

Water and Food Safety

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Food Safety Basics for Urban Farmers

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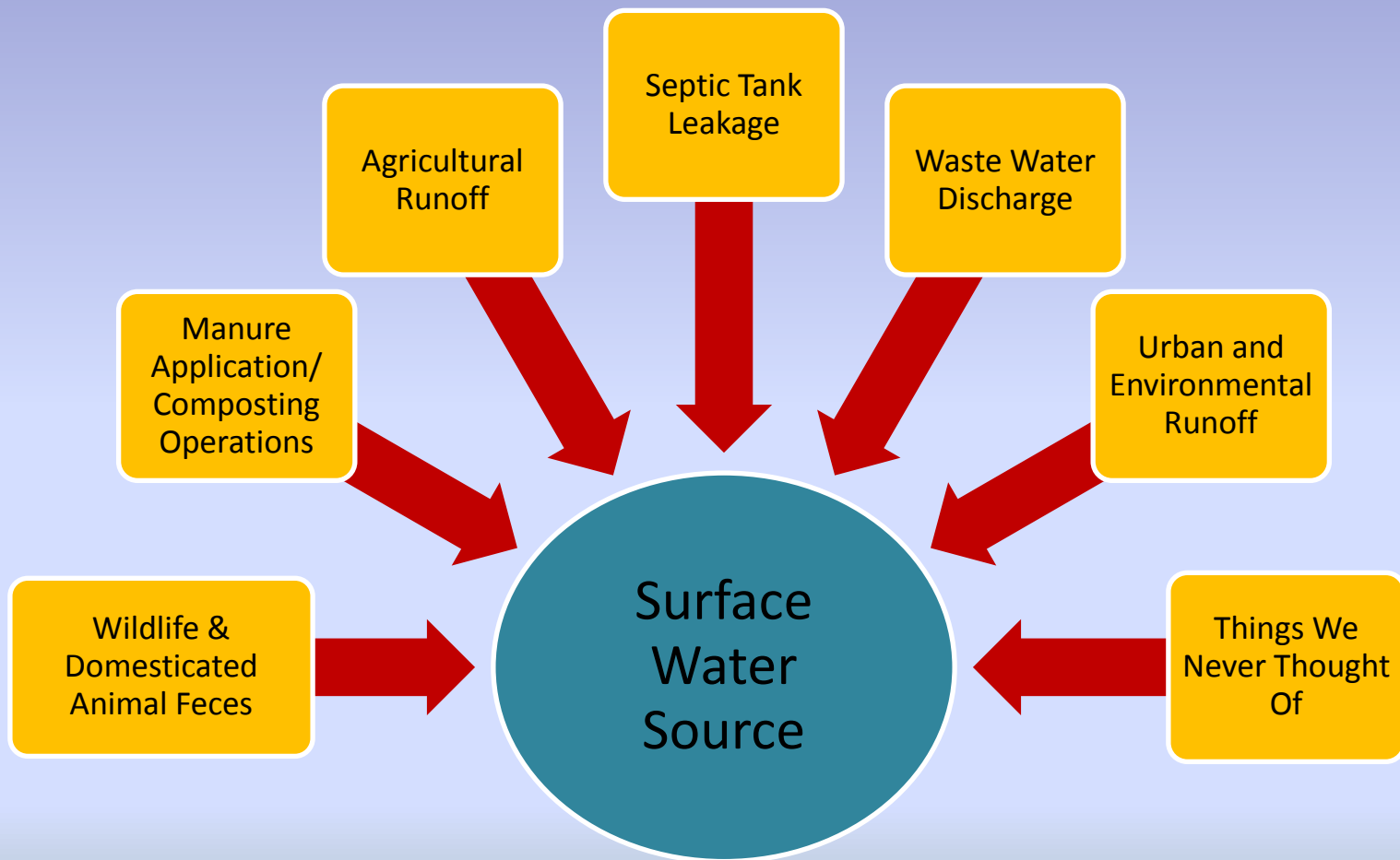
Water-Key Component of Farm & Community Garden Food Safety

