2005 Livestock Farm Practices Survey
Dairy Producers

DRAFT ONLY

CONFIDENTIAL when completed

Collected under the authority of the Statistics Act, Revised Statutes of Canada, 1985, Chapter S-19.

To correct or make changes to this label → See below

Ce questionnaire est disponible en français.

For interviewer use only

Fully completed	005	1	
Partial	005	4	
Refusal	005	2	
No contact	005	3	

Please indicate start time of interview:

[ ][ ] : [ ][ ]

1 2

In operation	004	00	
Change of operator	004	12	
Out of business	004	13	

TO THE RESPONDENT:

To improve overall air quality in Canada and worldwide, agriculture like other industries is asked to quantify emissions of ammonia into the atmosphere. The results of the survey will place Canada among other industrialized countries who have agreed to co-operate to improve air quality around the globe. Because pollutants travel long distances crossing many boundaries, international co-operation is essential for long-term air quality. The information obtained from the survey will guide researchers to improve efficiency of Nitrogen use on farms.

Your farm was selected at random for this survey from a list of dairy producers. While participation in this survey is voluntary, your cooperation is important to ensure that the information collected in this survey is as accurate and as comprehensive as possible.

Statistics Canada is prohibited by law from publishing any statistics which would divulge information obtained from this survey that relates to any identifiable business, institution or individual without their knowledge and consent. The data reported on this questionnaire will be treated in confidence, used for statistical purposes and published in aggregate form only.

This questionnaire on commercial dairy operations deals with feed protein, barn types, manure handling and spreading of manure. The person most knowledgeable about these items should complete the questionnaire.

Please refer to the 2005 calendar year when answering questions unless specified otherwise.

Change or correction to the address label (if required)

Are there any changes required to the address label?

[ ] 11
Corporation name

[ ][ ][ ] 14
Area code

[ ] 12
Operator name

[ ][ ][ ] - [ ][ ][ ][ ] 15
Telephone

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Contact name

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Telephone

[ ][ ] 17 [ ][ ][ ][ ][ ][ ][ ][ ] 18
P.O. Box

[ ] 19
Number and street name

[ ][ ][ ] - [ ][ ][ ] 20
Postal code

[ ] 21
Post office (name of city, town or village where mail is received)

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For questions about dairy cows include the following:

- All milking cows, dry cows and heifers on your operation, regardless of ownership, including those that are custom fed or fed under contract for others.

For questions about dairy cows exclude the following:

- Do not report milking cows, dry cows or heifers owned by you but kept on a farm owned by someone else.

Section 1 – Feeding and housing practices: milking and dry cows, dairy calves, heifers

1. In 2005, what was the average number of cows, calves and heifers present on your farm operation, at any one time?

How many milking cows …?

☐☐☐☐☐☐ Milking cows$_1$

How many dry cows …?

☐☐☐☐☐☐ Dry cows$_2$

How many dairy calves …?

☐☐☐☐☐☐ Dairy calves (up to 1 year)$_3$

How many heifers …?

☐☐☐☐☐☐ Heifers (over one year)$_4$

2. In 2005, how did you feed protein to your milking cows? *Check all that apply*

Fed all the same protein amounts regardless of production or age .... ❑$_1$

Divided into high and low (or more) groups according to milk production .... ❑$_2$

First lactation animals fed differently than multi-lactation animals .... ❑$_3$

Each cow fed individualized portions of protein supplement

(e.g. topdressing or computerized feeding systems)..... .... ❑$_4$

Other, specify: _____ ❑$_5$

3. In 2005, what proportion of your milking cow feed came from commercial feed suppliers? More than 75% ❑$_1$➔ Answer questions 4 and 5 25% to 75%..... ❑$_2$➔ Answer questions 4 and 5 Less than 25%. ❑$_3$🡻 Go to question 6 None... ..... ❑$_4$🡻 Go to question 6	4. What commercial feed products did you obtain? *Check all that apply* Complete grain mix (pellets, mash, flaked)..❑$_1$ Protein supplements..... .....❑$_2$ Amino acids ....❑$_3$ Vitamin/mineral premixes..... .....❑$_4$ Other, *specify:* _____ ❑$_5$ Don't know ❑$_6$
	5. How were grain mix or protein supplements used in your operation? *Check all that apply.* Did not use grain mix or protein supplements.❑$_1$ Added to total mixed ration ....❑$_2$ Top dress (tie stall barns) ....❑$_3$ Fed in milking parlour ....❑$_4$ Fed in standing yards or pasture..... .....❑$_5$ Other, specify: _____ ❑$_6$

