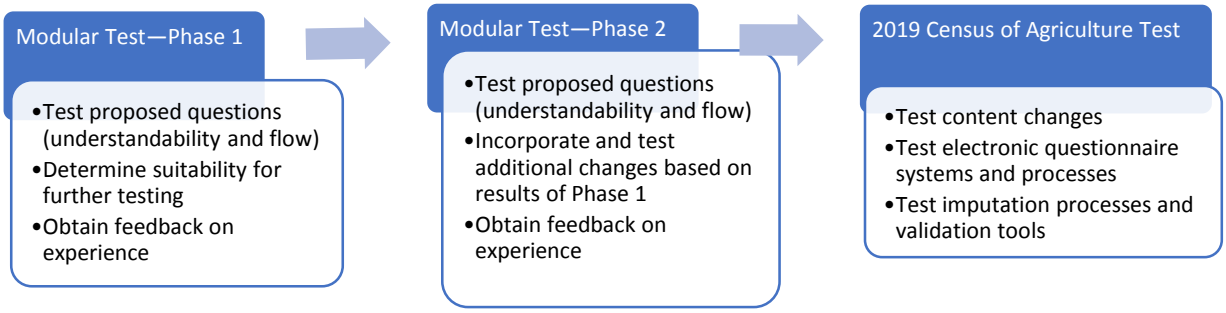
Users submitted recommendations for the content they would like to see on the 2021 Census questionnaire, which were then used by the Census of Agriculture to develop the content and design of the census questionnaire.

Submissions from consultations were evaluated on these key elements:

- relevance to the agricultural sector
- comparability over time
- national interest
- level of geography required
- question comprehension by farmers and ease of availability of information to answer those questions
- farmer willingness to respond
- demand for data
- type of questions (e.g., yes or no tick boxes vs. value reporting)
- availability of other data sources
- collection frequency.

Content testing

The testing process for the 2021 Census of Agriculture included two phases of qualitative modular testing and a national census test (2019 Census of Agriculture Test):



After each of these tests, the prospective 2021 content underwent rigorous analysis to determine its suitability for subsequent testing. The findings from these analyses enabled Census of Agriculture analysts to make informed decisions regarding the final content of the 2021 Census of Agriculture.

Statistics Canada's Questionnaire Design Resource Centre conducted two phases of qualitative modular testing with farm operators in 2018. Several proposed questions for the 2021 Census of Agriculture were asked to

- test the cognitive process of respondents when answering questions (e.g., their understanding of concepts, terminology and response categories)
- test respondents' ability and willingness to answer the questions
- test the functionality and usability of some questions on the online questionnaire
- test the flow of questions with respondents
- obtain feedback from respondents on their overall experience of responding using an online version of the questionnaire.

The modular testing was conducted on a one-on-one basis with farm operators. Participants were recruited from a list of agricultural operators in proximity to the selected test locations. Locations that were selected for recent survey testing were avoided, but test locations with a sufficient number of diversified farms were selected. A Statistics Canada employee recruited operators of farms of various sizes, types and operating arrangements, and with specific attributes that needed to be tested (e.g., farms with a succession plan or renewable energy). Both French and English versions of the questionnaire were tested.

Feedback from modular testing was integrated into the online questionnaire in preparation for the voluntary 2019 Census of Agriculture Test, which was conducted between May 6 and June 28, 2019. A sample of 10,000 agricultural operations was selected from across Canada. The sample was targeted to include specific language profiles and farm characteristics. Participation in the census test was voluntary, and the response rate was 38.6%.

The purpose of the 2019 Census of Agriculture Test was to test content changes and all online questionnaire systems and processes through to estimation and validation. Testing priorities were determined based on the extent of content changes made from the previous census questionnaire. One change focused on data replacement, where selected steps on the questionnaire were replaced by administrative data, with the goal to reduce response burden by removing questions from the questionnaire. The test allowed analysts to evaluate the effectiveness of the replacement more thoroughly.

After data collection was complete, the content was validated to ensure that it was properly understood and reported and that the online questionnaire functionality was operating as expected. Each step within the online questionnaire underwent rigorous analysis to confirm that the data collected through the online questionnaire were valid. Based on these analyses and the results from prior testing, decisions were made on whether content should be kept on the questionnaire in its current state, modified or removed.

Questionnaire development

The majority of the 2021 questions remained unchanged compared with 2016 to maintain consistency and comparability of data over time. Other questions have been added or deleted to reflect changes in the agriculture industry. For example:

- **Agricultural production (filter questions)**—This is a new step, consisting of yes or no questions that identify the commodities being produced on the respondent's operation. It was added to the beginning of the questionnaire to simplify responding and reduce the time needed to complete the census.
- **Business information**—A new step was added on the main activity of the operation.
- **Emerging agricultural products**—These emerging categories included, for example, hemp, haskaps, kale and ducks.
- **Greenhouse products**—Subcategories were added for greenhouse fruits and vegetables (greenhouse tomatoes, greenhouse cucumbers, greenhouse peppers, greenhouse herbs, and other greenhouse fruits and vegetables); cut flowers and potted plants were split up into two subcategories. Examples were added of other products grown in a greenhouse.
- **Mushrooms**—The mushroom questions were expanded to request separate areas for Agaricus and specialty mushrooms.
- **Machinery—**Two new categories for tractors were added to account for the increased use of more powerful tractors on farms.
- **Technologies—**Some categories were removed and new ones were added to reflect technological evolution and technology adoption by farms.
- **Renewable energy producing systems—**A definition for renewable energy was added. A question was added asking for the intended use of renewable energy produced on the operation (for use on the operation or for sale).
- **Direct sales—**Direct sales categories were expanded, as well as the methods of direct selling, to include off-site farm stores or stands, direct deliveries to consumers, and community-supported agriculture and food baskets. A new question was added on the percentage of gross farm receipts from the sale of agricultural products directly to consumers for human consumption.
- **Succession planning—**The succession planning question was expanded to include whether a written succession plan that is not in place has been discussed or not.

Other changes made to the 2021 Census of Agriculture questionnaire to help reduce response burden and allow for a better experience when filling out the questionnaire include the following:

- Questions were reworded to improve understanding and make them easier to answer. Questions were also reformulated into an interrogative structure rather than an imperative one.
- Filter questions and other time-saving features were added.
- Selected Census of Agriculture data were replaced using high-quality administrative data sources (e.g., Canada Revenue Agency data to replace operating arrangement, revenues and expenses, and Census of Population data to replace age and sex of farm operators).
- The questionnaire was optimized for respondents to efficiently fill it out online.
- The questionnaire was organized in modules to facilitate the identification of relevant sections of the questionnaire for every respective respondent.
- Keywords that were previously capitalized for emphasis were bolded and put in lower case.
- "Total" questions previously worded in a manner that explicitly instructed respondents how to calculate the answer given values provided to previous questions (e.g., "TOTAL of questions 10 to 14") now incorporate a contextual description of the components of the given "total" (e.g., the total land question reads: "Total land area owned, leased, rented, crop-shared or used"). In the online questionnaire, totals are also automatically summed for respondents.

For a detailed explanation of all changes made to the 2021 questionnaire, refer to the *2021 Census of Agriculture in detail* report.

Content approval

Once the Census of Agriculture questionnaire content has been finalized internally based on testing, it must receive approval from Cabinet. To do so, a Memorandum to Cabinet is submitted to the Minister of Industry to approve the content and seek approval through an order of the Governor in Council to prescribe the questions for the Census of Agriculture. The Ministerial Recommendation is the key component of the Memorandum to Cabinet. It sets out the issue to be discussed, the minister's recommended course of action and any funding requirements, the rationale for proceeding, alternative options that could be pursued, and the considerations and risks to be taken into account. The Memorandum to Cabinet also includes sections on the estimated costs, results and delivery strategy, engagement and communications strategy, parliamentary strategy, and intergovernmental strategy, as well as findings of mandatory assessments, including Gender-Based Analysis Plus, a strategic environmental assessment, official language considerations and an Assessment of Modern Treaty Implications.

