

FARM INVESTIGATION QUESTIONNAIRE

This questionnaire is used in the domestic and imported survey follow-ups and outbreak source investigations. It was developed by CFSAN and ORA for use on investigations of farms implicated in produce associated outbreaks or farms that grew produce that was found positive for pathogens by FDA testing. Attach forms for reporting additional water sources (Form FDA 3623a) and additional sets of workers (Form FDA 3623b) to the primary Farm Questionnaire.

General Information

Name of Farm Owner:

Farm Address:

Phone Number:

Location of Suspect Fields:

1. Date of Farm visit:
2. Outbreak Name/Location/Number:
3. Implicated Food:
4. Agent in Outbreak:
Reservoir(s) for this agent:

5. Planting date for implicated field:
6. Harvest date(s) for implicated field:
7. Interim steps (with dates) between planting and harvest (fertilizing, pesticide applications, irrigation):

8. Other crops/foods raised on this or adjoining fields:

Farm Diagram

9. Obtain or draw a map of the farm layout. Use the farmer's or one you draw to identify any possible sources of contamination on the farm or in close proximity: e.g., slope of the land, type of soil, feedlots, sewage treatment plants, sewage disposal systems/latrines/cesspools, areas that would collect drainage, ponds/streams/rivers/irrigation ditches, water wells, animal grazing/housing, manure storage/composting, accumulations of trash, waste, debris that would attract pests, housing for people. Attach the map to this report. Take photos to further document the layout. Use a geological survey map or global positioning device to describe the longitude and latitude of the suspect field(s).

Take pictures of everything possible related to your investigation.

Weather

10. Were there any unusual weather conditions during the growing or harvesting period, e.g., drought, heavy rains, fog or humidity?..... No Yes
Explain:

Flooding

11. Was the field exposed to flooding any time during the growing or harvesting period? No Yes
If yes, when in relation to harvest:

What was the depth?
How long did the water cover crops:

12. Could heavy rainfall or flooding have contained or spread sewage, manure or other contaminants? No Yes
If yes, list the sources and their distance from the farm:

Manure Management

13. Has animal manure been used for fertilizer within the last year? No Yes

14. What kind of animals is the manure from?
 Cattle
 Swine
 Poultry
 Unknown

15. What/who is the source/supplier?
Name:
Address:

Telephone/Fax:
(Investigator: obtain copies of invoices of manure shipments and attach)

16. What were the delivery dates?
17. What were the application dates?

18. Where was the manure stored prior to application?

19. When is manure applied e.g. before planting (how far), at the time of planting, between planting and harvest?

20. How close to harvest was the last application?

21. Can applied manure blow onto downwind crops? No Yes
Explain:

22. How is manure applied, e.g., topical, side dressing, plowed or disked into the soil?

23. How close is manure/compost stored to crop field?

24. Is it covered to prevent drift or contained to prevent runoff (e.g., manure lagoons)?..... No Yes

The following questions may have to be asked of the manure provider/seller:

25. Is the manure composted? No Yes

26. If manure is composted, for how long and how is the composting managed (e.g., is the manure turned to assure more complete breakdown)?

27. Is manure treated? No Yes

If yes, how was it treated, e.g., composted, heat dried, treated with lime, aged, treated with anaerobic digestion or treated in a waste lagoon?

28. Was the treated manure tested? No Yes

If yes, what was it tested for and what were the findings?

Animal Management

29. Are farm animals or domestic animals, e.g., cattle or dogs, housed or grazed anywhere near the field? No Yes

30. Is there a feed lot or dairy farm within 1 mile of the fields? No Yes

If yes to either question, what animals and how far away? Describe relevant topography (e.g., animal production uphill from fields).

31. Are there fences to keep them out of crops and away from water sources? No Yes

32. Would animal production areas drain into the field or water source? No Yes

If yes, explain:

33. What wild animals have been observed in the area, e.g., deer and other mammals, reptiles, birds.

34. Describe the number of animals and the frequency that they are in the area.

35. Are they excluded or discouraged in any way? No Yes
 If so, how?

36. Is there any evidence of animal feces in the field? No Yes
 Explain:

37. Are amphibians or reptiles (e.g., frogs, snakes, alligators) possible sources of contamination in the field or in agriculture water sources?..... No Yes
 If yes, explain:

38. Are farm animals (e.g., horses, donkeys) used in the fields?..... No Yes

39. Are domestic animals intentionally introduced into crop production areas (e.g., for weed or pest control, to eat residual produce after harvest)? No Yes
 If yes, explain. Include time between animals in production area and subsequent harvest.

