

**Wage Survey of Seasonal Workers in the Horticultural Sector
2004**

Methodology Report

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1. Background Information

Statistics Canada has a contract with Human Resources and Skills Development Canada (HRSDC) to conduct the Wage Survey of Seasonal Workers in the Horticultural Sector. The objective of this survey is to measure wages paid to domestic and foreign seasonal workers in two horticultural operations: Farm Labourer/ Harvester and Nursery or Greenhouse Workers.

This paper describes the methodology used for the Wage Survey of Seasonal Workers in the Horticultural Sector.

2. Sample Design

2.1 Sampling Frame

The target population was defined as horticultural operations with seasonal employees in the seven regions (Atlantic, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia). The sampling frame was constructed using Statistics Canada's Farm Register supplemented with additional information from the 2001 Census of Agriculture as well as a list provided by HRDC that identifies operations that participate in the Seasonal Agricultural Worker Program (SAWP). The Farm Register is a list of all farming operations and is used for many agricultural surveys. The Farm Register also contains up to date contact information. Information from the 2001 Census of Agriculture indicated which operations had employees. Operations without employees are considered out of scope, only operations with employees were included on the frame. Farms that were not in the 2001 Census of Agriculture were not included on the sampling frame.

Horticultural operations were identified on the database by variables that indicated the sales revenue from different commodities. Only operations that had sales generated by nurseries, greenhouses, potatoes, tobacco, ginseng, fruits or vegetables were included on the frame. Farms with less than \$30,000 revenue reported on the Census of Agriculture were excluded from the frame. Farms that were given an inactive or temporarily inactive status (on the Farm Register) were excluded. A total of 9519 operations were included on the final sampling frame.

2.2 Stratification of the Frame

The frame was stratified by region, type of operation and by participation in SAWP to ensure that the sample had sufficient units to provide estimates that were representative of the target population. The tables below give the frame population counts for each stratification variable.

Table 1: Frame population by region

Region	Population Count
Atlantic	1336
Quebec	1920
Ontario	3820
Manitoba	239
Saskatchewan	227
Alberta	509
British Columbia	1468

Table 2: Frame population by occupation

Occupation type	Population Count
Greenhouses and Nurseries	2927
Other occupations	6592

Table 3: Frame population by participation in SAWP

Operation's Participation in SAWP	Population Count
Does not participate in SAWP	8045
Participates in SAWP	1474

2.3 Allocation of the sample and sample selection

The desired sample size was approximately 2000 horticultural operations. The sample was allocated proportional to the size of the stratum, with a minimum of 22 units sampled in each stratum. If there were 22 or less in the stratum then it was considered a take-all stratum and all units were included in the sample. In total, 2006 units were selected to be in the sample.

3. Collection Results

The data were obtained using a Computer Assisted Telephone Interview (CATI) application during the collection period from March 1 to March 31. The response rate was 77%. Farms that were not horticultural operations or did not have seasonal employees were coded out-of-scope. As well, operations that paid by piece-rate that could not be converted to an hourly wage were considered out-of-scope. Overall 71% of the sample was in-scope. The response rates and in-scope rates for the regions are given in Table 4. Table 5 gives a summary of the collection results.

Table 4: In-scope rates and response rates by region

Region	In-scope rate (%)	Response rate (%)
Overall	71%	77%
Atlantic	72%	82%
Quebec	74%	82%
Ontario	71%	78%
Manitoba	65%	80%
Saskatchewan	58%	78%
Alberta	67%	68%
British Columbia	77%	66%

Note: In-scope rate = Number of in-scope units/ number in sample

Response rate = Number of in-scope respondents/ number of in-scope units

Table 5: Collection results

Total sample	2006
Out-of-scope operations	574
-Out of business	26
-Temporarily inactive	1
-Screened out	547
In-Scope operations	1432
-Refusal	107
-Non-response	170
-Unable to contact	6
-Unable to locate	43
-Completed interviews	1106

4. Data Processing

During collection there were automated edits that checked that the sum of the foreign and domestic workers was within a small window of the total number of workers for both occupations; nursery or greenhouses labourers, and farm labourers/ harvesters. Methodology completed additional edits for consistency. There was little partial non-response in this survey. Cells that asked for wages paid that respondents did not answer were imputed with the mean value within the same region, range of number of employees, and commodity (where possible) for the same origin (domestic or foreign) and occupation (farm labourer/ harvester and nursery or greenhouse Workers); this only affected 0.5% of the in-scope respondents. Revenue ranges were asked in the questionnaire for the purpose of analysis. Non-response of the revenue category was imputed using sales information from the frame, 7% of questionnaires required imputation for this question.

5. Estimates

Estimates were produced using Statistics Canada's Generalized Estimation System (GES). The design weights were adjusted for refusals and other non-response. Estimates were produced for the seven regions, Atlantic, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia. In addition, for better data quality estimates were also rolled up for the three prairie provinces. Estimates were also produced for revenue ranges and the combination of activity or commodity for each region. GES produces the coefficient of variation with each estimate; the following letters represent the quality of data:

A	Very good	up to 5%
B	Good	5% to 15%
C	Acceptable	15% to 33.3%
E	Use with caution	more than 33.3%
F	Not for publication	