Before the Memorandum to Cabinet is submitted, Statistics Canada consults with central agencies to ensure the proposed Census of Agriculture content is aligned with the government's overall agenda, and to identify any policy, fiscal and implementation issues that should be addressed before the document is submitted. Central agencies include the Privy Council Office, Finance Canada and the Treasury Board Secretariat. In addition to meeting with the central agencies, Statistics Canada also consults with Agriculture and Agri-Food Canada regarding the Census of Agriculture. This interdepartmental meeting ensures coordination across portfolios is pursued. Following Cabinet approval, an order in council is submitted on recommendation of the minister to the Governor General in Council, who officially prescribes the questions in the Census of Agriculture questionnaire. The order in council and the final questionnaire are then made public through publishing in the *Canada Gazette*, the official newspaper of the Government of Canada.

Chapter 4 – Collection

Introduction

During the data collection phase, the objective was to maximize the number of responses for agricultural operations in Canada. Collection processes included preparing the list frame, delivering invitation letters, determining whether targeted operations were in scope and conducting interviews with non-respondents.

Collection is an area where the Census of Agriculture and the Census of Population programs are closely integrated. Collection processes and activities were coordinated with the Census of Population for efficiencies of scale to reduce the cost of the program. Most of the significant cost savings were centred around collection and the communications campaign that supported it. This also meant that the Census of Agriculture needed to adopt the same collection period and Census Day as the Census of Population.

The Census of Agriculture main collection window lasted at least from May 3 to August 29, 2021; this lengthy window recognized that the early part of collection coincided with the busy seeding season for many farm operators across Canada.

New in the 2021 Census of Agriculture was the use of comparable administrative data to replace parts of collection. In an effort to reduce respondent burden, timely administrative data were used in place of asking respondents, if available and usable. For example, operating arrangements and operating revenues and expenses were secured from tax data from the Canada Revenue Agency, and operator data such as age and sex were procured from the Census of Population.

Scoping

In 2021, a farm (or census farm) was defined as a unit that produces agricultural products and reports revenues or expenses for tax purposes to the Canada Revenue Agency.

With Canada Revenue Agency data and other information sources, all businesses from Statistics Canada's Business Register that were thought to meet the new farm definition conditions were selected to be part of the Census of Agriculture population.

To confirm that the business met the new definition of the agricultural population, for the first time in the Census of Agriculture's history, respondents completing the 2021 questionnaire were presented with two screener questions to determine whether their operation was in scope or not. If in scope, respondents were to continue completing their questionnaire. If not, the reasons why their operation was no longer in business or involved in agriculture were sought.

Development of the Census of Agriculture frame

The Census of Agriculture is a critical source in the creation of the frame for the Agriculture Statistics Program of the Agriculture Division at Statistics Canada. The target population for the Census of Agriculture is all farms operating in Canada.

The Census of Agriculture frame was created by combining information from Statistics Canada's Business Register with information from the latest set of tax remittances and selecting the set of units that met the conditions of the new farm definition. The selection process used the detailed tax information of the establishments on the

Business Register to select those that have reported agricultural commodity revenues or expenses, signalling that they were involved in agricultural activities. To ensure complete coverage, some establishments with weaker or no agricultural activity signals from tax data were identified using other available sources of information and were included in the frame.

In addition, a subset of records was added to the frame to account for operations that entered business since January 1, 2020, and for which no tax signals could be recorded because of the timing of tax filing. These modelled births and steps taken to ensure the accuracy of the frame (or reduce over- or undercoverage) are outlined in the Data accuracy section (chapter 6). A full coverage evaluation is completed for each census and will be made available to the public via the Census of Agriculture portal with the May 11, 2022, data release.

Collection vehicles

The promotion of the online questionnaire by Statistics Canada and its adoption by respondents have been increasing steadily since it was first introduced as a limited proof-of-concept option in 2006.

The push to adopt the Internet as the primary mode of collection started in 2016 and was amplified in 2021, with an "online questionnaire first" approach, where paper questionnaires were sent to most respondents only on demand. This strategy resulted in reduced response burden, data quality gains and cost savings. The Internet reporting rate surpassed expectations, increasing from 11% in 2011, to 55% in 2016, and to 82% in 2021, at the Canada level.

Table 1
Census of Agriculture Internet response rates, Canada

	Expected Internet response rate	Actual Internet response rate
Year	percent	
2006	No target	5
2011	10	11
2016	30	55
2021	70	82

The Census of Agriculture uses a common form for all operations across Canada and respondents need to answer only the questions that relate to their operation. Using one form nationwide ensures consistency across Canada, while tick boxes and different sections for specific types of operations allow operators to answer only those questions pertinent to their type of operation. A single form also keeps development costs down. Every effort is made to keep the questionnaire as concise as possible to minimize respondent burden.

The prioritization of the "online questionnaire first" approach meant that in 2021 a failed edit follow-up (FEFU) operation to resolve missing, incomplete, inconsistent or invalid responses was not required. Removing FEFU further reduced burden on respondents.

Census collection wave approach

Statistics Canada implemented a wave approach for the 2021 Census of Agriculture, which consisted of reminding Canadian farm operators to fill out their questionnaire by various contact methods at specific times throughout the collection period. It also encouraged respondents to complete their questionnaire online, while also offering other response options, such as ordering a paper questionnaire, to support a full response rate. These reminders were supported by a Census of Agriculture-specific communications campaign and by the overriding Census of Population communications campaign.

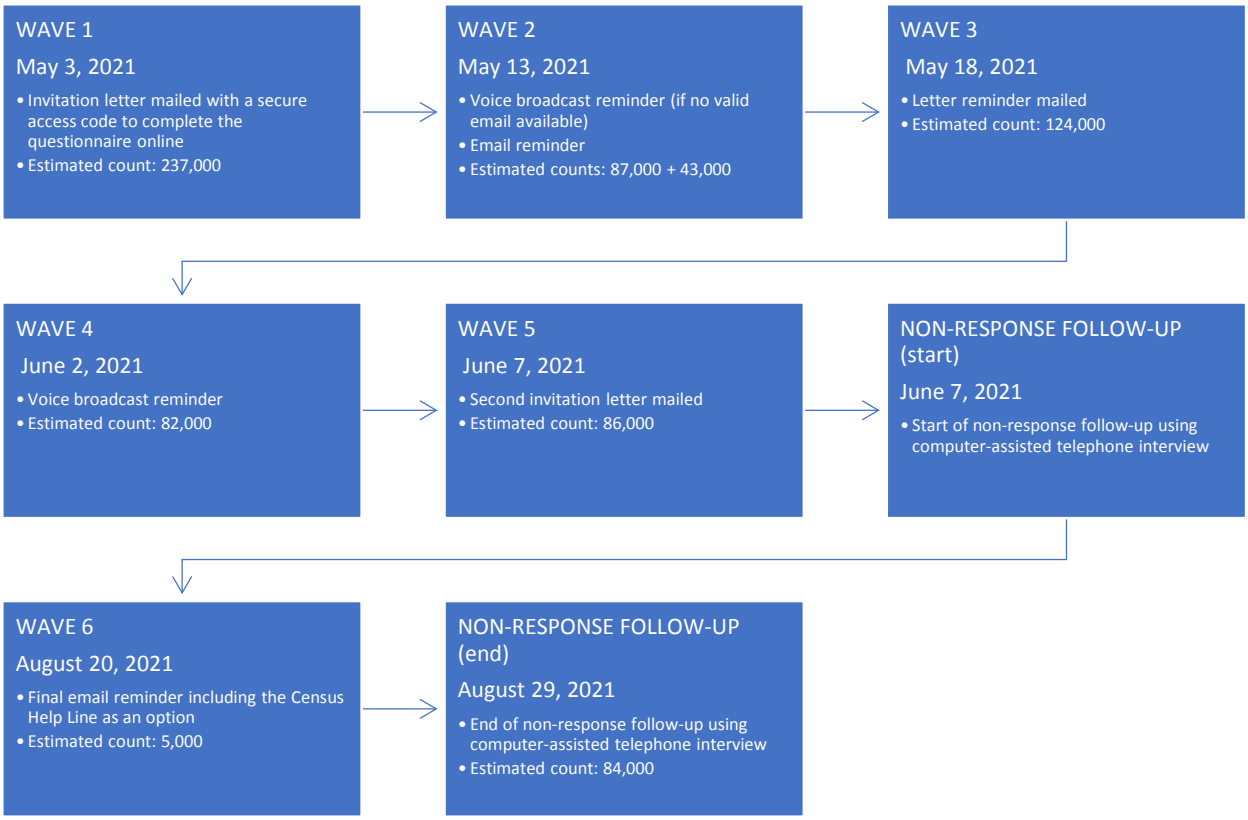
A non-response follow-up (NRFU) process was conducted to obtain completed questionnaires from agricultural operations that still had not returned a questionnaire after the multiple reminders. The Census of Agriculture