40. Are there any relevant health problems in the farm animals? No Yes
 Explain:

Further follow-up animal health may be required with the farmer that owns the animals.

Sewage Use

41. Is human waste used as fertilizer? No Yes

42. Is sewage (sewage sludge or biosolids) used on this crop? No Yes
 If so, where is it from?

43. How was it treated, e.g., composted, heat dried, treated with lime, aged, treated with anaerobic digestion or treated in a waste lagoon?

44. On what crops are the sludge/biosolids used?

45. How close to harvest was it applied?

46. Is recycled (sewage plant treated) water used? No Yes
 If yes, when was it applied?
 How was it applied?

47. Is grey water, e.g., non-human wastewater, used for irrigation?..... No Yes
 If yes, what is the source of the grey water, how is it applied and how close to harvest is it applied?

Treatments/Fertilizers/Pesticides

48. Are chemical fertilizers used? No Yes
49. How many days prior to harvest were the chemicals applied?
50. What crops are treated with chemical fertilizers?
51. How are they applied?
52. Was water used to mix with the chemicals applied? No Yes
If yes, what was the source of the water?
53. Are biological treatments used, e.g., bees for pollination, mites for competitive exclusion, Bacillus thuringiensis for pest control? No Yes
If yes, explain which ones are used, for how long and how close to harvest.
54. Does the farm apply pesticides or herbicides to crops? No Yes
Explain:
55. How are they applied?
 Truck or tractor mounted spray rig:
 Airplane
 Manual spray
 Other
56. What is the water source used for mixing and applying pesticides?
57. How close to harvest are pesticides applied?
58. Are pesticide mixing tanks, mixing paddles and spray tanks clean?..... No Yes
Explain:
59. Where is pesticide equipment stored when not in use, e.g., on ground, protected from contamination?

Harvest Tools and Equipment

60. Harvest method:
 Bare hand Bare hand with utensil (e.g.: knife)
 Gloved hand Gloved hand with utensil
 Automated/machine (no hand contact) Other
 Explain:
61. What tools are used in harvesting the crop, e.g., knives, clippers?
62. Are they designed and constructed to allow for cleaning? No Yes
Explain:

Are they clean? No Yes
Explain:

63. How are they cleaned and sanitized, by whom and how often?

64. Are re-usable harvest containers used? No Yes

65. What materials are they made from?

- Wood
- Plastic
- Cardboard
- Other

66. How are they cleaned before and during use?

67. How and where are they stored when not in use (e.g., on the ground, in a shed)?

68. How is large crop equipment that comes in contact with edible crops cleaned (e.g., blades, chutes and conveyors)?

69. Is harvest equipment leased or contracted out? No Yes
If yes, who is the contractor and what other crops are harvested with this equipment?

70. Answer the equipment design, condition, cleaning and sanitizing questions for this equipment.

71. Is equipment used to haul crops used for other tasks, such as hauling garbage, manure? No Yes
Explain:

72. How is this equipment cleaned prior to use for hauling harvested crops?

73. Are crops washed/processed in the field? No Yes
Explain:

Packing Facility

74. Characterize the size of the operation (e.g., number of employees, stability of work force, season of operation).

75. Draw the packing facility and identify any possible sources of contamination (include location of rest rooms, break areas, storage areas for equipment, chemicals, packaging and personal items).

76. Is the packing equipment designed and constructed and maintained to facilitate cleaning and sanitization? No Yes
Explain:

77. Is the packing equipment cleaned? No Yes
Sanitized? No Yes
If so, how often, using what compounds? Explain:

78. Does the plant recycle water? No Yes

79. Does recycled water flow go from relatively clean to relatively dirty operations? No Yes
Explain:

80. Is the crop cooled? No Yes
How is it cooled (e.g., is a water spray, hydro-cooler, hydro-vac, forced air used)?
Explain:

81. Is water with a disinfectant used in the packing facility? No Yes
Where is it used, what chemical, and how much is used?

