2011 FEMS - LIVESTOCK MODULE

1. In 2011, what types of livestock or poultry production did you have on your operation? 
   (Mark all that apply)

   1. Dairy cattle and/or milk production
   2. Beef cattle (cow/calf)
   3. Beef cattle (feedlot or background)
   4. Pork production
   5. Poultry and/or egg production
   6. Other livestock or poultry production, excluding pets
   7. Crops only, no livestock production (Go to Q93)

   Poultry includes broilers, roasters, laying hens, chicks intended for laying, turkeys.

   Other livestock includes bison, sheep, goats, horses, ponies, mink, emus, ducks, roosters, ostriches etc.

   2. Which type of livestock or poultry production contributed most to your gross farm receipts?

   1. Dairy cattle and/or milk production
   2. Beef cattle, including feedlot
   3. Pork production
   4. Poultry and/or egg production
   5. Other livestock or poultry production (please specify): _______________

Section 1: Livestock inventories and buildings

A building is any structure with a roof and some walls that confines or provides protection for livestock in one location. It does not include calf hutchies, portable shelters or windbreaks used in an open field.

An outdoor confined area is an outdoor area where the livestock’s manure deposits are eventually removed offsite and applied to other land (includes pens, corrals).

An open field is one where manure deposited directly by livestock is not removed from the site, although the manure may or may not be spread out by harrowing.

3. In 2011, how many buildings housed on your operation?
   ________ (If Q2 = 1 go to Q4, if Q2 = 2 go to Q24, if Q2 = 3 go to Q49, if Q2 = 4 go to Q62, if Q2 = 5 go to Q75).
4. In 2011, how many milking cows were kept on your operation? 
   _______ (If 0, go to Q9)

5. For how many months of the year were the milking cows typically kept...
   BI02[1] … inside a building? ______
   BI02[2] … in an outdoor, confined area? ______
   BI02[3] … in an open field? ______

6. In 2011, how many milking cows were housed in the largest building?
   _______ (If Q3 = 1, go to Q9)

7. In 2011, how many milking cows were housed in the second largest building?
   _______ (If Q3 = 2, go to Q9)

8. In 2011, how many milking cows were housed in the third largest building?
   _______

9. In 2011, how many dry cows were kept on your operation?
   _______ (If 0, go to Q14)

10. For how many months of the year were the dry cows typically kept...
    BI04[1] … inside a building? ______
    BI04[2] … in an outdoor, confined area? ______
    BI04[3] … in an open field? ______

11. In 2011, how many dry cows were housed in the largest building?
    _______ (If Q3 = 1, go to Q14)

12. In 2011, how many dry cows were housed in the second largest building?
    _______ (If Q3 = 2, go to Q14)
13. In 2011, how many dry cows were housed in the third largest building?
   ________

14. In 2011, how many replacement heifers (more than 1 year old) were kept on your operation?
   ________ (If 0, go to Q19)

15. For how many months of the year were the replacement heifers typically kept…
   B106[1] … inside a building? _____

16. In 2011, how many replacement heifers were housed in the largest building?
   ________ (If Q3 = 1, go to Q19)

17. In 2011, how many replacement heifers were housed in the second largest building?
   ________ (If Q3 = 2, go to Q19)

18. In 2011, how many replacement heifers were housed in the third largest building?
   ________

19. In 2011, how many calves (less than 1 year old) were kept on your operation?
   ________ (If 0, go to Q79)

20. For how many months of the year were the calves typically kept…
   (If Q3 = 0, go to Q91)
21. In 2011, how many calves were housed in the largest building? 
   ________ (If Q3 = 1, go to Q79)

22. In 2011, how many calves were housed in the second largest building? 
   ________ (If Q3 = 2, go to Q79)

23. In 2011, how many calves were housed in the third largest building? 
   ________ (Go to Q79)

24. In 2011, how many beef cows were kept on your operation? 
   ________ (If 0, go to Q29)

25. For how many months of the year were the beef cows typically kept…
   B10[1] … inside a building? _____

26. In 2011, how many beef cows were housed in the largest building? 
   ________ (If Q3 = 1, go to Q29)

27. In 2011, how many beef cows were housed in the second largest building? 
   ________ (If Q3 = 2, go to Q29)

28. In 2011, how many beef cows were housed in the third largest building? 
   ________

29. In 2011, how many calves (less than 1 year old) were kept on your operation? 
   ________ (If 0, go to Q34)
30. For how many months of the year were the calves typically kept…
   BI12[1] … inside a building? _____

31. In 2011, how many calves were housed in the largest building?
   _______  (If Q3 = 1, go to Q34)

32. In 2011, how many calves were housed in the second largest building?
   _______  (If Q3 = 2, go to Q34)

33. In 2011, how many calves were housed in the third largest building?
   _______

34. In 2011, how many steers were kept on your operation?
   _______  (If 0, go to Q39)

35. For how many months of the year were the steers typically kept…
   BI14[1] … inside a building?

36. In 2011, how many steers were housed in the largest building?
   _______  (If Q3 = 1, go to Q39)

37. In 2011, how many steers were housed in the second largest building?
   _______  (If Q3 = 2, go to Q39)

38. In 2011, how many steers were housed in the third largest building?
   _______
39. In 2011, how many heifers (over 1 year old) were kept on your operation? 
   ________ (If 0, go to Q44)

40. For how many months of the year were the heifers typically kept…
   BI16[1] … inside a building? ________
   BI16[3] … in an open field? ________

41. In 2011, how many heifers were housed in the largest building?
   ________ (If Q3 = 1, go to Q44)

42. In 2011, how many heifers were housed in the second largest building?
   ________ (If Q3 = 2, go to Q44)

43. In 2011, how many heifers were housed in the third largest building?
   ________

44. In 2011, how many bulls were kept on your operation?
   ________ (If 0, go to Q79)

45. For how many months of the year were the bulls typically kept…
   BI18[1] … inside a building? ________
   (If Q3 = 0, go to Q91)