NRFU was conducted from June 7 to August 29, 2021, and was done exclusively via computer-assisted telephone interview (CATI), as in 2016.

Respondents who refuse or neglect to complete a Census of Agriculture questionnaire after multiple reminders and NRFU, or who knowingly give false or misleading information, may be prosecuted and liable to penalties stipulated in the *Statistics Act*.

For more information about the mandatory legal requirement to complete the Census of Agriculture questionnaire, refer to Appendix 1.

Figure 1
2021 Census of Agriculture collection waves



Census of Agriculture collection universe

The Census of Agriculture universe was divided into three segments for collection: (1) large and complex operations, (2) rare and unique operations, and (3) standard operations. A tailored collection methodology was developed for each of the three segments. In all cases, building on the strength of the 2016 Census of Agriculture self-response, farm operators were asked to complete the questionnaire themselves.

Starting in early February 2021, 372 large and complex agricultural operations were offered the opportunity to respond. These operations were provided paper questionnaires, and their data were collected via the Large Agricultural Operations Statistics (LAOS) program from Statistics Canada's headquarters. Those that did not respond by May 3, 2021, were provided a secure access code allowing them to respond via the Internet. For those that did not respond, the NRFU process was implemented by the LAOS program until the close of collection on August 29, 2021.

A selected group of hard-to-reach or new agricultural operation types was collected from Statistics Canada's headquarters directly. This included 404 community pastures and about 500 cannabis operations. These operations were offered a CATI collection method. Collection started on May 3, 2021, and ended on November 30, 2021.

Through collection, standard agricultural operations were supported by the census collection wave methodology, which consisted of a sequence of prompts and reminders mirroring those provided by the Census of Population, but tuned to the agricultural operation universe. On May 3, 2021, all agricultural operations in the standard universe received an invitation letter by mail to complete the Census of Agriculture questionnaire online. As in 2016, this letter contained a secure access code to fill out the questionnaire online, the web address of the 2021 Census website, and a telephone number to allow the respondent to contact the Census Help Line and complete the Census of Agriculture questionnaire over the phone or request a paper questionnaire by mail.

Census Help Line

The Census Help Line, a free, nationwide, multilingual service, was available to all Census of Agriculture respondents. The toll-free number was advertised in all census communications materials. Operators at the Census Help Line were available to answer questions about the Census of Agriculture, help assess the scope of the respondent operations, help complete the questionnaire over the phone or mail a paper questionnaire to those who preferred to complete it on paper.

Chapter 5 – Processing

Introduction

The step after collection, known as the processing phase, involves many rigorous quality control and processing edits to identify and resolve problems related to inaccurate, missing or inconsistent data. Those situations that cannot be resolved through edits are handled by an imputation procedure that replaces each missing or inconsistent response either with a value consistent with the other data on the questionnaire or with a response obtained from a similar agricultural operation.

For the first time, the 2021 Census of Agriculture used the Integrated Business Statistics Program (IBSP) system to handle the edit and imputation requirements.

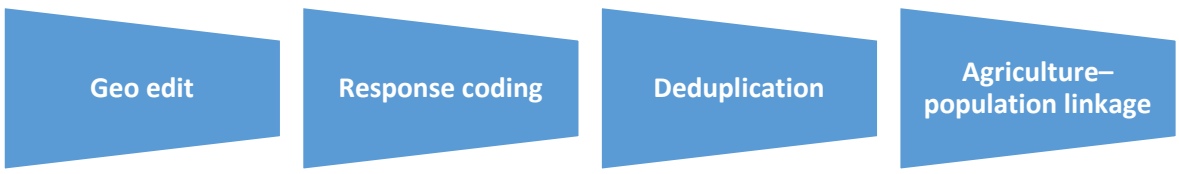
Receipt and registration

Questionnaire responses for both the Census of Agriculture and the Census of Population were handled through common receipt and registration processes. Online questionnaire responses for the 2021 Census of Agriculture were received via the Collection Management Portal (CMP) and registered in the Census Processing System (CPS) hourly. The CPS also registered interviewer responses received through the Census Help Line and non-response follow-up (NRFU) on a regular basis during collection and follow-up. Paper questionnaires received from Canada Post were also registered and transmitted to the CMP on an hourly basis. Census employees were notified (via the CMP) of which questionnaires had been received so that they could stop contact for these respondents during NRFU procedures.

Census of Agriculture data processing

Initial processing

Census of Agriculture data from the CMP were initially processed in a dedicated Central Processing System (CPS*Pro). Initial processing included four main tasks: geo edit, response coding, deduplication and agriculture–population linkage.



Geo edit—This process assigned geographic identifiers to the main location of the agricultural activity of each farm, following the farm headquarters rule.

The Census of Agriculture questionnaire allowed respondents to report either the civic address or the quarter, section, township, range and meridian coordinates of their main farm location.

These data were subjected to a series of automated standardization routines and processes that assigned the province or territory, the census agricultural region, the census division and the census consolidated subdivision.

This geographical hierarchy facilitated the aggregation and release of agricultural data at subprovincial levels.

Response coding—As the Census of Agriculture questionnaire did not include an exhaustive list of all possible agricultural items (e.g., commodities and practices) because of space constraints, open-ended "specify" questions were used to allow respondents to identify and report rarer items on the questionnaire.

Write-in fields were provided for other field crops; other field vegetables; other fruits, berries and nuts; other products grown in a greenhouse; other poultry; other livestock; other renewable energy types produced on the operation; and other methods used to sell agricultural products directly to consumers for human consumption.

The farm headquarters rule

All data collected for agricultural operations that are composed of numerous parcels of land situated in different standard geographic areas (such as rural municipalities or counties) are assigned to the geographic area where the farm headquarters is located.

The application of the headquarters rule could result in some perceived inconsistencies related to the allocation of land and commodities to distinct geographic areas.

A unique code was assigned to distinguish each of these additional items. An automated coding system was used for most cases; the remainder were coded manually.

Deduplication—This process identified and removed duplicate questionnaires from the Census of Agriculture database. Duplicate questionnaires could have occurred when two or more partners received and completed a separate questionnaire for the same agricultural operation, or when duplicated records existed in the Census of Agriculture frame.

Agriculture–population linkage—This process attempted to match Census of Agriculture farm operators with people in the Census of Population database to create a composite record. The process used G-Link, a probabilistic record linkage generalized system developed by Statistics Canada, to bring together the two files and identify individuals common to both populations. The resulting composite records allowed for the addition or confirmation of key person-level data such as sex and age from the Census of Population to the Census of Agriculture dataset.

