

Supplementary Material

Microbiological quality of raw vegetables in Ouagadougou: enumeration of *Escherichia coli* and detection of *Salmonella* spp. and antibiotic resistance profiles

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Annex 1. Survey form on agricultural practices of vegetable and fruit producers.

Serial Number : _____

SOCIODEMOGRAPHIC CHARACTERISTICS

Criterion	Categories
District	_____
Neighborhood	_____
Farm Size	☐ 1-Large ☐ 2-Medium ☐ 3-Small
Types of Vegetables Cultivated	☐ 1-Lettuce ☐ 2-Cucumber ☐ 3-Onions ☐ 4-Tomatoes ☐ 5-Others
Types of Fruits	_____
Gender	☐ 1-Male ☐ 2-Female
Age	☐ 1-Less than 30 years ☐ 2-30-45 years ☐ 3-More than 45 years
Nationality	☐ 1-Burkinabè ☐ 2-Non-Burkinabè
Religion	☐ 1-Muslim ☐ 2-Christian ☐ 3-Animist
Education Level	☐ 1-Illiterate ☐ 2-Primary ☐ 3-Secondary ☐ 4-Higher ☐ 5-Others

IDENTIFICATION OF AGRICULTURAL PRACTICES

1. HYGIENE

Question	Answer
(1) Are there sanitary facilities (WC) in your field? If not, where do you relieve yourself?	☐ 1-No ☐ 2-Yes Specify: _____
(2) Are cuts, lesions, and wounds protected by gloves or bandages while working in the field?	☐ 1-No ☐ 2-Yes
(3) Do you have garbage piles in your field?	☐ 1-No ☐ 2-Yes

2. ANIMALS

Question	Answer
(4) Is your field fenced?	☐ 1-No ☐ 2-Yes
(5) Do you have domestic animals in your field? If yes, which ones?	☐ 1-No ☐ 2-Yes Which: ☐ Poultry ☐ Cattle ☐ Pigs ☐ Goats ☐ Sheep ☐ Others

3. WATER

Question	Answer
(6) What is the source of water used for crop irrigation?	☐ 1-Well ☐ 2-Tap water ☐ 3-Ponds ☐ 4-Lagoons ☐ 5-Others: _____
(7) Do you treat this water? If yes, with what products?	☐ 1-No ☐ 2-Yes Products: _____

4. FERTILIZER AND MANURE

Question	Answer
(8) Do you use manure as fertilizer? What type of manure do you use?	☐ 1-No ☐ 2-Yes Type: ☐ Poultry droppings ☐ Cattle manure ☐ Pig manure ☐ Household waste ☐ Others: _____
(9) Do you treat this manure? If yes, by what methods?	☐ 1-No ☐ 2-Yes Methods: ☐ Composting ☐ Exposure to surroundings ☐ Others: _____
(10) Do you spread manure on the crops?	☐ 1-No ☐ 2-Yes

5. HARVEST

Question	Answer
(11) Is the harvesting equipment cleaned and dried?	☐ 1-No ☐ 2-Yes
(12) Do you place vegetables and fruits directly on the ground during harvest?	☐ 1-No ☐ 2-Yes

6. PACKAGING AND TRANSPORT

Question	Answer
(13) After harvest, how do you package fruits and vegetables?	☐ 1-Plastic bags ☐ 2-Basins ☐ 3-Sachets ☐ 4-Others: _____
(14) How do you transport fruits and vegetables to sales locations (markets)?	☐ 1-Shared vehicles ☐ 2-Carts ☐ 3-Wheeled vehicles ☐ 4-On foot ☐ 5- Others: _____

Annex 2. Survey form on vegetable and fruit sales practices in markets.

Serial Number: _____

SOCIODEMOGRAPHIC CHARACTERISTICS

Criterion	Categories
District	_____
Neighborhood	_____
Business Size	☐ 1-Large ☐ 2-Medium ☐ 3-Small
Types of Vegetables Sold	☐ 1-Lettuce ☐ 2-Cucumber ☐ 3-Onions ☐ 4-Tomatoes ☐ 5-Others
Types of Fruits Sold	_____
Gender	☐ 1-Male ☐ 2-Female
Age	☐ 1-Less than 30 years ☐ 2-30-45 years ☐ 3-More than 45 years
Nationality	☐ 1-Burkinabè ☐ 2-Non-Burkinabè
Religion	☐ 1-Muslim ☐ 2-Christian ☐ 3-Animist
Education Level	☐ 1-Illiterate ☐ 2-Primary ☐ 3-Secondary ☐ 4-Higher ☐ 5-Others
Years of Experience	☐ 1-Less than 5 years ☐ 2-5-15 years ☐ 3-More than 15 years

IDENTIFICATION OF SALES PRACTICES

1. CONDITIONS FOR SELLING AND STORING VEGETABLES IN MARKETS

Question	Answer
(1) Upon receipt of vegetables and fruits, how are they packaged?	☐ 1-Wooden crates ☐ 2-Cardboard boxes ☐ 3-Bags ☐ 4-Baskets ☐ 5- Others
(2) Upon receipt, do you wash vegetables and fruits? (Except onions) If yes, what is the source of water?	☐ 1-No ☐ 2-Yes Source: ☐ Tap water ☐ Public toilet water ☐ Others: _____
(3) Are the containers used to hold fruits and vegetables cleaned?	☐ 1-No ☐ 2-Yes
(4) On what surfaces are fruits and vegetables placed for sale? (by observation)	☐ 1-Tables or crates ☐ 2-Ground covered with plastic
(5) Do animal-origin foods come into contact with vegetables? (by observation)	☐ 1-No ☐ 2-Yes
(6) How do you preserve unsold fruits and vegetables at the end of the day?	☐ 1-Room temperature ☐ 2-In refrigerator

2. HYGIENE OF VENDORS

Question	Answer
(7) Do you use public toilets?	☐ 1-No ☐ 2-Yes
(8) Do you wash your hands after using the toilet? If yes, with what product?	☐ 1-No ☐ 2-Yes Product: ☐ Water only ☐ Water + soap ☐ Water + bleach ☐ Other: _____

3. ENVIRONMENT AND HYGIENE OF SALES LOCATIONS (by observation)

Question	Answer
(9) Where is the vendor located in relation to the market?	☐ 1-At the edge of the market public road ☐ 2-Inside the market
(10) In what environment are fruits and vegetables sold?	☐ 1-Clean ☐ 2-Dirty

Annex 3. Survey form on fruit and vegetable salad sales practices in collective catering.

Serial Number: _____

SOCIODEMOGRAPHIC CHARACTERISTICS

Criterion	Categories
District	_____
Neighborhood	_____
Business Size	☐ 1-Large ☐ 2-Medium ☐ 3-Small
Gender	☐ 1-Male ☐ 2-Female
Age	☐ 1-Less than 30 years ☐ 2-30-45 years ☐ 3-More than 45 years
Nationality	☐ 1-Burkinabè ☐ 2-Non-Burkinabè
Religion	☐ 1-Muslim ☐ 2-Christian ☐ 3-Animist
Education Level	☐ 1-Illiterate ☐ 2-Primary ☐ 3-Secondary ☐ 4-Higher ☐ 5-Others
Years of Experience	☐ 1-Less than 5 years ☐ 2-5-15 years ☐ 3-More than 15 years
Use of Fruits and Salads	☐ 1-No ☐ 2-Yes (Do you use fruits and vegetable salads to accompany your dishes?)

IDENTIFICATION OF SALES PRACTICES

1. CONDITIONS FOR PRESERVING FRUITS AND VEGETABLES IN THE RESTAURANT

Question	Answer
(1) How do you preserve fruits and vegetables in the restaurant?	☐ 1-Refrigerator ☐ 2-Room temperature ☐ 3-Other: _____
(2) During storage, do vegetables come into contact with fresh fish, chicken, or other products?	☐ 1-No ☐ 2-Yes

2. WASHING AND DECONTAMINATION OF FRUITS AND VEGETABLES

Question	Answer
(3) Before cutting fruits and vegetables, do you wash them?	☐ 1-No ☐ 2-Yes
(4) Do you disinfect fruits and vegetables? If yes, with what product?	☐ 1-No ☐ 2-Yes Product: ☐ Bleach water ☐ Soapy water ☐ Others: _____
(5) When cutting fruits and vegetables, do you regularly change the rinsing water?	☐ 1-No ☐ 2-Yes
(6) Are vegetables cut in advance and used as they are sold? If yes, where are they stored?	☐ 1-No ☐ 2-Yes Storage: ☐ Refrigerator ☐ Room temperature
(7) Who is responsible for cutting vegetables?	☐ 1-Vendor ☐ 2-Young girl

3. UTENSILS USED FOR CUTTING AND DRESSING

Question	Answer
(8) Is the equipment used for cutting vegetables also used for cutting fish, chicken, or others?	☐ 1-No ☐ 2-Yes
(9) Is the equipment used for dressing regularly cleaned during sales?	☐ 1-No ☐ 2-Yes
(10) What method do you use to serve the dressing?	☐ 1-Bare hands ☐ 2-Protected hands ☐ 3-Ladles/spoons

Annex 4. Survey form for consumers of fruits and vegetable salads in collective catering.

Serial Number: _____

SOCIODEMOGRAPHIC CHARACTERISTICS

Criterion	Categories
District	_____
Neighborhood	_____
Gender	☐ 1-Male ☐ 2-Female
Age	☐ 1-Less than 30 years ☐ 2-30-45 years ☐ 3-More than 45 years
Nationality	☐ 1-Burkinabè ☐ 2-Non-Burkinabè
Education Level	☐ 1-Illiterate ☐ 2-Primary ☐ 3-Secondary ☐ 4-Higher

CONSUMPTION OF FRUITS AND VEGETABLE SALADS

Question	Answer
(1) Are you aware of fruits and vegetable salads?	☐ 1-No ☐ 2-Yes
(2) Do you consume fruits and vegetable salads?	☐ 1-No ☐ 2-Yes
(3) Where do you consume these fruits and salads?	☐ 1-At home ☐ 2-In catering ☐ 3-Others
(4) At what time of day do you consume fruits and salads?	☐ 1-At breakfast ☐ 2-At lunch ☐ 3-At dinner ☐ 4-Others
(5) Do you consume these fruits and salads daily?	☐ 1-No ☐ 2-Yes
(6) If yes, at what frequency?	☐ 1-At most once per week ☐ 2-At least once per week