6. In 2005, what proportion of your dry cow and heifer feed came from commercial feed suppliers?

More than 75% ❑1➔ Answer questions 7 and 8

25% to 75% ..... ❑2➔ Answer questions 7 and 8

Less than 25%. ❑3🡻 Go to question 9

None.... ..... ❑4🡻 Go to question 9

7. What commercial feed products did you obtain?

Check all that apply

Complete grain mix (pellets, mash, flaked) .. ❑1

Protein supplements .... ❑2

Vitamin/mineral premixes .... ❑3

Other, specify: _____ ❑4

8. How were grain mix or protein supplements used in your operation?

Check all that apply.

Did not use grain mix or protein supplements . ❑1

Added to total mixed ration .... ❑2

Calf starter .. .. ❑3

Close up or pregnant cows..... ..... ❑4

Other, specify: _____ ❑5

9. In 2005, what types of areas did you use for your milking cows, dry cows and heifers *(over one year)*?

Check all that apply	Milking cows	Dry cows, heifers
Pasture(s), where grazing is a major source of feed for the cows	❑1	❑2
Exercise fields, small pastures where there is some feeding	❑3	❑4
Standing yard(s), such as corrals and unpaved yards where manure is removed… ...	❑5	❑6
Paved yards where manure is removed.....	❑7	❑8
Barn(s)	❑9	❑10

10. During the 2005 **warm season** (from May to October), how many hours during each day did you keep your milking cows, dry cows and heifers *(over one year)* in each of the following areas?

Give the most common.	Milking cows	Dry cows, heifers
On pasture.....	☐☐ hours 1	☐☐ hours 2
In exercise fields	☐☐ hours 3	☐☐ hours 4
In standing yards	☐☐ hours 5	☐☐ hours 6
In barns	☐☐ hours 7	☐☐ hours 8

11. During the 2005 **cold season** (from November to April), how many hours during each day did you keep your milking cows, dry cows and heifers *(over one year)* in each of the following areas?

Give the most common.	Milking cows	Dry cows, heifers
On pasture.....	☐☐ hours1	☐☐ hours2
In exercise fields	☐☐ hours3	☐☐ hours4
In standing yards	☐☐ hours5	☐☐ hours6
In barns	☐☐ hours7	☐☐ hours8

For questions 12 to 16, please refer to a normal year

12. In which months do your milking cows, dry cows and heifers stay most of the time in pastures or in exercise fields?

Check all that apply.

	Milking cows	Dry cows, heifers
None of the time	❑1	❑2
April to May	❑3	❑4
June to August	❑5	❑6
September to November	❑7	❑8
December to March	❑9	❑10

13. In which months do your milking cows, dry cows and heifers spend most of the time in standing yards?

Check all that apply.

	Milking cows	Dry cows, heifers
None of the time	❑1	❑2
April to May	❑3	❑4
June to August	❑5	❑6
September to November	❑7	❑8
December to March	❑9	❑10

14. In which months do you keep your milking cows, dry cows and heifers most of the time in barns?

Check all that apply.

	Milking cows	Dry cows, heifers
None of the time	❑1	❑2
April to May	❑3	❑4
June to August	❑5	❑6
September to November	❑7	❑8
December to March	❑9	❑10

15. During the **warm season** (from May to October), what percentage of the total feed *(regardless of who grew it)* for your cows and heifers come from the following *(exclude commercial vitamin and mineral premixes and protein supplements)*? *What percentage is: …?*

	Milking cows %	Dry cows, heifers %
Pasture unfertilized with little alfalfa or other legume	___ 1	___ 2
Pasture fertilized or more than 25% alfalfa or other legume	___ 3	___ 4
Whole corn, fresh or silage	___ 5	___ 6
Cereal silage	___ 7	___ 8
Grain: corn or cereal	___ 9	___ 10
Silage with less than 25% alfalfa or other legume	___ 11	___ 12
Silage with 25% or more alfalfa or other legume	___ 13	___ 14
Hay with less than 25% alfalfa or other legume	___ 15	___ 16
Hay with 25% or more alfalfa or other legume	___ 17	___ 18
Other	___ 19	___ 20
Specify: _____ ❑21		*Specify:* _____ ❑22
	Total must be 100%	**Total must be 100%**

16. During the **cold season** (from November to April), what percentage of the total feed *(regardless of who grew it)* for your cows and heifers come from the following *(exclude commercial vitamin and mineral premixes and protein supplements)? What percentage comes from: …?*

	Milking cows **%**	Dry cows, heifers **%**
Same as warm season	❑1	❑2
Pasture unfertilized with little alfalfa or other legume	☐☐☐3	☐☐☐4
Pasture fertilized or more than 25% alfalfa or other legume	☐☐☐5	☐☐☐6
Whole corn chop/silage	☐☐☐7	☐☐☐8
Cereal silage	☐☐☐9	☐☐☐10
Grain: corn or cereal	☐☐☐11	☐☐☐12
Silage with less than 25% alfalfa or other legume	☐☐☐13	☐☐☐14
Silage with more than 25% alfalfa or other legume	☐☐☐15	☐☐☐16
Hay with less than 25% alfalfa or other legume	☐☐☐17	☐☐☐18
Hay with 25% or more alfalfa or other legume	☐☐☐19	☐☐☐20
Other	☐☐☐21	☐☐☐22
Specify: _____ ❑23	*Specify:* _____ ❑24	
	Total must be 100%	**Total must be 100%**

17. In 2005, did you purchase commercial protein supplement for your <u>milking cows</u>?

Yes .....❑1 ➔ Answer questions 18 to 20

No.....❑2🡻 Go to question 21

18. What was the percentage of crude protein content, on average, in the supplement? *Give the most common.*

☐☐☐1 % crude protein

Do not know ❑2

19. On average, what quantity of commercial protein supplement did you feed your <u>milking cows</u> in a day?

☐☐☐ kg per cow per day1

-------Or----------

☐☐☐ lb per cow per day2

20. What was the target crude protein feeding rate in the total diet for your <u>milking cows</u>? *Give the most common.*

Top-yield cows

☐☐☐ kg per cow per day crude protein1

-------Or----------

☐☐☐ lb per cow per day crude protein2

Lower-yield cows

☐☐☐ kg per cow per day crude protein3

-------Or----------

☐☐☐ lb per cow per day crude protein4

Don't know❑5

21. Which best describes the barn used for your milking herd? *(If there is more than one barn, answer for the largest milking herd barn). Check all that apply.*

Free stall with solid floor alley ..... ❑1

Free stall with slatted floor and manure pit ..... ❑2

Tie stall ..... ❑3

Other, *specify:* _____ ❑4

22. In 2005, what was the average temperature in the barn used for your milking herd? (*If there is more than one barn, answer for the largest milking herd barn). Check all that apply.*

About the same as outdoors ..... ❑1

Warmer than outdoors in summer by: ..... □□ °C2 **---Or---** □□ °F3

Cooler than outdoors in summer by: ..... □□ °C4 **---Or---** □□ °F5

Warmer than outdoors in winter by: ..... □□ °C6 **---Or---** □□ °F7

23. In 2005, what type of ventilation system did you have in your milking herd barn(s)? *Check all that apply.*

Fans switched on automatically with computer ..... ❑1

Fans switched on automatically with thermostat ..... ❑2

Fans switched on manually ..... ❑3

Passive ventilation (side curtains, free air or vent panels) ..... ❑4

Other, *specify:* _____ ❑5

24. Which best describes the method used to remove manure from your dairy barn(s)? *Check all that apply.*

Scraping, such as with a skid steer ..... ❑1

Scraping with barn cleaner chain or shuttle ..... ❑2

Flush with water ..... ❑3

Other, *specify:* _____ ❑4

25. What is the main form of manure you collect *from your milking cows, dry cows and heifers*?

	Milking cows	Dry cows, heifers
Slurry or liquid manure	❑1	❑2
Solid or semi-solid manure with little or no bedding	❑3	❑4
Solid manure with a lot or some bedding	❑5	❑6
None collected	❑7	❑8

26. In 2005, did you use bedding in your barns for your milking cows?

Yes ..... ❑1 ➔Answer questions 27 to 29

No ..... ❑2 ➔ Go to question 30

27. What type of bedding did you use *for your milking cows*?

Check all that apply.

Straw or other crop residue ..... ❑1

Sawdust, wood chips or shavings ..... ❑2

Paper crumb or other forest product ..... ❑3

Sand, gravel or other mineral product ..... ❑4

Other, *specify:* _____ ❑5

28. How often did you add fresh bedding *for your milking cows*? Specify the usual number of days between one addition and the next.

□□□ Days1

29. Usually how thick was it when you removed it?

□□ Centimetres1 **---Or---** □□ Inches2

30. In 2005, did you use <u>bedding</u> in your barns for your <u>dry cows and heifers</u>? Yes .....❑$_1$ ➔Answer questions 31 to 33 No.....❑$_2$🡻 Go to question 34	31. What type of bedding did you use *for your <u>dry cows and heifers</u>*? *Check all that apply.* Straw or other crop residue .. .. ❑$_1$ Sawdust, wood chips or shavings .... ❑$_2$ Paper crumb or other forest product.. .... ❑$_3$ Sand, gravel or other mineral product .... ❑$_4$ Other, *specify:*_____❑$_5$
	32. How often did you add fresh bedding *for your <u>dry cows and heifers</u>*? Specify the usual number of days between one addition and the next. ☐☐☐ Days$_1$
	33. Usually how thick was it when you removed it? ☐☐ Centimetres$_1$ **---Or----** ☐☐ Inches$_2$

34. Approximately how much bedding do you use per year for <u>all</u> your dairy cattle?

☐☐☐☐☐☐ Cubic yards/metres$_1$

--Or--

☐☐☐☐☐☐ Number of large bales$_2$

--Or--

☐☐☐☐☐☐ Number of small bales$_3$

--Or--

☐☐☐☐☐☐ Tonnes *(metric)*$_4$

--Or--

☐☐☐☐☐☐ Tons *(imperial)*$_5$

--Or--

☐☐☐☐☐☐ Other units$_6$

--Or--

Specify units: _____ ❑$_7$

Don't know❑$_8$

35. In 2005, on average, how frequently did you remove manure from your <u>milking herd barns</u>?

Give the most common.

Every day or less .... ❑$_1$

Every few days to a week..... .... ❑$_2$

Every few weeks to a month.... .... ❑$_3$

Less frequently *(every few months or more)* .... ❑$_4$

36. In 2005, on average, how frequently did you remove manure from standing yards?
Answer only if respondent reported ☑ in Box 5 or 6 for Question 9 and Question 10 or 11.

Give the most common.

Every day or less ..... ❑1
Every few days to a week ..... ❑2
Every few weeks to a month ..... ❑3
Less frequently (every few months or more) ..... ❑4

Section 2 – Solid Manure Handling and Storage

Please refer to a normal year

37. Do you store solid manure from your dairy operation?

Yes ..... ❑1 ➔ Please complete Section 2
No ..... ❑2 ➔ Go to Section 3 (page 10)

38. How long do you usually store solid manure collected over **winter**? *(December to March)*

Is it stored …?

Less than 1 month ..... ❑1
From 1 to less than 6 months ..... ❑2
From 6 to less than 12 months ..... ❑3
12 months or longer ..... ❑4
Not stored over winter. ..... ❑5

39. How long do you usually store solid manure collected from **spring to fall**? *(April to November)*

Is it stored …?

Less than 1 month ..... ❑1
From 1 to less than 6 months ..... ❑2
From 6 to less than 12 months ..... ❑3
12 months or longer ..... ❑4
Not stored over spring to fall ..... ❑5

40. How do you usually store solid manure? *Is it …?*

Uncovered outdoor piles or bunkers ..... ❑1
Piles or bunkers covered with tarp or straw ..... ❑2
Piles or bunkers under a roof ..... ❑3
Other storage, *specify:* _____ ❑4

41. Do you put any additives into the solid manure, to modify odour, pH or nutrient retention? Exclude litter.	42. What types of additives do you use? *Specify below:*
Yes ..... ❑1 ➔ Answer question 42	_____ 1
No ..... ❑2 ➔ Go to question 43	_____ 2

43. How do you manage solid manure while it is in storage? *Is it …?*

Not moved or disturbed ..... ❑1
Moved or disturbed once or twice
(e.g. to consolidate a pile or make room for more manure from the barn) ..... ❑2
Routinely and thoroughly mixed or turned *(e.g. to accelerate composting)* ..... ❑3

44. What is the percentage of solid manure handled through each method you use?
What percentage is …?

	%
Spread on land *(by you or someone else)*.....	☐☐☐ 1
Composted *(then spread on land)*	☐☐☐ 2
Removed by contractor *(don't know how it is used)*.....	☐☐☐ 3
Other	☐☐☐ 4
Specify: _____	☐ 5

Total must be 100%

Section 3 – Land spreading of solid manure

Please refer to a normal year

45. Is solid manure from your *dairy operation* spread on land *(spread on any land by the operator or by someone else)*?

Yes.... .....☐1 🡻 Please complete Section 3

No ....☐2 ➔ Go to Section 4 (page 12)

46. When the manure is tilled into the soil, what amount would you estimate is still exposed to the air …?

Less than 25% (such as with moldboard plow). .... ☐1

25% to 50% (such as with disc or chisel plow).. .... ☐2

More than 50% (such as with harrow).. .... ☐3

47. Of the total amount of solid manure from your *dairy operation* applied on land, what percentage is spread on …?

	%	
Tilled crop land (*most crop residue tilled into soil*)	☐☐☐ 1	➔ Answer questions 48 and 49
Reduced till crop land *(most crop residue retained on surface)*	☐☐☐ 2	➔ Answer question 50
Land covered with perennial or forage crops	☐☐☐ 3	➔ Answer question 50
Other	☐☐☐ 4	➔ Go to question 51
Specify: _____	☐ 5	

Total must be 100%

If solid manure is applied on tilled crop land, answer questions 48 and 49. Else go to question 50.

48. Of the total *(solid)* manure applied on tilled soil, what percentage is usually applied each month?

What percentage is spread in: …?

	%
January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

Total must be 100%

All year round at regular intervals ❑13

49. For each period, how many days after spreading is the land usually first tilled? *If for different fields, give most common. (Incorporated same day=0 days).*

	Days
January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

Not applicable *(manure is not incorporated into soil)* ❑13

If solid manure is applied on <u>reduced till,</u> <u>perennial or forage crop land</u>, answer question 50. Else go to question 51.

50. Of the total *(solid)* manure applied on <u>reduced till crop land</u>, <u>perennial or forage crop land</u>, what percentage is applied in each month?

	%
January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

Total must be 100%

All year round at regular intervals ❑13

51. In the past 3 years, has a chemical analysis of the solid manure been done for levels of Nitrogen, Phosphorus, Potassium, micronutrient or moisture content?

Yes..... .....❑$_1$ ➔ Answer question 52

No ....❑$_2$ ➔ Go to question 53

52. What were the lab results? ***(Specify units of measure** and **range** e.g., 45 to 53 kg Nitrogen per tonne or 0.45 to 0.53% nitrate Nitrogen).*

Unit of measure codes:

1 = Kilograms (kg) per (metric) tonne of manure
2 = Pounds (lb) per (imperial) ton of manure
3 = Percentage

Enter range in first eight boxes and enter the decimal point if needed. Enter unit of measure in last box to right e.g.:

0	·	4	5	to	0	·	5	3		3

Lab results (numbers) of chemical analysis:

Moisture content *Unit of measure*

				to						
1					*2*				*3*	

Dry matter content

				to						
4					*5*				*6*	

Total Nitrogen (N)

				to						
7					*8*				*9*	

Ammonium (NH_4)

				to						
10					*11*				*12*	

Phosphorus (P)

				to						
13					*14*				*15*	

53. Do you usually land spread *(solid)* manure at a particular time of day?

Yes ....❑$_1$ ➔ Answer question 54

No, it is spread whenever possible…❑$_2$

➔Go to question 55

54. Is it usually spread between: …?

10 a.m. and 6 p.m. ……..…❑$_1$

6 p.m. and 10 a.m. ……..…❑$_2$

55. Do you land spread manure when the wind speed is …?

Calm, say below 5 km/hour *(a flag might hang or ripple gently at this wind speed)* .... …….. ❑$_1$

Brisk or strong, say about 5 to 9 km/hour *(a flag would fly straight out at this wind speed)* …… ❑$_2$

Any speed, the job gets done whenever it is possible .... …….. ❑$_3$

Section 4 - Handling and storage of liquid manure

Please refer to a normal year

56. Do you store liquid manure (slurry) from your *dairy operation*?

Yes.... .....❑$_1$ ➔ Please complete Section 4

No ....❑$_2$ ➔ Go to Section 5 (page 14)

57. How long do you usually store liquid manure collected over **winter** *(December to March)*? *Is it stored …?*

Less than 1 month ....❑$_1$

From 1 to less than 6 months .. ..❑$_2$

From 6 to less than 12 months ....❑$_3$

12 months or longer.... ....❑$_4$

Not stored over winter. ....❑$_5$

58. How long do you usually store liquid manure collected from **spring to fall**? *(April to November)*
Is it stored …?

Less than 1 month ..... ❑1
From 1 to less than 6 months .. ❑2
From 6 to less than 12 months ..... ❑3
12 months or longer.... ❑4
Not stored over spring to fall.... ❑5

59. Do you separate solids from liquid manure *(slurry)*?	60. What do you use to separate solids from liquid manure?
Yes..... ❑1 ➔Answer question 60 No ..... ❑2 ➔ Go to question 61 Not applicable ❑3 ➔ Go to question 61	Liquid drawn off top of tank ..... ❑1 Settling ponds or weeping walls..... ❑2 Screens .... ❑3 Presses (belt, screw or other) ..... ❑4 Other, *specify*: _____ ❑5

61. Which of the following describes the main *(or largest)* liquid manure storage space you used?

Is it a …?

Tank above ground..... ❑1
Lined or cement pit ..... ❑2
Lagoon or dugout in ground .... ❑3
Other storage, specify: _____ ❑4

62. Is your main *(or largest)* liquid manure storage space …?

Open, so rain might get in ..... ❑1
Covered with a roof..... ❑2

63. On your main *(or largest)* liquid manure storage, is there …?

A floating crust formed by the manure.. ❑1
A floating cover such as a floating lid or tarp .... ❑2
A floating cover such as straw ..... ❑3
No floating cover or crust..... ❑4

64. How do you usually manage liquid manure while it is in storage? *Is it …?*

Not aerated or agitated until just before taken out ..... ❑1
Aerated or agitated up to three times per month..... ❑2
Aerated or agitated four times or more per month ..... ❑3

65. What becomes of liquid manure on your operation? *Is it …?*
Check all that apply.

Spread on land *(by you or someone else)*..... ❑1
Composted *(then spread on land)* ..... ❑2
Removed by contractor *(don't know how it is used)*..... ❑3
Other, *specify*: _____ ❑4

66. What percentage of liquid manure *(from your dairy operation)* is handled through each method you use?
What percentage is …?

	%
Spread on land *(by you or someone else)*.....	☐☐☐ 1
Removed by contractor (*don't know how it is used)*.....	☐☐☐ 2
Other	☐☐☐ 3
Specify: _____	❑4

Total must be 100%

67. Do you put any additives into the liquid manure, to modify odour, pH or nutrient retention? Exclude litter. Yes..... ❑$_1$➔ Answer question 68 No ..... ❑$_2$🡻 Go to question 69	68. What types of additives do you use? _____ 1 _____ 2

69. What are the dimensions of the surface area of your main *(or largest)* liquid manure storage space …?
(*If oval give length and width. If round give diameter in Box 5 or 6*).

☐☐☐☐☐ feet$_1$ by ☐☐☐☐☐ feet$_2$

----------Or----------

☐☐☐☐☐ metres$_3$ by ☐☐☐☐☐ metres$_4$

----------Or----------

(Box 5) ☐☐☐☐☐ diameter in feet$_5$

(Box 6) ☐☐☐☐☐ diameter in metres$_6$

70. What is the depth (*pit capacity*) of your main *(or largest)* liquid manure storage?

☐☐☐☐☐ feet$_1$ **----Or----------** ☐☐☐☐☐ metres$_2$

Section 5 – Land spreading of liquid manure *(slurry)*

Please refer to a normal year

71. Is liquid manure *(slurry)* from your *dairy operation* usually spread on land *(spread on any land by the operator or by someone else)*?

Yes.... .....❑$_1$ 🡻 Please complete Section 5

No ....❑$_2$ ➔ Go to Section 6 (page 18)

72. Of the total amount of liquid manure from your *dairy operation* applied on land, what percentage is spread on …?

%

Tilled crop land (*most crop residue tilled into soil*) ..... ☐☐☐$_1$➔ Answer questions 73 and 74

Reduced till crop land .... ☐☐☐$_2$➔ Answer question 75
(most crop residue retained on surface)

Land covered with perennial crops or forage crops ..... ☐☐☐$_3$➔ Answer question 75

Other .... ☐☐☐$_4$ ➔ Go to question 76

Specify: _____ ❑$_5$

Total must be 100%

*****If applied on tilled land answer questions 73 and 74. Else go to question 75*****

73. Of the total *(liquid)* manure applied on tilled soil, what percentage is usually applied in each month?

What percentage is applied in …?

	%
January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

Total must be 100%

All year round at regular intervals ❑13

74. For each period, how many days after spreading is the land usually first tilled? **If different for different fields, give the most common** (Less than 2 hours = 0 days. From 2 to 24 hours = 0.5 days).

	Days
January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

Not applicable *(manure is not incorporated into soil)* ❑13

*****If applied on <u>reduced till</u> or <u>perennial crop land</u>, answer question 75. Else go to question 76*****

75. Of the total *(liquid)* manure applied on <u>reduced till</u> or <u>perennial crop land</u>, what percentage is applied in each month:

	%
January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	10
November	11
December	12

Total must be 100%

All year round at regular intervals ❑13

76. Do you usually land spread *(liquid)* manure at a particular time of day?	77. Is it usually spread between: …?
Yes..... ..... ❑$_1$ ➔ Answer question 77 No, manure is spread whenever possible❑$_2$ 🡻 Go to question 78	10 a.m. and 6 p.m. ……..... ❑$_1$ 6 p.m. and 10 a.m. ……..... ❑$_2$

78. What best describes the consistency of the liquid manure on your operation?

Runny like water .... ❑$_1$

Pea soup..... .... ❑$_2$

Toothpaste..... .... ❑$_3$

79. What method do you usually use to spread liquid manure*?*

Give the approximate percentage of total liquid manure spread by each method. What percentage is …?

	%
Broadcast over soil surface, over stubble or residue ……..	☐☐☐$_1$
Narrow bands on soil surface such as with drop hoses or a sleighfoot	☐☐☐$_2$
Shallow injected, where some of the manure remains on the soil surface	☐☐☐$_3$
Deep injected, where little of the manure remains on the soil surface	☐☐☐$_4$
Irrigated (e.g. with a pivot gun)	☐☐☐$_5$
Other	☐☐☐$_6$
Specify: _____	❑$_7$

Total must be 100%

80. Does the method you use to spread liquid manure change from season to season?	81. Do you usually …?
Yes..... .... …...❑$_1$ ➔ Answer question 81 No, same method used all year ❑$_2$ 🡻 Go to question 82	Inject in spring or fall, broadcast in summer ❑$_1$ Other, *specify*:_____❑$_2$

82. Do you usually land spread *(liquid)* manure when wind speed is …?

Calm, say below 5 km/hour *(a flag might hang or ripple gently at this wind speed)*……❑$_1$

Brisk or strong, say about 5 to 9 km/hour *(a flag would fly straight out at this wind speed)* ……..❑$_2$

Any speed, the job gets done whenever it is possible..... .... ……❑$_3$

83. In the past 3 years, has a chemical analysis of the liquid manure been done for levels of Nitrogen, Phosphorus, Potassium, micronutrient or moisture content?

Yes..... .....❑$_1$ ➔Answer question 84

No ....❑$_2$ ➔ Go to question 85

84. What were the lab results? ***(Specify units of measure** and **range** e.g., 45 to 53 kg Nitrogen per tonne or 0.45 to 0.53% nitrate Nitrogen).*

Unit of measure codes:

1 = Kilograms (kg) per (metric) tonne of manure
2 = Pounds (lb) per (imperial) ton of manure
3 = Percentage

Enter range in first eight boxes and enter the decimal point if needed. Enter unit of measure in last box to right e.g.:

0	·	4	5	to	0	·	5	3		3

Lab results (numbers) of chemical analysis:

Moisture content *Unit of measure*

				to						
			1					2		3

Dry matter content

				to						
			4					5		6

Total Nitrogen (N)

				to						
			7					8		9

Ammonium (NH_4)

				to						
			10					11		12

Phosphorus (P)

				to						
			13					14		15

Section 6 - Odour management and nutrient conservation

Please refer to a normal year

85. At what stage of your dairy operation's cycle, if any, is the odour of manure stronger than it is **usually**?
Is it more often stronger during …?

Check all that apply.

Barn cleaning..... .... ❑$_1$

Land spreading..... .... ❑$_2$

Agitation of manure . ... ❑$_3$

Mixing or composting .... ❑$_4$

Other, *specify:* _____ ❑$_5$

No differences throughout the year ... . ❑$_6$

*****If no differences in odour throughout the year, go to question 88.*****

86. How many times per year is the odour of manure from your *(dairy)* operation stronger than it is usually?

			Times$_1$

87. Usually, how many days per year does this stronger odour of manure last?

			Days$_1$

88. What is the vegetation within 300 metres (1000 feet) to the **north and west** of your barns?
Check all that apply.

Nothing tall, there are no trees or tall shrubs (nothing taller than corn, for example) ..... ❑1

Shelterbelt with leafed trees that shed leaves in fall ... . ❑2

Shelterbelt with evergreen trees .... ❑3

Woodlot or forest .... ❑4

89. What is the vegetation within 300 metres (1000 feet) to the **south and east** of your barns?
Check all that apply.

Nothing tall, there are no trees or tall shrubs (nothing taller than corn, for example) ..... ❑1

Shelterbelt with leafed trees that shed leaves in fall ... . ❑2

Shelterbelt with evergreen trees .... ❑3

Woodlot or forest .... ❑4

Agreement to share data

Thank you for taking the time to participate in our survey. In order to avoid duplication, Statistics Canada has entered into a data sharing agreement under Section 12 of the Statistics Act with Agriculture and Agri-Food Canada to share responses from this survey. The Department will not be given your name, address or other identifiers and is required to keep the information confidential and use it only for statistical and research purposes.

90. Do you agree to share this information with Agriculture and Agri-Food Canada?

Yes..... ..... ❑1

No .... ❑2

91. Would you like to receive a summary report of the survey results?

Yes.... .....❑1 ➧ Answer question 92

No ....❑2 ➧ Go to section 7

92. What is your e-mail address? Your address will not be shared with any government department.

Enter "MAIL" if the respondent prefers to receive the report by mail.

Please indicate end time of interview:

		:		
1				2

Section 7 - Operator or interviewer comments

❑$_1$ Check if comments are written

Thank you for your cooperation.