Edit and imputation

After initial processing, Census of Agriculture data moved to the IBSP system. One of the key advantages of using this new system for further processing of Census of Agriculture data in 2021 was its modular approach. The IBSP generated numerous data quality flags, such as whether a unit was a non-respondent, whether a data point had been imputed or whether it had been filled in using information from an alternative data source. These flags were ultimately used at the estimation stage to derive various quality indicators.

The IBSP system included the following three main processing tasks: data import and integration, edit and imputation, and estimation.

Data import and integration—Census of Agriculture respondent data and replacement data from administrative sources (e.g., revenues and expenses, and operating arrangements), were imported into the IBSP and then integrated, with any manual data corrections made by data analysts, into a single record for each entity in the Census of Agriculture universe. Once the integration was completed, the data were ready for the edit and imputation processes.

Edit and imputation—Collected data could contain invalid, inconsistent or missing responses as a result of respondent misunderstanding, or unintentional or deliberate non-response or errors. The edit and imputation processes addressed these data errors by providing valid, plausible values where responses were missing. This stage included the following:

1. Preliminary automated editing and clean-up tasks were done, such as:
    - filling cells with zeroes based on skipped questions in the online questionnaire flow
    - calculating derived variables (e.g., the number of farms reporting each commodity) and non-collected totals used for dissemination (e.g., total wheat)
    - correcting some common errors made by respondents
    - calculating the total from the parts, when all the parts are reported (not blank) and the total is blank
    - filling blanks with zeroes when the total and some parts are present
    - filling the parts with zeroes when all the parts are blank and the total is zero.

2. Many methods of imputation were used to complete missing Census of Agriculture data, from automated changes using Statistics Canada's Banff edit and imputation generalized system, to manual changes made by analysts.

    Usually, selected variables were imputed first and used as anchors in subsequent steps to impute other related variables.

    The types of imputation performed were:
    - **deterministic imputation,** to correct systematic errors or errors that have only one solution based on subject-matter experience
    - **donor imputation**, when many solutions were possible to solve an error; in particular, a donor imputation method known as nearest neighbour was used in the treatment of partial non-response and for total non-response (it replaced missing, invalid or inconsistent information about one operation with values from another, "similar" operation)
    - **ratio imputation**, where observed relationships between two variables in the population are used to impute a value when one of the two variables is missing—e.g., for specialty mushrooms and machinery
    - **historical imputation**, where data from previous censuses of agriculture are directly used as responses—e.g., for community pastures.

3. Other tasks (e.g., prorating to make the sum of the parts consistent with the totals; backfilling yes or no filter tick boxes for consistency; recalculating derived variables; and conducting the final clean-up, imputation and prorating) were done.

Estimation—Because the Census of Agriculture does not employ sampling, the estimates can be generated in the IBSP by simply summing up the responses to the variables of interest for the required geographic hierarchies and other distributions. At the same time, the amount of uncertainty in the estimates because of imputation is calculated for later use in the derivation of quality indicators.

For more information on Census of Agriculture releases, data quality indicators and disclosure avoidance methods, refer to the Dissemination chapter.

Chapter 6 – Data quality evaluation

Introduction

Census of Agriculture data provide statistical information on farms and farm operators at fine geographic levels and for small subpopulations. Quality evaluation activities are essential to ensure that census data are reliable and that they meet user needs. These activities are based on the *Statistics Canada Quality Guidelines*.

Data accuracy

The accuracy of statistical information is the degree to which the information correctly describes the phenomena it was designed to measure. An integral part of each Census of Agriculture is the implementation of new or enhanced methods, procedures and technologies that ultimately contribute to ensuring that Census of Agriculture data are as accurate as they can be, by improving all areas of the process—from collection, to processing, validation and dissemination of the data. Some examples of these processes include the following:

- The online questionnaire was tested both internally and through focus groups to ensure functional accuracy and user-friendliness.
- The population to be sent questionnaires was tested to find an appropriate balance between potential undercoverage and overcoverage and to represent the new farm definition. An additional set of modelled records was added to this population to represent newer farms and reduce undercoverage.
- The processing system underwent thorough review and testing to ensure that the methods being used were appropriate and that it provided the expected results.
- The data collection plan included various collection options, different media for reminding people to respond and intensive non-response follow-up by telephone to increase response rates.
- Administrative data providers were contacted to ensure an understanding of the content of their data and to validate concepts that they use.
- The methodology used to determine whether a non-respondent should be considered to be operating a farm or not and the number and type of modelled records to add to the population was thoroughly investigated by examining different methods and testing them against historical data.
- A dedicated team of analysts conducted a thorough review of the results, making changes to the data when necessary and also pointing out potential improvements to the processing system that were later implemented.
- Other sources of data were used to compare, evaluate and validate calculated estimates.
- Proven statistical methods were used to link data between the Census of Agriculture and other data sources.

Response rates for the 2021 Census of Agriculture will be published on May 11, 2022, and available via the Census of Agriculture portal.

Main types of errors

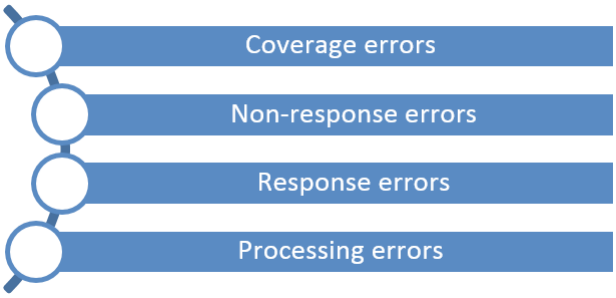
With projects as large and complex as the Census of Agriculture, the estimates produced are inevitably subject to a certain degree of error. Knowing the types of errors that can occur and how they affect specific variables can help users assess the usefulness of the data for their particular applications, and assess the risks involved in

making conclusions or decisions based on these results. The introduction of quality indicators in 2021 helps users in this assessment.

Errors can arise at virtually every stage of the census process, from preparing materials, through collecting data, to processing and tabulating the final results. Moreover, errors may be more predominant in certain areas of the country or vary according to the characteristic being measured. Some errors occur at random, and when individual responses are aggregated for a sufficiently large group, they tend to cancel each other out. For errors of this nature, the larger the group, the less likely that these errors will significantly affect the corresponding estimate. For this reason, data users are advised to be cautious when using estimates based on a small number of responses. However, some errors might occur more systematically and result in biased estimates. The bias from such errors is persistent, no matter how large the group for which responses are aggregated, and is particularly difficult to measure, as such systematic errors are a more serious problem for most data users than random errors.

For more details on processes used to identify and fix data errors, refer to the Collection and Processing chapters.

There are two main types of errors in a statistical program: sampling errors and non-sampling errors. In the case of the Census of Agriculture, no sampling takes place, so only non-sampling errors occur. The four most common types of non-sampling errors are coverage errors, non-response errors, response errors and processing errors.



Coverage errors

Coverage errors can occur for a number of reasons: farms may be erroneously excluded when creating the census frame, units may be erroneously classified as farms or as non-farms during data processing procedures, or farms may be counted more than once.

The initial population used for the Census of Agriculture data collection consisted of those records in Statistics Canada's Business Register that met criteria for inclusion in the census frame. This includes indications of agricultural activity based on tax data received from the Canada Revenue Agency, inclusion in special known populations such as institutions with farming activity, previously known agricultural operations, or signals from administrative data. The population was intentionally designed to cover more operations than were expected to self-identify as farms. This was to reduce the potential bias because of undercoverage (missed farms).

Because the tax data were available for only the 2019 reference year, the initial population would suffer from undercoverage because of farms that started their operations in 2020 or 2021. Modelled records were added to the population to represent these new farms. They were not sent for collection but rather had data imputed for them.

In spite of these efforts, some coverage errors exist. Some active agricultural operations may still not have been included in the census frame. Coverage errors among the establishments in the frame population can occur when non-responding units are erroneously classified as farms or as non-farms during Census of Agriculture data processing. These errors were reduced by well-defined and thoroughly studied methods of predicting whether a non-responding establishment was an active agricultural operation or not. In addition, the farm operators who were part of the Census of Agriculture frame and who did not respond to the mail-out or did not receive a letter because of an incorrect mailing address were contacted by phone to complete a questionnaire.

Also, to reduce overcoverage, deduplication activities were undertaken before the creation of the frame and during Census of Agriculture data processing.

Coverage errors were also possible because of the use of modelled records. The number of records added to the initial population was based on statistical models, which have uncertainty associated with them. This could lead to either undercoverage (not enough records added) or overcoverage (too many records added). Research into different models and some preliminary 2020 tax data were used to reduce this possibility.

Coverage errors for the 2021 Census of Agriculture will be published on May 11, 2022, and available via the Census of Agriculture portal.

Non-response errors

Non-response errors occur when some or all information about farm operations and operators is not provided. Some Census of Agriculture questionnaires are only partially completed or not completed at all, usually because of the respondent's absence during the census period or unwillingness to complete the questionnaire. To encourage participation, Statistics Canada provided respondents with three ways to respond to the Census of Agriculture—by Internet, which was the preferred default method, but also by paper or by telephone.

The principal collection period for the census extended from May to August so operators could respond at a time that was convenient for them. Non-respondents were sent several reminders through different media to encourage them to respond. Extra effort was put into getting responses from operations that were thought to be large to reduce the potential non-response bias.

If no response was received, then the data for the operation were imputed using statistical methods. The imputation methods used information that Statistics Canada already had on the non-responding operations to derive plausible responses to the census questions.

Response errors

Response errors occur when a question is misunderstood or a characteristic is misreported or approximated by the respondent or Census of Agriculture staff. In the Census of Agriculture, implausible or inconsistent responses are confirmed or corrected by contacting the respondents or consulting other sources of information about the farm, since the responses could have a significant impact on totals at either the provincial or the subprovincial level.

Online responses to the 2021 Census of Agriculture had edits that prompted a respondent when invalid or unlikely data were entered or data were missing. The online census questionnaires also pre-filled certain fields based on business information from Statistics Canada's Business Register (e.g., the legal name and address of the business), reducing errors. Furthermore, automated skip patterns alleviated respondent burden and improved consistency by skipping questions that were not applicable. In 2021, for the first time, respondents identified all of the activities taking place on the farm in one location on the questionnaire to allow them to more easily ensure that they had accounted for all of their activities. The online questionnaires also had help available for respondents who wanted additional information about a census question, reducing the likelihood that terms and questions would be misinterpreted.

Processing errors

Processing errors can occur at any stage of processing, including coding and classification errors, errors in determining whether a non-respondent operated a farm or not, and errors because of limitations in the imputation procedure (to correct missing or inconsistent responses, as described in the non-response errors section).

These errors were mitigated through the use of researched and tested automated methods, followed by validation by census analysts.

Data validation and certification

The Census of Agriculture final data quality assurance processes are data validation and data certification.

Data validation

Data validation provided the last opportunity to analyze census data, find and correct significant errors, and evaluate the final quality of data before their publication. In 2021, the Census of Agriculture moved from a linear process to an iterative process within the Integrated Business Statistics Program (IBSP). In the IBSP, data validation occurred in parallel with collection and processing, rather than afterwards. This iterative approach, known as “rolling estimates,” meant analysts could review estimates earlier in the census cycle, since initial estimates were available before collection closed. Depending on the stage of the census, rolling estimates were run at least once a week, allowing manual corrections to be integrated on an ongoing basis.

To find and correct significant errors, census analysts first reviewed the data at the aggregate level, looking for anomalies in data aggregated at the provincial and subprovincial geographic levels, cross-tabulated by farm type and revenue class. For all census variables, analysts checked for significant differences between the 2021 and the 2016 censuses for both value estimates and the number of farms reporting these estimates, and compared these rates of change with their expectations. Reference data, such as surveys, price indexes, import and export data, administrative data, and other information, were also examined to confront results observed in the 2021 Census of Agriculture data. Data were analyzed within the context of the conditions of the period that they reflect. For agriculture data, this includes significant economic events, market trends, weather phenomena, labour market factors, etc.

In the second step of the data validation process, census analysts reviewed the data at the farm level, examining individual records to identify and correct any response or processing errors. Individual records were compared with previous censuses, current agricultural surveys and administrative data sources. Where necessary, respondents were contacted to verify their responses. Emphasis was placed on the records that contributed most significantly to the estimates for a given variable. Errors remaining because of misreporting, data capture or other reasons were identified and corrected.

In the last step of the data validation process, a final review at the macro level was performed to assess the final estimates and evaluate the impact of the process.

Certification

Once the estimates were deemed ready and defendable by the census analysts, certification reports containing results of the analysis were prepared, including a summary of the investigation undertaken, the data anomalies found and addressed, and recommendations for publication. These were presented to a certification review committee composed of senior management and subject-matter experts, who assessed the findings and ultimately decided whether the data were fit for use and ready to be published and made available to data users.

Quality indicators

For the first time in the Census of Agriculture history, quality indicators will accompany most estimates published for the 2021 *Farm and Farm Operator Data* release. Some estimates will not have quality indicators (e.g., farm operator counts).

These quality indicators take into account the variances because of the uncertainty associated with imputation and the random tabular adjustment disclosure avoidance method used to maintain the confidentiality of respondents.

For more information on Census of Agriculture releases, data quality indicators and disclosure avoidance methods, refer to the Dissemination chapter.

Chapter 7 – Dissemination

Introduction

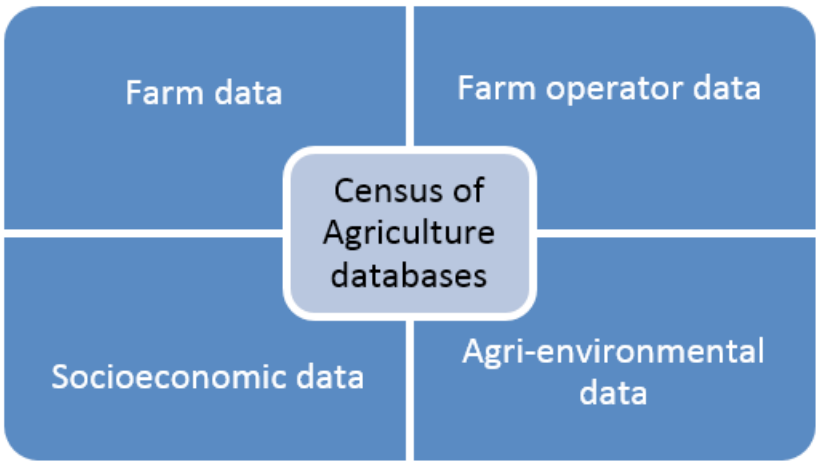
The Census of Agriculture is the cornerstone of Statistics Canada's Agriculture Statistics Program. The main goal of the Census of Agriculture dissemination process is to ensure that census products and services meet the primary needs of the majority of data users. As in previous censuses, the 2021 Census of Agriculture strives to provide as much data as possible free of charge to the public in a timely and user-friendly manner.

The 2021 Census of Agriculture offers a wide variety of products and services, which will be available from the new Census of Agriculture portal. Most 2021 Census of Agriculture products (data, analysis, interactive tools, maps, references, etc.) are scheduled to be disseminated in 2022, starting with the *Farm and Farm Operator Data* release on May 11, 2022.

Census of Agriculture dissemination products—such as data tabulations, analytical articles, reference materials, infographics, interactive data visualization tools and more—can be accessed via the new Census of Agriculture online portal.

Census of Agriculture data

The Census of Agriculture keeps four main types of microdatabases: farm data, farm operator data, socioeconomic data and agri-environmental data.



Farm data

The farm microdatabase includes variables at the census farm level, such as farm numbers, farm type, crops, horticulture, greenhouses, mushrooms, maple taps, Christmas trees, land use, land tenure, inputs, manure, irrigation, tillage and seeding practices, land practices and features, livestock, poultry, bees, organic farming, farm capital, farm operating revenues and expenses, direct sales, agricultural paid workers, technologies, renewable energy production, and farm succession plans.

Farm databases were created for 1961, 1966, 1971, 1976, 1981, 1986, 1991, 1996, 2001, 2006, 2011, 2016 and 2021.

Aggregated farm data are available at the Canada, province or territory, census agricultural region (CAR), census division (CD) and census consolidated subdivision (CCS) levels of geography.

For more information, refer to the *Farm and Farm Operator Data* page on Statistics Canada's website.

Farm operator data

The farm operator microdatabase includes variables at the farm operator level, such as operator numbers, age, sex, and average weekly time contribution to farm work and to other paid work.

Farm operator databases—including up to three operators per census farm—were created for 1991, 1996, 2001, 2006, 2011, 2016 and 2021 (note: before the 1991 Census of Agriculture, information about only one operator was collected for each census farm).

Aggregated farm operator data are available at the Canada, province or territory, CAR, CD and CCS levels of geography.

For more information, refer to the *Farm and Farm Operator Data* page on Statistics Canada's website.

Socioeconomic data

The agriculture–population linkage microdatabase includes variables from the linkage between the Census of Agriculture and the Census of Population. It provides a socioeconomic profile of the farm population (i.e., operators and their families) at the person, family and household levels, and it includes variables such as age, sex, marital status, ethnicity, country of birth, mother tongue, educational attainment and income.

Aggregated agriculture–population linkage data are available only at the Canada and province levels of geography (Canada's three territories are excluded).

Agriculture–population linkage microdatabases were created for 1971, 1981, 1986, 1991, 1996, 2001, 2006 and 2016, and will be created again for 2021.

Notes:

- The population information came from the Census of Population's long form, which was a mandatory questionnaire distributed to 20% of Canadian households until 2006, and to 25% of households in 2016 and 2021.
- In 2011, the Census of Agriculture was linked to the National Household Survey (NHS), distributed to approximately 33% of Canadian households. The NHS replaced the Census of Population long form that year only.

For more information, refer to the Agriculture–Population Linkage Data page on Statistics Canada's website.

Agri-environmental data

The new agri-environmental spatial data (AESD) microdatabase offers clients the opportunity to order custom tabulations, including selected crop and livestock data from the Census of Agriculture, for special geographic boundaries such as watersheds, Soil Landscapes of Canada, ecodistricts or other ad hoc areas. With an eye to better supporting environmental data requests, the AESD database aims to allocate commodities geographically more accurately than the main Census of Agriculture farm database (where all data collected for an agricultural operation are assigned to the geographic area where the farm headquarters is located).

This database will be created starting with the 2021 Census of Agriculture and will replace the uncatalogued Census of Agriculture census geographic component database (created for the 1996, 2001, 2006, 2011 and 2016 censuses).

Census of Agriculture dissemination strategy

Evaluation of the 2016 strategy

An evaluation of the 2016 Census of Agriculture dissemination strategy was conducted by Statistics Canada to provide a neutral, evidence-based assessment; identify gaps; and provide recommendations to be implemented in the 2021 strategy.

The evaluation methodology consisted of document reviews, interviews with Statistics Canada subject-matter experts, and interviews with both internal and external data users.

The evaluation found that a majority of interviewees were satisfied with the dissemination of the 2016 Census of Agriculture and noted it was an improvement over 2011. Data tables were identified as the most used product.

In terms of timeliness, interviewees were satisfied with the publication of the 2016 *Farm and Farm Operator Data* estimates one year after Census Day. However, interviewees considered that the release date for the Agriculture–Population Linkage Data—2.5 years after Census Day—and, to a lesser extent, the publication date for selected historical tables—19 months after Census Day—affected their usefulness.

The evaluation also identified gaps in cross-analysis with non-agricultural sectors, in analysis of emerging sectors and in guidance on how to use web tools.

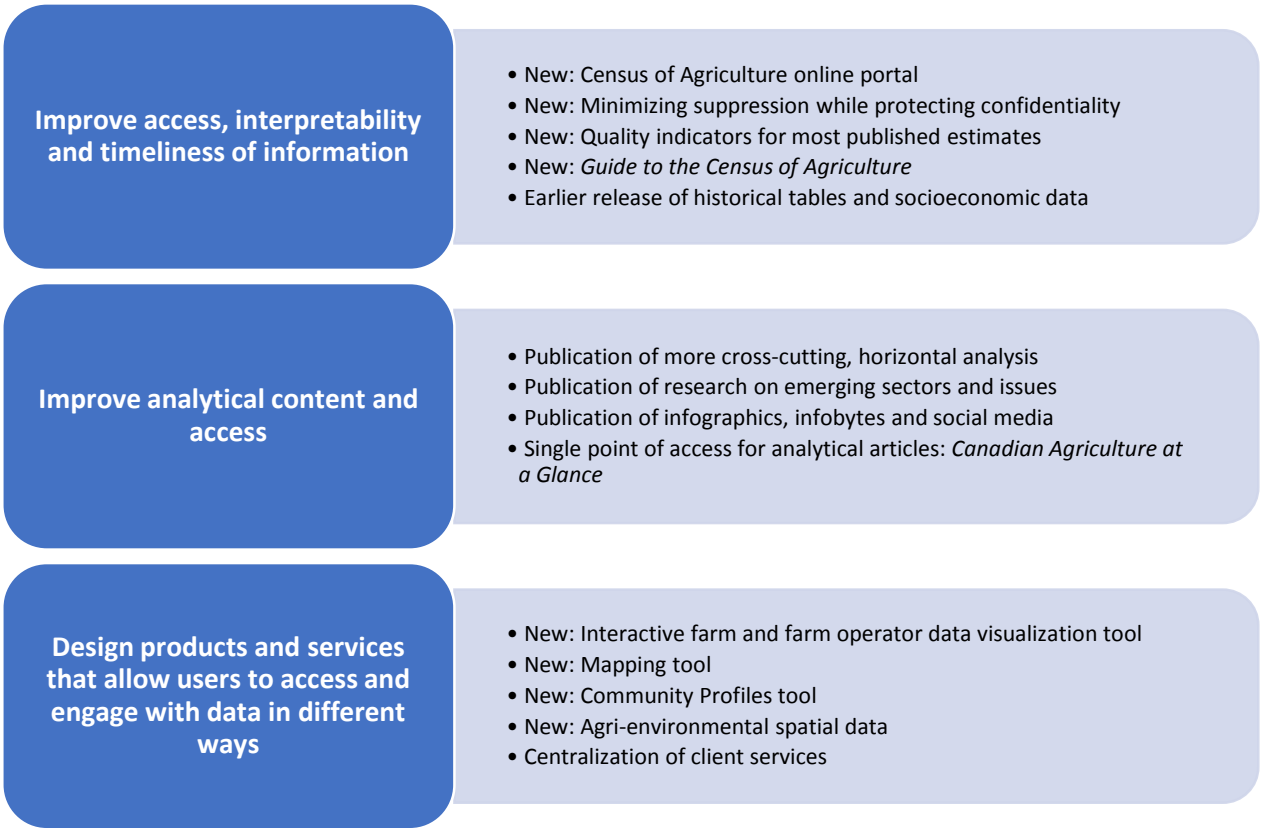
For detailed information on the evaluation of the Census of Agriculture dissemination strategy, refer to the *Evaluation of the Census of Agriculture and Innovation in the Agriculture Statistics Program* report.

Strategy for 2021

The 2021 Census of Agriculture dissemination strategy is user-centric in nature and based on feedback from the evaluation of the previous census program and user consultations. This strategy is based on impactful releases, where users are provided the information they need, when they need it, in the ways they want to access it, and with the tools and knowledge to make full use of it.

The main objectives of the Census of Agriculture's impactful releases strategy are to

- improve access, interpretability and timeliness of information
- improve analytical content and access
- design products and services that allow users to access and engage with data in different ways.



The details of these initiatives will be discussed throughout this chapter.

Minimizing suppression while protecting confidentiality

All tabulated data from the Census of Agriculture are subjected to a disclosure avoidance procedure to prevent the possibility of associating statistical data with any identifiable agricultural operation or individual.

Statistics Canada has been exploring new methods to balance the need for more high-quality data outputs with the protection of confidential information in the release of economic data estimates. The 2021 Census of Agriculture goal is to meet the needs of data users by publishing more relevant data than ever before, without compromising the confidentiality of census respondents, while simultaneously meeting adequate data quality standards.

Confidentiality protection for farm data

To achieve this goal, a new zero-suppression disclosure avoidance method called random tabular adjustment (RTA) has replaced the traditional cell-suppression method used in previous censuses (i.e., G-Confid). This method will be applied exclusively to "farm" data pertaining to the official 2021 *Farm and Farm Operator Data* release tabulations to be published on the Statistics Canada website on May 11, 2022.

RTA is a statistical technique used to protect confidential information in published data by applying random adjustments to sensitive estimates. The addition of this random "noise" to estimates prevents the disclosure of an individual's reported data. This method differs from the suppression techniques that have traditionally been used with economic data tables released by Statistics Canada, because it improves the utility of the data. Using RTA, Statistics Canada can identify sensitive estimates and randomly adjust their value rather than suppress them. The magnitude of the adjustment is calculated to protect respondent confidentiality. After adjusting the value, the agency assigns a quality indicator to the estimate to indicate the degree of confidence that users can have in its

accuracy. For more information on quality indicators, refer to the Quality indicators for published estimates section in this chapter.

The use of RTA by the 2021 Census of Agriculture will result in a significant increase of publishable estimates, compared with previous censuses (e.g., 35% of all non-zero estimates—excluding farm-count estimates—were suppressed in 2016).

Finally, G-Confid will continue to be the method of choice for the often more complex and sensitive custom data requests ordered from Statistics Canada's Data Service Centre.

For more information on RTA, refer to the Random Tabular Adjustment is here! blog post.

Confidentiality protection for farm operator data

A random-rounding procedure (using the G-Confid rounding feature) is applied to all data appearing in farm operator tables. With this technique, all farm operator counts in these tables (e.g., number of operators by sex or age group), including totals, are randomly rounded either up or down to a multiple of five.

While providing protection against disclosure, this random-rounding procedure does not add significant error to the data in most cases. However, it does result in certain data inconsistencies:

- Since the totals in a table are randomly rounded independently of their component cell values, some differences may exist between the rounded totals and the sum of their rounded components.
- Similarly, percentage distributions, which are calculated based on rounded cell values, may not necessarily add up to 100%. However, averages are calculated based on unrounded data.
- Individual data cells containing low counts lose significantly more precision because of random rounding than those containing larger counts.
- Finally, minor differences can be expected in corresponding totals and cell values appearing in different tables, as random rounding is performed independently for each table.

Confidentiality protection for socioeconomic data

Count estimates—Similar to farm operator data, a random-rounding procedure (using G-Confid) is applied to all person-level, household-level and family-level counts (i.e., number of people, number of households or number of families) appearing in the Agriculture–Population Linkage Data tables, which include socioeconomic characteristics of the farm population.

The same data inconsistencies described for the random-rounding procedure for operator data in the previous section apply to socioeconomic data.

Value estimates—For "value" variables (e.g., total farm income—amount in dollars), on the other hand, values are first subjected to a combination of minimum threshold suppression and dominance suppression (using G-Confid). If not suppressed, values are adjusted so that the true mean is preserved (i.e., the true mean is obtained when dividing the adjusted value estimate by its corresponding random-rounded count estimate).

The loss of precision because of the adjustment of value estimates significantly increases as their associated count estimates decrease.

Quality indicators for published estimates

For the first time, the Census of Agriculture will provide a quality indicator for most published estimates included in the official *Farm and Farm Operator Data* release tabulations published on Statistics Canada's website on May 11, 2022.

These quality indicators will take into account the variance because of imputation coming from processing and any extra variance required by the RTA disclosure avoidance method to protect the confidentiality of census respondents. Quality indicators will be identified by letters—ranging from A through F—with each letter representing a specific coefficient of variation (CV) range, as seen in the table below.

Table 2
Census of Agriculture data quality indicators

Quality indicator	Coefficient of variation value	Description
A	< 5.0%	Excellent
B	5.0% to 9.99%	Very good
C	10.0% to 14.99%	Good
D	15.0% to 24.99%	Acceptable
E	25.00% to 49.99%	Use with caution
F	≥ 50.00%	Too unreliable to be published

Note: Only one of the letter quality indicators above is published for most estimates included in the Census of Agriculture tabulations; the exact CVs are not disclosed.

Improved analytical content and access

The analytical objectives of the Census of Agriculture's impactful releases strategy are to enhance releases and publish relevant and accessible articles and media through

- publication of more cross-cutting, horizontal, targeted storytelling analysis, going beyond the primary sector
- publication of research on emerging sectors, trends and issues (e.g., technology adoption, direct marketing, impacts of COVID-19, food supply and food security)
- publication of infographics, infobytes and social media
- a single point of access for all analytical articles: *Canadian Agriculture at a Glance*.

The Census of Agriculture has strengthened and will continue to strengthen partnerships with other subject-matter areas within Statistics Canada and with external researchers, to increase horizontal analysis, going beyond the primary agriculture sector.

Dissemination geography

Most Census of Agriculture data products are available at the national level and at four specific levels of the agriculture regions variant of Statistics Canada's Standard Geographical Classification:

- Canada
- province or territory
- census agricultural region (CAR)
- census division (CD)
- census consolidated subdivision (CCS).

Notes:

- Census of Agriculture data for the territories are not available at subterritorial levels of geography (e.g., CAR, CD or CCS).

- Socioeconomic information from the Agriculture–Population Linkage Data is available only at the national and provincial levels of geography.
- Census of Agriculture data are not available at the census subdivision level.
- Data from the Census of Agriculture's agri-environmental spatial data database are available for watersheds, Soil Landscapes of Canada, ecodistricts and other custom geographic areas.

2021 Census of Agriculture products and services

The 2021 Census of Agriculture offers a wide variety of products and services, which will be available from the Census of Agriculture portal.

The following table shows the list of products currently planned for release and the tentative release dates.

Note: This list is compiled for planning purposes only. Release dates may change. The list may also be updated periodically.