- Water provides moisture to crops
 - But it can also carry chemicals and bacteria
- Common Sources of Agricultural Water
 - Municipal sources (treated—lower risk)
 - Wells
 - Surface (rivers, lakes, streams—higher risk)

Water Overview

- Contamination through water
- FSMA Water Standards
- Why municipal water is your best source

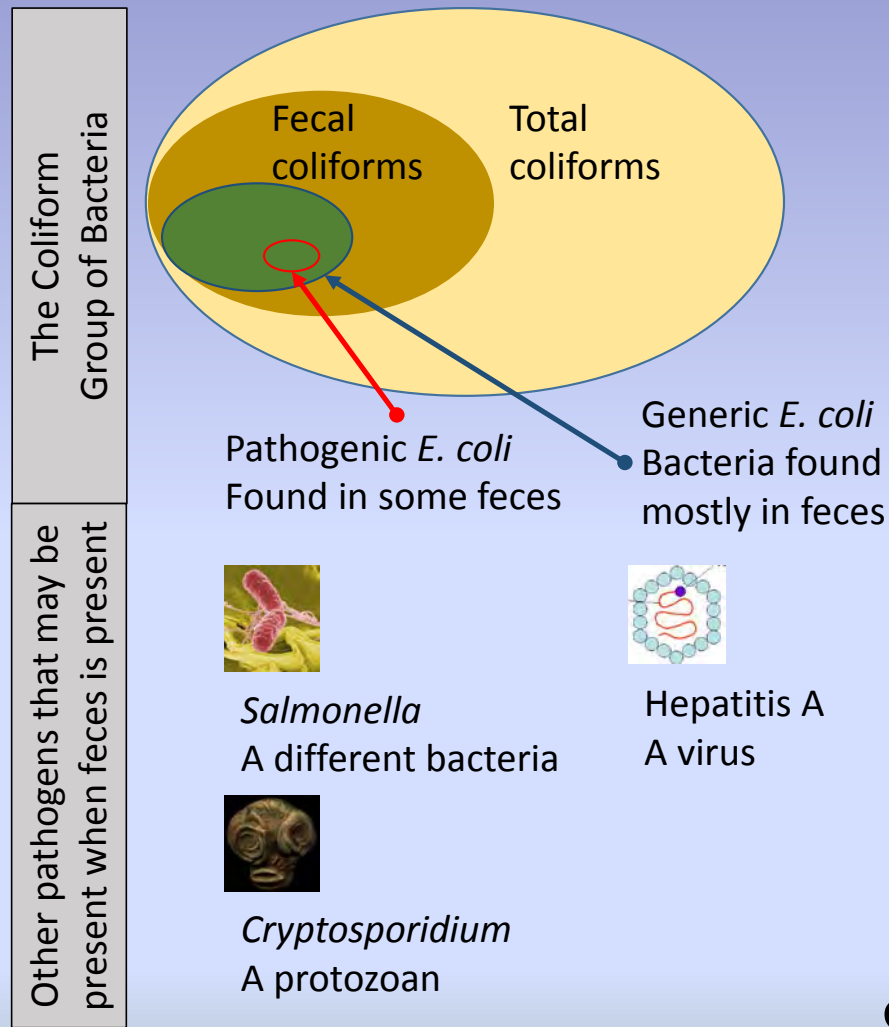
Potential Sources of Surface Water Contamination



*SOURCE: Produce Safety Alliance Train the Trainer, Module 5.1, slide 13

Generic *E. coli* is an Established Indicator

- Generic *Escherichia coli* (*E. coli*) is an indicator of fecal contamination
- *E. coli* is not a direct measure of the presence of human pathogens
- *E. coli* is the indicator used to measure water quality in the FSMA Produce Safety Rule



*SOURCE: Produce Safety Alliance Train the Trainer, Module 5.1, slide 20

FSMA Water Quality Criteria for Water Used During Growing Activities*

- Each source of production water (including captured rainwater) must be tested to evaluate whether its water quality profile meet the following criteria:
 - **126 or less** colony forming units (CFU) generic *E. coli* per 100 mL water geometric mean (GM)
 - AND
 - **410 or less** CFU generic *E. coli* per 100 mL water statistical threshold value (STV)
- This requirement is difficult to understand. However, it basically means that your testing costs will be more than your water cost savings from harvesting rainwater

*SOURCE: Produce Safety Alliance Train the Trainer, Module 5.1, slide 21

FDA Extended Compliance Dates for Ag Water Standards

- FDA extended compliance dates after receiving from stakeholders that some of the requirements are too complex to understand and implement
- Intends to use the extended time period to work with stakeholders as it considers the best approach to address their concerns while still protecting public health
- Extension deadline has not been set

Municipal Water

- US EPA has established Federal drinking water standards and California has similar standards
 - Some are stricter
- Municipal water must be tested annually in California
- Must meet State drinking water standards related to both bacterial

Municipal Water

- Must meet State drinking water standards
- Sacramento County issues an annual water quality report for its drinking water

Download your 2016 Water Quality Chart

<http://www.waterresources.saccounty.net/ccr/Pages/2016-Water-Quality-Reports.aspx>

[Arden Park Vista, Northgate, and Southwest Tract](#)

[Hood, East Walnut Grove, and Delta Estates](#)

[Laguna, Vineyard, Country Creek Estates, and Grantline](#)

[Mather, Sunrise, and Anatolia](#)

Water Testing

to meet Potable Water Standards

- Municipal water is analyzed for bacterial contamination
 - fecal coliforms or Escherichia coli (*E. coli*) whenever total coliforms is indicated
 - Municipal water is also tested for chemical contamination, including chloride, copper, iron, nitrates, zinc, turbidity and total dissolved solids
- If using well water or surface water, it also must be tested for both bacterial and chemical contamination
 - Samples must be draw at the well, before any treatment or filtration
 - Samples can be taken by lab personnel or others if using bottles from the lab and lab's sampling procedures
 - Testing must be done by a California State Approved Lab
 - Include the address or APN of where sample was taken on the lab slip
 - Lab must test using (a) U.S. EPA method 1603 (membrane filtration using modified mTEC) or (b)(1), a method that is at least equivalent to method 1603 in accuracy, precision, and sensitivity or (b)(2) a scientifically valid method for an alternative indicator

Certificate of Analysis

Report Issue Date: 03/21/2012 14:39
Received Date: 03/13/2012
Received Time: 10:42

[REDACTED]
P.O. Box 828
Selma, CA 93662

Lab Sample ID: A2C0852-01

Sample Date: 03/13/2012 10:42

Sample Type: Routine

Sample Control Qualifiers: SC02

Sample Description: Water Canal MID

Sampled by: [REDACTED]

Matrix: Water

Microbiology

Analyte	Method	Result	RL	Units	Batch	Prepared	Qual
<u>E.Coli by 1x10 MTF</u>							
*E. Coli	SM 9221 B/F	>23	1.1	MPN/100 mL	A202592	03/13/12 15:18	

Recycled Water

- Has been treated by municipal system such that it is potable
- Is considered to be same as “municipal water” and can be used for agricultural production

Captured Rainwater

- If capture rainwater is used only to irrigate crops, it does not need to be potable
 - Confirm with your County Environmental Health Dept
- Captured rainwater should be examined weekly
 - prone to rodents, mosquitoes, algae growth, insects and lizards
 - may seep chemicals, insects, dirt or animals droppings
 - Captured rainwater should not be used to wash harvested produce or for handwashing



Drip Irrigation

- Consider using drip irrigation wherever possible. It minimizes the risk of contamination because above-ground plant parts are not directly wetted



CDFA's Small Farm Food Safety Guidelines Related to Water

- Prior to planting, test irrigation water and, if it is contaminated, find the source and fix it or request that your water supplier do so
- During the growing season, test irrigation water as close to point-of-use as possible at least once during the growing season
- Ensure that water used for spray applications of pesticides and fertilizers is not contaminated
- **If you use only municipal water, you do not need to get your water tested so you can ignore the 2 water testing requirements in this slide**

In summary

- Using municipal water for all of your crop production, harvesting and postharvest activities will save you from the hassle and cost of having to get your water tested