46. In 2011, how many bulls were housed in the largest building?
   ________ (If Q3 = 1, go to Q79)

47. In 2011, how many bulls were housed in the second largest building?
   ________ (If Q3 = 2, go to Q79)
48. In 2011, how many bulls were housed in the third largest building?
   ________ (Go to Q79)

49. Are your pigs always kept inside a building?
   1 O Yes
   2 O No

50. In 2011, how many boars were housed in the largest building?
   ________ (If Q3 = 1, go to Q53)

51. In 2011, how many boars were housed in the second largest building?
   ________ (If Q3 = 2, go to Q53)

52. In 2011, how many boars were housed in the third largest building?
    ________

53. In 2011, how many sows and gilts were housed in the largest building?
    ________ (If Q3 = 1, go to Q56)

54. In 2011, how many sows and gilts were housed in the second largest building?
    ________ (If Q3 = 2, go to Q56)

55. In 2011, how many sows and gilts were housed in the third largest building?
    ________

56. In 2011, how many nursing and weaner pigs were housed in the largest building?
    ________ (If Q3 = 1, go to Q59)
57. In 2011, how many nursing and weaner pigs were housed in the second largest building?  __________ (If Q3 = 2, go to Q59)

58. In 2011, how many nursing and weaner pigs were housed in the third largest building?  __________

59. In 2011, how many grower and finishing pigs were housed in the largest building?  __________ (If Q3 = 1, go to Q79)

60. In 2011, how many grower and finishing pigs were housed in the second largest building?  __________ (If Q3 = 2, go to Q79)

61. In 2011, how many grower and finishing pigs were housed in the third largest building?  __________ (Go to Q79)

62. Are your poultry always kept inside a building?
   1 O Yes
   3 O No

63. In 2011, how many broilers, roasters and Cornish hens were housed in the largest building?  __________ (If Q3 = 1, go to Q66)

64. In 2011, how many broilers, roasters and Cornish hens were housed in the second largest building?  __________ (If Q3 = 2, go to Q66)

65. In 2011, how many broilers, roasters and Cornish hens were housed in the third largest building?  __________
66. In 2011, how many pullets under 19 weeks were housed in the largest building?
   _______ (If Q3 = 1, go to Q69)

67. In 2011, how many pullets under 19 weeks were housed in the second largest building?
   _______ (If Q3 = 2, go to Q69)

68. In 2011, how many pullets under 19 weeks were housed in the third largest building?
   _______

69. In 2011, how many laying hens, 19 weeks and over were housed in the largest building?
   _______ (If Q3 = 1, go to Q72)

70. In 2011, how many laying hens, 19 weeks and over were housed in the second largest building?
   _______ (If Q3 = 2, go to Q72)

71. In 2011, how many laying hens, 19 weeks and over were housed in the third largest building?
   _______

72. In 2011, how many turkeys were housed in the largest building?
   _______ (If Q3 = 1, go to Q79)

73. In 2011, how many turkeys were housed in the second largest building?
   _______ (If Q3 = 2, go to Q79)

74. In 2011, how many turkeys were housed in the third largest building?
   _______ (Go to Q79)
75. Are your ^LT03 (other livestock) always kept inside a building?
   1 O Yes
   3 O No

76. In 2011, how many ^LT03 (other livestock) were housed in the largest building?
    __________ (If Q3 = 1, go to Q79)

77. In 2011, how many ^LT03 (other livestock) were housed in the second largest building?
    __________ (If Q3 = 2, go to Q79)

78. In 2011, how many ^LT03 (other livestock) were housed in the third largest building?
    __________

79. How was ventilation controlled in the largest building? (Mark all that apply)
   1 O Forced ventilation
   2 O Passive/natural ventilation (If Q3>1, go to Q83, else go to Q91)
   3 O Other (please specify): ____________________________

   Passive ventilation includes the use of side curtains or vent panels.

80. For your forced ventilation, how was the ventilation rate controlled? (Mark all that apply)
   1 O With fans switched on automatically
   2 O With fans switched on manually
   3 O Other (please specify): ____________________________

81. For your forced ventilation, did you have any of the following? (Mark all that apply)
   1 O Mechanical/conventional filter
   2 O Biofilter
   3 O No filter (If Q3>1, go to Q83, else go to Q91)
   4 O A vegetative buffer outside building (If Q3>1, go to Q83, else go to Q91)

A mechanical filter is a filter made of manufactured or synthetic materials that is installed within the building’s ventilation duct work and exhaust fan system to remove dust and odorous compounds.
A biofilter is a filter made of biological material where bacteria capture and eliminate odorous compounds from livestock building exhaust air.

A vegetative buffer is a row of trees or shrubs along the side of a building where fans exhaust air.

82. How often did you change, clean or service the filter?
   1. Once a month
   2. More than twice a year
   3. Twice a year
   4. Once a year
   5. Less than once a year

83. How was ventilation controlled in the second largest building? (Mark all that apply)
   1. Forced ventilation
   2. Passive/natural ventilation (If Q3>2, go to Q87, else go to Q91)
   3. Other (please specify): ____________________________

84. For your forced ventilation, how was the ventilation rate controlled? (Mark all that apply)
   1. With fans switched on automatically
   2. With fans switched on manually
   3. Other (please specify): ____________________________

85. For your forced ventilation, did you have any of the following? (Mark all that apply)
   1. Mechanical/conventional filter
   2. Biofilter
   3. No filter (If Q3>2, go to Q87, else go to Q91)
   4. A vegetative buffer outside building (If Q3>2, go to Q87, else go to Q91)

86. How often did you change, clean or service the filter?
   1. Once a month
   2. More than twice a year
   3. Twice a year
   4. Once a year
   5. Less than once a year
87. How was ventilation controlled in the third largest building? *(Mark all that apply)*
1. O Forced ventilation
2. O Passive/natural ventilation *(Go to Q91)*
3. O Other (please specify): ____________________________  

88. For your forced ventilation, how was the ventilation rate controlled? *(Mark all that apply)*
1. O With fans switched on automatically
2. O With fans switched on manually
3. O Other (please specify): ____________________________  

89. For your forced ventilation, did you have any of the following? *(Mark all that apply)*
1. O Mechanical/conventional filter
2. O Biofilter
3. O No filter *(Go to Q91)*
4. O A vegetative buffer outside building *(Go to Q91)*  

90. How often did you change, clean or service the filter?
1. O Once a month
2. O More than twice a year
3. O Twice a year
4. O Once a year
5. O Less than once a year
Section 2: Manure and nutrient management

91. Are there wells on your operation?
   1 O Yes
   2 O No

92. Is there surface water on your operation?
   1 O Yes
   2 O No

93. Between fall 2010 and summer 2011, which did you spread more of on your operation: solid manure or liquid or semi-solid manure (e.g. pumpable)?
   1 O Solid manure (Go to Q140)
   2 O Liquid or semi-solid manure
   3 O Spread the same amount of both solid and liquid or semi-solid manure
   4 O Did not spread manure

Liquid or semi-solid manure

94. In 2011, did you store any liquid or semi-solid manure (e.g. pumpable) on your operation?
   1 O Yes
   2 O No (Go to Q140)

95. In 2011, how many liquid or semi-solid manure storage systems were on your operation?
   ________ (If Q95 = 0, go to Q126)

The following questions relate to the three largest liquid or semi-solid manure storage systems on your operation.

Storage system 1: (ask only if Q95 > 0)

96. What type of system is your largest liquid or semi-solid manure storage system?
   1 O Earthen lagoon, pit
   2 O Below-ground tank (outside of building)
   3 O Above-ground tank (outside of building)
   4 O Pit/tank below slats in building
   5 O Other (please specify): ____________________________  LMS04
97. The following question is about the size of your largest liquid or semi-solid manure storage system. Would you like to report the surface area, the diameter, or the length and width?

1. Surface area
2. Diameter
3. Length and width

Surface area: ______________

OR

Length: _______ x Width: _______

OR

Diameter: _______

98. What is the volume of this storage system?

________

1. Imperial gallons
2. Litres
3. Other (specify): ______________

99. What was the depth (at the deepest part) of this storage system?

________

1. Feet
2. Metres
3. Yards

100. What was the storage capacity of this storage system in days, weeks or months?

________

1. Days
2. Weeks
3. Months

101. What was the covering material for this storage system?

1. Straw
2. Crust
3. Tarp
4. Concrete
5. Lid
6. Geomembrane
7. No cover
8. Other (please specify): ______________
102. What material was used for the floor or floor lining of this storage system?
1. O Clay
2. O Steel
3. O Concrete
4. O Geomembrane
5. O Other (please specify): ____________________

103. What material was used for the walls of this storage system?
1. O Clay
2. O Steel
3. O Concrete
4. O Geomembrane
5. O Other (please specify): ____________________

104. What was the distance from this storage system to the nearest well?


105. What was the distance from this storage system to the nearest surface water?


Storage system 2: (ask only if Q95 > 1)

106. What type of system is your second largest liquid or semi-solid manure storage system?
1. O Earthen lagoon, pit
2. O Below-ground tank (outside of building)
3. O Above-ground tank (outside of building)
4. O Pit/tank below slats in building
5. O Other (please specify): ________________________
107. The following question is about the size of your second largest liquid or semi-solid manure storage system. Would you like to report the surface area, the diameter, or the length and width?

1. O Surface area
2. O Diameter
3. O Length and width

Surface area: ______________ 1 O square feet 2 O square metres  LMS10[2]

OR


OR


108. What is the volume of this storage system?

_______ 1 O imperial gallons 2 O litres 3 O other (specify): ______________  LMS17[2]

109. What was the depth (at the deepest part) of this storage system?

_______ 1 O feet 2 O metres 3 O yards  LMS18[2]

110. What was the storage capacity of this storage system in days, weeks or months?

_______ 1 O days 2 O weeks 3 O months  LMS19[2]

111. What was the covering material for this storage system?

1. O Straw
2. O Crust
3. O Tarp
4. O Concrete
5. O Lid
6. O Geomembrane
7. O No cover
8. O Other (please specify): ______________  LMS20[2]
112. What material was used for the floor or floor lining of this storage system?
- O Clay
- O Steel
- O Concrete
- O Geomembrane
- O Other (please specify): ____________________

113. What material was used for the walls of this storage system?
- O Clay
- O Steel
- O Concrete
- O Geomembrane
- O Other (please specify): ____________________

114. What was the distance from this storage system to the nearest well?

________ 1 O metres 2 O feet 3 O yards 4 O miles 5 O kilometres

115. What was the distance from this storage system to the nearest surface water?

________ 1 O metres 2 O feet 3 O yards 4 O miles 5 O kilometres

**Storage system 3: (ask only if Q95 > 2)**

116. What type of system is your third largest liquid or semi-solid manure storage system?
- O Earthen lagoon, pit
- O Below-ground tank
- O Above-ground tank (outside barn)
- O Pit/tank below slats in building
- O Other (please specify): ____________________
117. The following question is about the size of your third largest liquid or semi-solid manure storage system. Would you like to report the surface area, the diameter, or the length and width?

1 O Surface area
2 O Diameter
3 O Length and width

Surface area: ____________  LMS10[3]  1 O square feet  2 O square metres  LMS11[3]

OR


OR


118. What is the volume of this storage system?

_________  1 O imperial gallons  2 O litres  3 O other (specify): _____________  LMS18[3]

119. What was the depth (at the deepest part) of this storage system?

_________  1 O feet  2 O metres  3 O yards  LMS21[3]

120. What was the storage capacity of this storage system in days, weeks or months?

_________  1 O days  2 O weeks  3 O months  LMS23[3]

121. What was the covering material for this storage system?

1 O Straw
2 O Crust
3 O Tarp
4 O Concrete
5 O Lid
6 O Geomembrane
7 O No cover
8 O Other (please specify): _____________  LMS25[3]
122. What material was used for the floor or floor lining of this storage system?
   1 O Clay
   2 O Steel
   3 O Concrete
   4 O Geomembrane
   5 O Other (please specify): ___________________  LMS27

123. What material was used for the walls of this storage system?
   1 O Clay
   2 O Steel
   3 O Concrete
   4 O Geomembrane
   5 O Other (please specify): ___________________  LMS29

124. What was the distance from this storage system to the nearest well?
   _______ 1 O metres 2 O feet 3 O yards 4 O miles 5 O kilometres  LMS31

125. What was the distance from this storage system to the nearest surface water?
   _______ 1 O metres 2 O feet 3 O yards 4 O miles 5 O kilometres  LMS33

126. Which of the following treatments or practices were used for the liquid or semi-solid manure stored on your operation in 2011? (Mark all that apply).
   01 O Aerated or agitated
   02 O Filtered through a marsh or constructed wetland
   03 O Digested in an anaerobic system
   04 O Methane capture
   05 O Mixed with additives to modify odour, pH or nutrient content
   06 O Mixed or turned to accelerate composting
   07 O Processed to separate liquid from solid
   08 O Dried
   09 O Other (please specify): ____________________________  LMS35
   10 O None

An anaerobic digestion system is a manure storage system that is sealed from the atmosphere and actively managed to produce and capture methane gas.
127. What became of the liquid or semi-solid manure that was stored on your operation prior to the 2011 growing season? (Mark all that apply)
1. O Spread on your operation
2. O Removed from your operation (Go to Q140)
3. O Remained in storage in 2011 (Go to Q140)

128. In 2011, what were your two largest crops, by area, grown on land that had liquid or semi-solid manure spread on it?
[We are interested in manure spread between harvest 2010 and summer 2011]

LM02[1] Crop 1: ______________ Other (please specify): ______________

LM02[2] Crop 2: ______________ Other (please specify): ______________

129. What was the area of **Crop 1** that liquid or semi-solid manure was applied to?

_________ 1. O acres 2. O hectares 3. O arpents

130. Which of the following methods were used to apply liquid or semi-solid manure to the land where **Crop 1** was grown in 2011? (Mark all that apply)
1. O Direct injection into the soil (Go to Q132)
2. O Low boom applicator, below crop canopy (e.g. sleighfoot or sidedress) (Go to Q132)
3. O Spread and not worked into the soil (Go to Q132)
4. O Spread and worked into the soil

131. In general, was the liquid or semi-solid manure worked into the soil…
1. O on the same day as it was spread?
2. O 1-2 days after it was spread?
3. O 3-5 days after it was spread?
4. O more than 5 days after it was spread?

132. Thinking of all your liquid or semi-solid manure spread on the land where **Crop 1** was grown, what percent of that manure was applied …
LM08[1]… right after harvest 2010? _______
LM09[1]… during winter? _______
LM10[1]… before crop growth began in 2011? _______
LM11[1]… after crop growth began in 2011? _______
(Percent values for this question should add up to 100)
133. In general, how often is liquid or semi-solid manure applied to the land where \(^{\text{Crop 1}}\) was grown?
   1. More than twice a year
   2. Twice a year
   3. Once per year
   4. Once every two years
   5. Less than once every two years

134. What was the area of \(^{\text{Crop 2}}\) that liquid or semi-solid manure was applied to?
   
   _________  
   1. O acres  
   2. O hectares  
   3. O arpents

135. Which of the following methods were used to apply liquid or semi-solid manure to the land where \(^{\text{Crop 2}}\) was grown in 2011? (Mark all that apply)
   1. Direct injection into the soil (Go to Q137)
   2. Low boom applicator, below crop canopy (e.g. sleighfoot or sidedress) (Go to Q137)
   3. Spread and not worked into the soil (Go to Q137)
   4. Spread and worked into the soil

136. In general, was the liquid or semi-solid manure worked into the soil…
   1. O on the same day as it was spread?
   2. O 1-2 days after it was spread?
   3. O 3-5 days after it was spread?
   4. O more than 5 days after it was spread?

137. Thinking of all your liquid or semi-solid manure spread on the land where \(^{\text{Crop 2}}\) was grown, what percent of that manure was applied …
   LM08[2]… right after harvest 2010? _______
   LM09[2]… during winter? _______
   LM10[2]… before crop growth began in 2011? _______
   LM11[2]… after crop growth began in 2011? _______
   (Percent values for this question should add up to 100)
138. In general, how often is liquid or semi-solid manure applied to the land where Crop 2 was grown?

1. More than twice a year
2. Twice a year
3. Once per year
4. Once every two years
5. Less than once every two years

139. In 2011, was the liquid or semi-solid manure tested for its nutrient content before being applied to the land?

1. Yes
2. No

Solid Manure

140. In 2011, did you produce and/or store solid manure on your operation?

1. Yes
2. No (Go to Q180)

(At this point, the respondent should have answered “yes” for at least one of questions 94 or 140. If the answer to both was “no”, a supplemental question should be asked to determine why manure was not stored or produced on this operation. The answer should be recorded as a comment.)

141. Which type of solid manure storage system did you have on your operation in 2011? (Mark all that apply)

1. Manure on bedding pack in barns (Go to Q142)
2. Manure pack in outdoor pens, corrals or feeding sites (Go to Q145)
3. Piled on ground outside barn (Go to Q151)
4. Pit below slats in livestock building (Go to Q157)
5. Other (please specify): ____________________________

142. Was the manure on bedding packs in barns stored on a concrete or other impermeable pad?

1. Yes, all
2. Yes, some
3. No
143. What was the typical distance of the bedding packs in barns to the nearest well?

__________  1 O feet  2 O metres  3 O yards  4 O miles  5 O kilometres  SMS09[1]

144. What was the typical distance of the bedding packs in barns to the nearest surface water?

__________  1 O feet  2 O metres  3 O yards  4 O miles  5 O kilometres  SMS11[1]

(Go to Q166)

145. Was the manure pack in outdoor pens, corrals or feeding sites stored on a concrete or other impermeable pad?

1 O Yes, all
2 O Yes, some
3 O No

146. Did you have run-off containment for that storage system?

1 O Yes, all
2 O Yes, some
3 O No

147. Was there a roof or cover over the manure pack in outdoor pens, corrals or feeding sites?

1 O Yes, all
2 O Yes, some
3 O No (Go to Q149)

148. What was the covering material?

____________________

149. What was the typical distance of the manure pack in outdoor pens, corrals or feeding sites to the nearest well?

__________  1 O feet  2 O metres  3 O yards  4 O miles  5 O kilometres  SMS09[2]
150. What was the typical distance of the manure pack in outdoor pens, corrals or feeding sites to the nearest surface water?

__________

1 O feet  2 O metres  3 O yards  4 O miles  5 O kilometres

(Go to Q166)

151. Was the manure piled on ground outside barn stored on a concrete or other impermeable pad?

1 O Yes, all
2 O Yes, some
3 O No

152. Did you have run-off containment for that storage system?

1 O Yes, all
2 O Yes, some
3 O No

153. Was there a roof or cover over the manure piled on ground outside barn?

1 O Yes, all
2 O Yes, some
3 O No (Go to Q155)

154. What was the covering material?

____________________

155. What was the typical distance of the manure piled on ground outside barn to the nearest well?

__________

1 O feet  2 O metres  3 O yards  4 O miles  5 O kilometres

156. What was the typical distance of the manure piled on ground outside barn to the nearest surface water?

__________

1 O feet  2 O metres  3 O yards  4 O miles  5 O kilometres

SMS04[3]
SMS05[2]
SMS06[2]
SMS07[2]
SMS08[3]
SMS10[3]
SMS11[2]
157. Was the manure in pits below slats in livestock building stored on a concrete or other impermeable pad?
   1 O Yes, all
   2 O Yes, some
   3 O No

158. What was the typical distance of the manure in pits below slats in livestock building to the nearest well?
   __________ O feet  2 O metres  3 O yards  4 O miles  5 O kilometres

159. What was the typical distance of the manure in pits below slats in livestock building to the nearest surface water?
   __________ O feet  2 O metres  3 O yards  4 O miles  5 O kilometres

160. Was the ^SMS03 stored on a concrete or other impermeable pad?
   2 O Yes, all
   2 O Yes, some
   3 O No

161. Did you have run-off containment for that storage system?
   2 O Yes, all
   2 O Yes, some
   3 O No

162. Was there a roof or cover over the ^SMS03?
   1 O Yes, all
   2 O Yes, some
   3 O No (Go to Q164)

163. What was the covering material?
   ____________________________
164. What was the typical distance of the ^SMS03 to the nearest well?

__________  1 O feet  2 O metres  3 O yards  4 O miles  5 O kilometres  SMS09[5]

165. What was the typical distance of the ^SMS03 to the nearest surface water?

__________  1 O feet  2 O metres  3 O yards  4 O miles  5 O kilometres  SMS11[5]

166. Which of the following treatments or practices were used for the solid manure stored on your operation in 2011? (Mark all that apply)

2 O Mixed with additives to modify odour, pH or nutrients
2 O Mixed or turned to accelerate composting
3 O Added to an anaerobic digestion system
4 O Other (please specify): ____________________________  SMS13
5 O None

167. What became of the solid manure that was stored on your operation prior to the 2011 growing season? (Mark all that apply)

2 O Spread on your operation
2 O Removed from your operation (Go to Q180)
3 O Remained in storage in 2011 (Go to Q180)

168. In 2011, what were your two largest crops, by area, grown on land that had solid manure spread on it?

[NOTE: we are interested in manure spread between harvest 2010 and summer 2011]

SM01[1] Crop 1: ______________  Other (please specify): ______________  SM02[1]


169. What was the area of ^Crop 1 that solid manure was applied to?

__________  1 O acres  2 O hectares  3 O arpents  SM04[1]
170. Which of the following methods were used to apply solid manure to the land where \(^\text{Crop 1}\) was grown in 2011? (Mark all that apply)
1. O Spread and not worked into the soil (Go to Q172)
2. O Spread and worked into the soil

171. In general, was the solid manure worked into the soil…
1. O less than 2 hours after application?
2. O more than 2 hours after application on the same day as it was spread?
3. O 1-2 days after it was spread?
4. O 3-5 days after it was spread?
5. O more than 5 days after it was spread?

172. Thinking of all your solid manure spread on the land where \(^\text{Crop 1}\) was grown, what percent of that manure was applied …
SM07[1]… right after harvest 2010? _______
SM08[1]… during winter? _______
SM09[1]… before crop growth began in 2011? _______
SM10[1]… after crop growth began in 2011? _______
(Note: percent values for this question should add up to 100)

173. How often is solid manure applied to the land where \(^\text{Crop 1}\) is grown?
1. O More than twice a year
2. O Twice a year
3. O Once per year
4. O Once every two years
5. O Less than once every two years

174. What was the area of \(^\text{Crop 2}\) that solid manure was applied to?
_________ 1. O acres 2. O hectares 3. O arpents

175. Which of the following methods were used to apply solid manure to the land where \(^\text{Crop 2}\) was grown in 2011? (Mark all that apply)
1. O Spread and not worked into the soil (Go to Q177)
2. O Spread and worked into the soil
176. In general, was the solid manure worked into the soil…
   1. O less than 2 hours after application?
   2. O more than 2 hours after application on the same day as it was spread?
   3. O 1-2 days after it was spread?
   4. O 3-5 days after it was spread?
   5. O more than 5 days after it was spread?

177. Thinking of all your solid manure spread on the land where \textit{Crop 2} was grown, what percent of that manure was applied …
   SM07[2]… right after harvest 2010? _______
   SM08[2]… during winter? _______
   SM09[2]… before crop growth began in 2011? _______
   SM10[2]… after crop growth began in 2011? _______
   (Note: percent values for this question should add up to 100)

178. How often is solid manure applied to the land where \textit{Crop 2} is grown?
   1. O More than twice a year
   2. O Twice a year
   3. O Once per year
   4. O Once every two years
   5. O Less than once every two years

179. In 2011, was the solid manure tested for its nutrient content before being applied to the land?
   1. O Yes
   3. O No
Section 3: Grazing management

For the following questions, consider the grazing season from spring to fall 2011.

180. Did any of your ^LT02 graze on your operation between spring and fall 2011?
   1 \ O Yes
   3 \ O No (Go to Q195)

181. What was the total area of tame or seeded pasture used by ^LT02 for grazing between spring and fall 2011?
   ___________  1 \ O acres  2 \ O hectares  3 \ O arpents  GR03
   (If Q181 = 0, go to Q188)

The next set of questions has to do with how you typically manage grazing on your tame or seeded pasture. Think about one specific paddock when answering these questions. We suggest you choose the northernmost paddock but you may choose another paddock if you wish.

182. What is the area of the tame or seeded pasture paddock you have chosen?
   ___________  1 \ O acres  2 \ O hectares  3 \ O arpents  GR05
   (If the area changes over time, ask the respondent to report the area of the paddock at its largest.)

183. Do you use temporary fencing on this paddock?
   1 \ O Yes
   3 \ O No

184. What was the average number of ^LT02 grazing in that paddock at one time? Do not include any livestock that have not been weaned.
   ___________
185. Between spring and fall 2011, what was the average length of time that ^LT02 remained in that paddock before moving to another one?

__________ 1 O days  2 O weeks  3 O months

(If the respondent has difficulty answering, ask them to report the length of one grazing cycle.)

186. How often is this paddock used for grazing?

1 O More than three times a year
2 O Three times a year
3 O Two times a year
4 O Once a year
5 O Less than once a year

(If the respondent has difficulty answering, ask them to report the frequency of grazing cycles)

187. What was the grass or forage height on the paddock when the livestock were finished grazing the area in 2011?

__________ 1 O centimetres  2 O millimetres  3 O inches  4 O feet  5 O metres

188. What was the total area of native or natural pasture used by ^LT02 for grazing between spring and fall 2011?

__________ 1 O acres  2 O hectares  3 O arpents

(If Q188 = 0, go to Q195).

The next set of questions is about how you typically manage grazing on your native or natural pasture. Think about one specific paddock when answering these questions. We suggest you choose the northernmost paddock but you may choose another paddock if you wish.

189. What is the area of the native or natural pasture paddock you have chosen?

__________ 1 O acres  2 O hectares  3 O arpents

(If the area changes over time, ask the respondent to report the area of the paddock at its largest.)
190. Do you use temporary fencing on this paddock?
   1. Yes
   2. No

191. What was the average number of ^LT02 grazing in that paddock at one time? Do not include any livestock that have not been weaned.

   ____________

192. Between spring and fall 2011, what was the average length of time that ^LT02 remained in that paddock before moving to another one?

   ____________  1. days  2. weeks  3. months

   (If the respondent has difficulty answering, ask them to report the length of one grazing cycle.)

193. How often is this paddock used for grazing?
   1. More than three times a year
   2. Three times a year
   3. Two times a year
   4. Once a year
   5. Less than once a year

   (If the respondent has difficulty answering, ask them to report the frequency of grazing cycles.)

194. What was the grass or forage height on the paddock when the livestock were finished grazing the area in 2011?

   ____________  1. centimetres  2. millimetres  3. inches  4. feet  5. metres

   (If the respondent has difficulty answering, ask them to report the height of one grazing cycle.)
The following questions are related to all of your grazing land. Consider the late fall 2010 to winter 2011 grazing season (when plants are dormant).

195. Did you have ^LT02 feeding or grazing in an open field setting during late fall 2010 or winter 2011??

O Yes
O No (Go to Section 4)

An open field is one where manure deposited directly by livestock is not removed from the site, although the manure may or may not be spread out by harrowing.

196. How many ^LT02 were in an open field setting between late fall 2010 and winter 2011 (i.e. after the typical grazing season)? (note: for any amount of time in that period)

__________

197. What did they feed or graze on during the late fall or winter season while in an open field setting? (Mark all that apply)

O Residues from harvested annual crops, including stubble, straw, chaff, and weed growth
O Swathed or cut/windrowed crops (e.g. swath grazing)
O Standing dormant vegetation (e.g. forages, standing corn plants, other crops)
O Whole bales of hay or straw (e.g. bale grazing)
O Unrolled bales of hay or straw
O Processed hay, silage, or straw fed on the ground in a windrow or pile
O Processed hay, silage, or straw fed in a trough
O Other (please specify): ______________

(If Q197 = 04, 05, 06 or 07, go to Q198. Otherwise, go to Q199)

198. Which of the following best describes how you manage the feeding of hay, straw or silage in an open field during the late fall or winter season?

O Feed in one area year after year
O Feed in one area for one year, but move to a new area each year
O Feed in different areas within one year and move to new areas each year
O Other (please specify): ____________________________
199. Which of the following methods are used to provide shelter to livestock while in an open field setting during the late fall and winter season? (Mark all that apply)
1 O Natural tree bluffs and wooded areas in field
2 O Planted shelterbelts in field
3 O Stationary windbreaks in field
4 O Portable windbreaks moved to different locations in field
5 O Livestock walk to farmyard for shelter (e.g. farmstead shelterbelt, stationary windbreak, barn)
6 O Other (please specify): ____________________________ GR31
7 O None

200. In 2011, were any pastures or grazing paddocks adjacent to surface water?
1 O Yes
2 O No (Go to Section 4)

201. In 2011, what type of access did grazing livestock have to surface water bodies?
1 O Unlimited year round access (Go to Section 4)
2 O Unlimited access for the entire grazing season (Go to Section 4)
3 O Unlimited access for the winter feeding season (Go to Section 4)
4 O Limited access
5 O No access

202. Which of the following practices were used to restrict access to surface water bodies? (Mark all that apply)
1 O Fencing along shoreline
2 O Remote or offsite water system to a trough
3 O Access ramps for direct watering
4 O Stream crossings
5 O Limited or controlled grazing in riparian areas or adjacent to surface water
6 O Other (please specify): ____________________________ GR35
Section 4: Wildlife damage

The following questions refer to wildlife damage on your operation.

Only ask if dairy cattle selected in Q2

203. In 2011, how many dairy cattle were killed or injured by wildlife?

__________

Only ask if beef cattle selected in Q2

204. In 2011, how many beef cattle were killed or injured by wildlife?

__________

Only ask if pork production selected in Q2

205. In 2011, how many pigs were killed or injured by wildlife?

__________

Only ask if poultry and/or egg production selected in Q2

206. In 2011, how many poultry were killed or injured by wildlife?

__________

Only ask if other livestock selected in Q2

207. In 2011, how many \(^\text{LT03}\) (other livestock) were killed or injured by wildlife?

__________

208. In 2011, were any of the following practices used to reduce the impact of wildlife damage or injury to the livestock on your operation? \((Mark\ all\ that\ apply)\)

01 O Fencing to protect stored feed and livestock
02 O Scaring devices or repellent systems
03 O Shooting or trapping by yourself or others
04 O Night penning near barn
05 O Guardian animals
06 O Other (please specify): ____________________________
07 O No practices done
Section 5: Land and water management practices

The following questions refer to land and water management practices on your operation.

209. In 2011, were any of the following practices used on your operation?

LU01  •  Cover or companion crops
       1  O Yes
       3  O No

LU02  Over what area?  ______________  1  O acres  2  O hectares  3  O arpents  LU03

LU04  •  Winter cover or green manure
       2  O Yes
       3  O No

LU05  Over what area?  ______________  1  O acres  2  O hectares  3  O arpents  LU06

LU07  •  Terracing, contour or across the slope cropping
       3  O Yes
       3  O No

LU08  Over what area?  ______________  1  O acres  2  O hectares  3  O arpents  LU09

LU10  •  Permanent perennial forages on erodible land
       1  O Yes
       3  O No

LU11  Over what area?  ______________  1  O acres  2  O hectares  3  O arpents  LU12

LU13  •  Adding straw to improve soil condition (e.g., mulching)
       2  O Yes
       3  O No

LU14  Over what area?  ______________  1  O acres  2  O hectares  3  O arpents  LU15

LU16  •  Placing eroded soil back on hilltops
       3  O Yes
       3  O No

LU17  Over what area?  ______________  1  O acres  2  O hectares  3  O arpents  LU18
LU22  •  Field shelterbelts/windbreaks
  1  O Yes
  3  O No

LU23  Over what area?  ______________  1  O acres  2  O hectares  3  O arpents  LU24

LU25  •  Surface or sub-surface drainage of land
  1  O Yes
  3  O No

LU26  Over what area?  ______________  1  O acres  2  O hectares  3  O arpents  LU27

LU28  •  Restore or plug previously drained wetlands to natural condition
  1  O Yes
  3  O No

LU29  Over what area?  ______________  1  O acres  2  O hectares  3  O arpents  LU30

LU31  •  Other (please specify):  ____________________________  LU32
  2  O Yes
  3  O No

LU33  Over what area?  ______________  1  O acres  2  O hectares  3  O arpents  LU34

The following questions are about land use changes.

LU38  210. In 2011, what was the total woodland area on your operation?
       ______________  1  O acres  2  O hectares  3  O arpents  LU39

Woodlands include woodlots, tree windbreaks, shelterbelts, bush, forest, shrubs, tree bluffs.

LU40  211. Since 2006, how much of your land area was changed FROM woodland TO pasture or cultivated cropland?
       ______________  1  O acres  2  O hectares  3  O arpents  LU41
212. Since 2006, how much of your land area was changed FROM pasture or cultivated cropland TO woodland?


1 O acres 2 O hectares 3 O arpents

213. In 2011, how much of your land area was changed FROM cultivated cropland TO pasture?


1 O acres 2 O hectares 3 O arpents

214. In 2011, how much of your land area was changed FROM pasture TO cultivated cropland?


1 O acres 2 O hectares 3 O arpents

Wetlands and water management

215. Do you have any cropland on your farm operation? Cropland includes annual field crops for grain, seed or feed, perennial forages for hay, silage or seed, fruits, nuts, vegetables, and potatoes.

1 O Yes 2 O No (Go to Q228)

Seasonal wetlands

216. Were there any seasonal wetlands on your cropland in 2011?

1 O Yes 2 O No (Go to Q220)

Seasonal wetlands normally have water present until mid-summer or early fall and, in most years it is too wet to plant a crop in these areas. Examples include ponds, sloughs, potholes, marshes and treed wet swamps. Don’t consider permanent wetlands.

217. Did you maintain a riparian buffer around or beside the seasonal wetlands?

1 O Yes, all 2 O Yes, some 3 O No (Go to Q220)

A riparian buffer is permanent planted or natural vegetation adjacent to a seasonal or permanent wetland or waterway, extending upslope from the normal shoreline.
218. What type of vegetation was your riparian buffer composed of? *(Mark all that apply)*
   1. Trees
   2. Shrubs
   3. Grasses
   4. Legumes
   5. Other (please specify): ____________________________

219. Was the riparian buffer harvested or left idle?
   1. Harvested, all
   2. Harvested, some
   3. Left idle

**Permanent wetlands**

220. Were there any permanent wetlands on your cropland in 2011?
   1. Yes
   2. No *(Go to Q224)*

*Permanent wetlands* are similar to seasonal wetlands, except they are usually flooded year-round, except for during periods of extreme drought. They also include lakes, reservoirs and dugouts.

221. Did you maintain a riparian buffer around or beside the permanent wetlands?
   1. Yes, all
   2. Yes, some
   3. No *(Go to Q224)*

222. What type of vegetation was your riparian buffer composed of? *(Mark all that apply)*
   1. Trees
   2. Shrubs
   3. Grasses
   4. Legumes
   5. Other (please specify): ____________________________

223. Was the riparian buffer harvested or left idle?
   1. Harvested, all
   2. Harvested, some
   3. Left idle
Waterways

224. Were there any waterways on your cropland in 2011?
   1. Yes
   3. No (Go to Q228)

Waterways are channels that contain flowing water year round or for at least part of the year, usually in spring. Examples include drainage ditches, draws or coulees, grassed waterways, streams, creeks and rivers.

225. Did you maintain a riparian buffer around or beside the waterways?
   1. Yes, all
   2. Yes, some
   3. No (Go to Q228)

226. What type of vegetation was your riparian buffer composed of? (Mark all that apply)
   1. Trees
   2. Shrubs
   3. Grasses
   4. Legumes
   5. Other (please specify): ____________________________

227. Was the riparian buffer harvested or left idle?
   1. Harvested, all
   2. Harvested, some
   3. Left idle

Domestic water

228. In 2011, were there any wells on your operation that are no longer used?
   1. Yes
   3. No (Go to Q230)

229. Have these wells been decommissioned?
   1. All decommissioned
   2. Some decommissioned
   3. None
Energy

230. Do you use or generate any of the following alternative or renewable energy sources on your operation? *(Mark all that apply)*

1. O Solar
2. O Wind
3. O Biogas or methane
4. O Biomass (e.g. wood, crop residue, other organic based fuels)
5. O Hydro electricity generated on your operation
6. O Other (please specify): ____________________________  LU67
7. O None
Section 6: Waste management and hazardous materials

The following questions refer to waste management and hazardous materials on your operation.

231. In 2011, did you store fuel (diesel or gasoline) on your operation?
1. O Yes
3. O No (Go to Q233)

232. Did the fuel storage site have a containment system to handle spills?
1. O Yes
3. O No

233. In 2011, did you store other petroleum products (oil, grease or waste oil) on your operation?
1. O Yes
3. O No (Go to Q235)

234. Did the storage site have a containment system to handle petroleum product spills?
1. O Yes
3. O No

235. In 2011, how was wastewater managed on your operation? (Mark all that apply)
01. O Discharged to a constructed retention or holding pond
02. O Discharged to a septic or sewer system
03. O Discharged into a vegetative filter strip or constructed wetland
04. O Applied to agricultural land by gravity release, pumping, spreading, or irrigation system
05. O Included in the liquid manure system
06. O Collected in holding or storage tank
07. O Other (please specify): ____________________________
08. O Not actively managed. Wastewater removed through natural drainage.
09. O Not applicable/ no wastewater.

Wastewater includes water from cleaning sprayers and other farm equipment, water from washing farm produce, milkhouse, pens or facilities, silage leakage or runoff from livestock pens, etc...
Only ask if dairy cattle selected in Q2.
236. In 2011, how many dead dairy cattle were disposed of using each of the following methods?
WM11[1] ... buried: _______
WM11[2] ... incinerated: _______
WM11[3] ... composted: _______
WM11[4] ... off-farm collection service: _______
WM11[5] ... other: _______ (please specify): _____________________ WM12
(Go to Q240)

Only ask if beef cattle selected in Q2.
237. In 2011, how many dead beef cattle were disposed of using each of the following methods?
WM13[1] ... buried: _______
WM13[2] ... incinerated: _______
WM13[3] ... composted: _______
WM13[4] ... off-farm collection service: _______
WM13[5] ... other: _______ (please specify): _____________________ WM14
(Go to Q240)

Only ask if pork production selected in Q2.
238. In 2011, how many dead pigs were disposed of using each of the following methods?
WM15[1] ... buried: _______
WM15[2] ... incinerated: _______
WM15[3] ... composted: _______
WM15[4] ... off-farm collection service: _______
WM15[5] ... other: _______ (please specify): _____________________ WM16
(Go to Q240)

Only ask if poultry and/or egg production selected in Q2.
239. In 2011, how many dead poultry were disposed of using each of the following methods?
WM17[1] ... buried: _______
WM17[2] ... incinerated: _______
WM17[3] ... composted: _______
WM17[4] ... off-farm collection service: _______
WM17[5] ... added to manure storage: _______
WM17[6] ... other: _______ (please specify): _____________________ WM18
(Go to Q240)
Section 7: Environmental Farm Plan

240. Does your farm have a formal, written environmental farm plan?
   1. Yes, plan is developed
   2. Yes, plan is in development and being reviewed
   3. No (Go to end)

An Environmental Farm Plan is a formal, written overall assessment of environmental issues or concerns related to your operation and can include individual and/or group planning processes.

241. When was this Environmental Farm Plan developed or last updated?
   1. Less than 1 year ago
   2. 1-3 years ago
   3. 4-5 years ago
   4. More than 5 years ago

242. To what extent were the Beneficial Management Practices identified in the action plan of your Environmental Farm Plan implemented on your operation?
   1. Practices fully implemented (Go to Q244)
   2. Practices partially implemented
   3. Practices not implemented

Beneficial Management Practices are practices that improve environmental benefit or reduce environmental risk on farms. These practices may be eligible for funding under environment programs.

243. What is the main reason that you have not implemented the Beneficial Management Practices in your action plan? (Mark only one)
   1. Economic pressures
   2. Lack of time
   3. Lack of information
   4. Don’t accept recommendations
   5. Other (please specify): ____________________________
244. Did you receive any technical assistance from any of the following groups to help implement the Beneficial Management Practices identified in the action plan? *(Mark all that apply)*

- [ ] Government agency
- [ ] Industry (input supplier, processors, etc.)
- [ ] Environmental non-governmental organization (conservation authority, watershed coordinator, etc.)
- [ ] Producer association
- [ ] College/university
- [ ] Environmental Farm Plan advisor
- [ ] Other (please specify): ____________________________
- [ ] No assistance

245. Did you receive any financial assistance to offset costs for implementation of the Beneficial Management Practices identified in your action plan?

- [ ] Yes
- [ ] No

Comments:
______________________________________________________________________________
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THANK YOU FOR YOUR PARTICIPATION