Table 3
Census of Agriculture products and release dates

Release date	Product	Description
February 22, 2022	**Reference maps** Catalogue no. 95-630-X Census year 2021	This product provides static reference maps with the boundaries, codes and names for the geographic levels in Canada for which Census of Agriculture data are released: province or territory, census agricultural region (CAR), census division (CD) and census consolidated subdivision (CCS).
February 22, 2022	**Census of Agriculture Mapping Tool** Catalogue no. 32260003 Census year 2016	This is a **brand-new** product. *The Census of Agriculture Mapping Tool* is a user-friendly interactive web mapping application that allows for a quick visualization of the spatial distribution of Census of Agriculture data. Users can select census variables for viewing at four geographic levels: province or territory, CAR, CD and CCS. This release includes 2016 farm and farm operator data and will be updated later in 2022 with 2021 data.
April 14, 2022	***Guide to the Census of Agriculture*** Catalogue no. 32260002 Census year 2021	This is a **brand-new** product. The *Guide to the Census of Agriculture* is a reference document that provides an overview of various phases of the census—communications, content determination, collection, processing, data quality evaluation and dissemination—and other valuable information for users.
May 11, 2022	**Farm and Farm Operator Data** Catalogue no. 95-640-X Census year 2021	This product provides a comprehensive picture of the agriculture industry across Canada every five years. The 2021 edition of this product will include • an article in The Daily • 40 thematic data tables including all variables collected by the 2021 Census of Agriculture • 14 historical tables—published seven months earlier than in the last census to address users' feedback—comparing selected estimates across multiple census years • an interactive data visualization tool highlighting selected farm and farm operator data.

Table 3
Census of Agriculture products and release dates

Release date	Product	Description
May 11, 2022	**Data linked to geographic boundaries** Census year 2021	This product provides farm and farm operator data from the Census of Agriculture linked to geographic boundary files, so that users can produce maps and perform spatial analysis using a geographic information system with minimal effort. The geographic levels included with this product are province or territory, CAR, CD and CCS. This product is published on the Government of Canada's Federal Geospatial Platform and Open Maps portals.
June 15, 2022	**Census of Agriculture Mapping Tool** Catalogue no. 32260003 Census year 2021	The Census of Agriculture Mapping Tool is a user-friendly interactive web mapping application that allows for a quick visualization of the spatial distribution of Census of Agriculture data. Users can select census variables for viewing at four geographic levels: province or territory, CAR, CD and CCS. This release loads 2021 farm and farm operator data to the tool.
June 15, 2022	***Community Profiles*** Catalogue no. 32260004 Census year 2021	This is a **brand-new** product. This tool retrieves selected farm and farm operator data for a specific geographic level indicated by the user.
June 15, 2022	***Canadian Agriculture at a Glance*** Catalogue no. 96-325-X Census year 2021	This product provides provincial and territorial profile articles highlighting specific key results from the 2021 Census of Agriculture.
June 15, 2022	***Canadian Agriculture at a Glance*** Catalogue no. 96-325-X Census year 2021	This is the start of a series of short and accessible analytical articles based on 2021 Census of Agriculture farm and farm operator data (specific release dates to be confirmed).
September 27, 2022	**Agricultural Ecumene Boundary File** Catalogue no. 92-639-X Census year 2021	This product delineates areas of significant agricultural activity in Canada. This product is generalized for small-scale mapping and can be used to clip or intersect with any geographic boundary file, administrative or natural, to limit the data display to those areas where agricultural activity is concentrated in Canada. When used in dot density and choropleth thematic maps, the ecumene concept provides a more accurate depiction of the spatial distribution of data within geographic areas.
September 27, 2022	**Agricultural Ecumene Boundary File - Reference Guide** Catalogue no. 92-639-G Census year 2021	This reference guide provides an overview of the Agricultural Ecumene Boundary File (92-639-X) product, including the general methodology used to create the files and other important technical information.
September 27, 2022	***Census of Agriculture: Thematic Maps*** Catalogue no. 95-634-X Census year 2021	This product provides maps showing the spatial density distribution of specific Census of Agriculture data themes. The data portrayed in these maps may be qualitative (e.g., predominant farm types) or quantitative (e.g., livestock inventory variation between the last two censuses).
December 13, 2022	***Agri-Environmental Spatial Data*** Catalogue no. 32260005 Census year 2021	This **brand-new** product offers clients the opportunity to order custom tabulations, including selected crop and livestock data from the Census of Agriculture, for special geographic boundaries such as watersheds, Soil Landscapes of Canada, ecodistricts or other ad hoc areas.

Table 3
Census of Agriculture products and release dates

Release date	Product	Description
Spring and summer 2023	***Agriculture–Population Linkage Data*** Catalogue no. 95-633-X Census year 2021	This product presents selected data from the linkage between the Census of Agriculture and the Census of Population at the national and provincial levels. It provides a socioeconomic profile of the farm population at the person, family, household and farm levels and includes variables such as age, sex, marital status, country of birth, mother tongue, educational attainment and income. The 2021 edition of this product—published earlier than in the last census to address users' feedback—will include • an article in The Daily • thematic data tables • an interactive data visualization tool describing the socioeconomic characteristics of the farm population.
Spring and summer 2023	***Canadian Agriculture at a Glance*** Catalogue no. 96-325-X Census year 2021	This is the start of a series of short and accessible analytical articles based on 2021 socioeconomic data from the Agriculture–Population Linkage Database (specific release dates to be confirmed).

Client services and custom data requests

The Census of Agriculture transferred client services to Statistics Canada's regional Data Service Centre on March 31, 2020. The goal was to provide better services to data users by providing them with

- a one-stop shop for any type of data (agriculture and other), with a cross-subject-matter team knowledgeable about data, which creates horizontal synergies and promotes data integration
- continuous client-service capacity and expanded coverage in all time zones across the country with extended service hours
- unified pricing and service standards and the potential to reduce delivery times.

Statistics Canada's Data Service Centre can tailor Census of Agriculture custom data products and services to meet special data requirements, and its experienced consultants are available to advise users on the custom products that will best suit their needs.

For example, custom tabulations and thematic maps can be produced for the Census of Agriculture standard geographic areas, such as province or territory, CAR, CD and CCS, and for user-defined geographic areas.

Custom tabulations including current and historical farm data, operator data, and farm population socioeconomic data can be prepared for every census year starting in 1961. Custom thematic maps allow users to visualize the spatial density distribution of specific Census of Agriculture data at selected geographic levels.

The cost of each custom product is based on the time required to produce it according to the client's requirements.

Custom products can be ordered by email or telephone or by filling out an online form.

Appendix 1 – Mandatory requirement to respond

Mandatory requirement to respond

Just as Statistics Canada is required by law to conduct a census, respondents are required by law to complete their census questionnaires.

This requirement is set out in subsections 7(1), 8(1), 23(1) and 23(2) and section 31 of the *Statistics Act*, which reads as follows:

Rules, instructions and requests for information

Subsection 7(1):

> The Chief Statistician may prescribe the rules, instructions and, subject to subsection 21(1), requests for information that he or she considers necessary for conducting the work and business of Statistics Canada, the collecting, compiling and publishing of statistics and other information and the taking of any census authorized by this Act.

Mandatory or voluntary requests for information

Subsection 8(1):

> The Chief Statistician shall determine whether a request for information is mandatory or voluntary, with the exception of the census of population and census of agriculture, both of which are mandatory.

Request for information by any method

Subsection 23(1):

> The requests for information prescribed under section 7 may be made by any method authorized by the Chief Statistician.

Duty to provide information

Subsection 23(2):

> A person to whom a mandatory request for information is made shall provide the information to Statistics Canada, properly certified as accurate, not later than the time prescribed by the Chief Statistician and indicated to the person or not later than the extended time that may be allowed in the discretion of the Chief Statistician.

False or unlawful information

The requirement to complete a census questionnaire is supported by the penalty provisions of Section 31 of the act, which was amended in 2017 to remove imprisonment as a penalty. This section is as follows:

Section 31:

> Every person is guilty of an offence and liable on summary conviction to a fine of not more than $500 who, without lawful excuse,
>
> (a) refuses or neglects, following a request for information under this Act,
>
> (i) to provide any requested information to the best of their knowledge and belief, or
>
> (ii) to provide any requested information when and as required under this Act; or
>
> (b) knowingly gives false or misleading information or practises any other deception under this Act.