82. What residual of disinfectant is in the cooling water at the time of inspection? _____ ppm

83. How was the residual measured?

84. How does the operator monitor disinfectant residual in the process water?

Are records kept of the test findings? No Yes

85. How and how often is the hydro-cooler cleaned?

86. How and how often is the water changed in the hydro-cooler?

87. How and how often is flume water changed?

88. Measure the temperature of the product immediately before it is washed/processed by water.
_____ degrees

89. Measure the temperature of the water when it is used to wash/process produce?
_____ degrees

Record the location where these temperatures were taken:

(For some produce (e.g., tomatoes, celery, apples), it is recommended that the water be 10 degrees F warmer than the product to prevent uptake of the water by the produce.)

90. What is the source of ice used in the packing facility?

91. Is ice produced, stored and used in a sanitary manner? No Yes
Explain:

92. Describe how sewage and wastewater are disposed of.

93. Is there evidence of amphibians, reptiles, insects or other birds inside the packing area? No Yes
Explain, including proximity to product:

94. What is the temperature of product refrigeration rooms? _____ degrees
What is the temperature of product under refrigeration? _____ degrees

95. How long has the product been stored?

Examine the refrigeration rooms for condensate problems, pest control and cleanliness. Findings:

Transportation

96. Are vehicles used to transport produce from the field to the packing facility and from the farm to market also used to transport animals, manure or other sources of contamination? No Yes
Explain:

97. Is someone assigned responsibilities for ensuring trucks are:
clean and sanitary? No Yes
pre-cooled (if appropriate for crop)? No Yes
Is someone aware of previous load hauled? No Yes

98. Are the transport vehicles cleaned and sanitized prior to being used for produce?..... No Yes
Explain:

99. Are the transport vehicles inspected prior to each use? No Yes
Explain:

100. Are the transport vehicles onsite at the time of inspection clean and sanitary? No Yes
Explain:

101. Is the product temperature monitored while the product is being transported?..... No Yes

102. How is product temperature monitored in vehicles transporting the produce from farm to market (e.g., do they use temperature monitoring devices)?

Environmental and Product Sampling

Prior to your visit, determine whether the samples are for regulatory or epidemiological purposes or both. Determine with laboratory, regulatory and epidemiology consultants what should be sampled (e.g., produce, soil, water, workers, food contact surfaces) prior to visiting the farm. Live animals including invertebrates will not ordinarily be collected. However, if investigators receive a request for collection of live animal samples or decide such collection is necessary, they must notify and obtain concurrence from OCM/OEO, ORO, and CFSSAN. Discussions should also cover what tests should be run on samples, who has the expertise to collect and analyze the samples, how the sample findings will be interpreted and what will be done with positive findings. If surface waters are used for irrigation or other product contact use, use Moore swab tests to identify the pathogen.

WATER SOURCES (includes questions 104 through 113)

This section must be completed one time for each water source used for growing, packing, processing or transportation.

If there is more than one water source, you will need additional copies of this section.

- If using MS Word: copy, paste and complete this section for each additional water source.
- If using Adobe PDF: fill out FDA Form 3623a for each additional water source.

Also, complete the appropriate forms referenced below for **each** water source.

Date:

Name and location of source:

How used (e.g., irrigation, cooling and pesticide application)?

In addition, complete the appropriate forms from "Procedures To Investigate Waterborne Illness – Second Edition – 1996," International Association of Milk Food and Environmental Sanitarians Inc., Des Moines, Iowa, for each water source:

- Form G2 – "Record Review of On-site Investigations and Test Results Prior to and During Outbreak"
- Form G3 – "Source and Mode of Contamination of Surface Waters"
- Form G4 – "Source and Mode of Contamination of Ground Waters"
- Form G5a – "Disinfection Failures That Allowed Survival of Pathogens or Toxic Substances"
- Form G5b – "Source of Contamination and Treatment Failures That Allowed Survival of Pathogens or Toxic Substances"
- Form G6 – "Sources and Modes of Contamination During Distribution and at Point of Use"

104. Draw a diagram of the water systems using Form G1 – "Illustration of Contamination Flow."

105. What are the state, local, regional water quality standards for agricultural water?

106. Does the water used on this farm meet the state standard? No Yes

Explain:

107. If this water is used for irrigation, how is it applied (e.g., drip, flood, overhead spray/sprinkler)?

108. Does the agricultural water come in contact with the edible portion of the crop? No Yes
Explain:

109. Has the water been treated? No Yes
If so, explain:

110. Has the water been tested for bacterial contamination/indicators? No Yes

111. What were the test(s) results?

112. When was the test(s) conducted?

113. What lab did the testing?

Attach a copy of the test report.

WORKER HEALTH AND HYGIENE (includes questions 114 through 144)

This section must be completed one time for each set of workers, based on worker type (field or packing facility worker) and location, e.g., field workers at three locations and packing facility workers at two locations would be five sets of workers.

If there is more than one set of workers, you will need additional copies of this section.

- If using MS Word: copy, paste and complete this section for each additional set of workers.
- If using Adobe PDF: fill out FDA Form 3623b for each additional set of workers.

Date:

Location of workers:

Mark the box indicating the type of workers covered:

- Field workers** **Packing Facility workers**

Investigators should speak with local/regional medical/public health officials regarding the following questions:

114. What kind of surveillance and reporting are conducted by local/regional public health authorities for the agent in this outbreak?

Investigators should request copies of summary surveillance reports from the local/regional public health authorities for the agent of concern for the past year or two. This will allow for an evaluation of disease trends.

115. Has there been any enteric disease(s) in the farm workers or their families?..... No Yes
If so, explain what disease(s), and what testing was done:

116. Do workers seek medical attention when they are ill? No Yes
Explain:

Investigators should encourage firms to work with the local public health agency to have workers with enteric diseases tested for the agent of concern. If the local public health agency collected positive clinical isolates from workers for the agent of concern, investigators should collect information available, including contacts that will allow OCM/OEO to coordinate obtaining clinical isolates, for comparison to those of outbreak victims.

117. What is the prevalence/incidence of enteric disease in the community and what agents are involved?

118. Are there cases of the disease under investigation among household contacts of workers? No Yes
Explain:

Ask the following questions at the farm and packing facility.

119. Is there health and hygiene training of workers in their own language? No Yes
Explain:

120. Is there training in sanitation practices for farm workers in their own language? No Yes
Explain:

121. Is there supervisory oversight for worker health/hygiene/sanitation? No Yes
Explain:

122. What toilet facilities are provided for workers (e.g., pit latrines, portable toilets, flush toilets)?
Explain:

123. Does the worker housing area provide toilet facilities? No Yes
and handwashing facilities? No Yes
Explain:

Are the toilets and handwashing facilities clean and supplied with soap, towels, toilet paper?
 No Yes
Explain:

124. Is dirty handwash water collected in a waste tank or sewage system?..... No Yes

125. Does dirty handwash water drain on to the ground? No Yes

126. Are toilet facilities provided convenient for workers in the fields?..... No Yes
 Explain:
- Are workers given time to use the facilities as needed? No Yes
127. Is there any evidence that the toilet facilities are used? No Yes
128. Where are portable field toilets serviced (e.g., emptied)?
129. Is this done in a way that protects crops from contamination? No Yes
 Explain:
130. How is the sewage collected from the holding tanks disposed of?
131. Is there evidence of human feces in or adjacent to the fields? No Yes
 Explain:
132. Are handwashing facilities provided for field workers and are they supplied with water, soap and drying devices? No Yes
 Explain:
133. Is there evidence that workers use the handwashing facilities after they use the toilet? No Yes
 Explain:
134. Is liquid hand sanitizer used in place of handwashing? No Yes
 Explain:
135. Do workers touch the produce with their bare hands? No Yes
 Explain:
136. Do workers wear disposable gloves when touching produce? No Yes
 Who provides them?
 Explain:
137. Are there children in the fields? No Yes
138. Do they come in contact with the produce? No Yes
139. Do they use toilet facilities versus excreting in the fields? No Yes

140. Do they wash their hands? No Yes
Explain:

141. Are diapers used? No Yes
If so, where are they changed and how are the soiled diapers disposed of?

142. Are worker's clothes, including those of mothers of small children, worn in the field or packing facility clean? No Yes
Explain:

143. Do farm workers or other persons frequent the fields at times when they are not working on the crops (e.g., is there loitering in the fields by persons who could contaminate the crops)?..... No Yes
Explain:

144. Do the field or plant workers have animals at home? No Yes
If yes, do they have any relevant health problems? No Yes
Explain: