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# Reaching Out With the Web: Evaluation of Food Safety Website Quality

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*September 28, 2006*

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# Presentation Overview

- Purpose of research
- Background -- Web Quality
- WQET – an instrument for rating Web sites
  - What makes an effective website -- Quality Factors
  - Good information from effective websites
- Blue Ribbon sites
- Look ahead: User study

Suddenly,  
Everyone's concerned about food safety...



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“For more information, go to the Web.”

- What’s wrong with this statement?

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The Web is becoming the information resource of choice:

Google™



YAHOO!®

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# Everyday Role of the Web

- 60 million adults in America use a search engine on any given day (Rainie & Shermak)
- 49% of those users are looking for health information for another person, and 19% are looking for such information for themselves (Horrigan & Rainie, 2006)

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# Why are we doing this research?

- Answer important questions
  - What is the **quantity** and **quality** of **Web objects** devoted to food biosecurity?
  - How do consumers use websites to learn about food contamination?
- Add to our knowledge about the Web and how people search it.
- Help designers reach intended audiences.

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# What history has taught us...

- In the School of Communication, Information and Library Studies, our focus is:
  - Information retrieval
  - User studies
  - Data and information quality research
  - The ubiquitous nature of the Web.



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# How are we doing this research?

- Examining information about food recalls on the Web.
- Finding “deep” food safety information sites.
- Rating websites for quality.
- Conducting user studies
  - People sit at computers and search for information about food safety and biosecurity.
  - Results are analyzed.
  - Follow-up questionnaire asks about what they learned.

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# Recalls: Salad

- Searched “packaged salad recall” in November, 2005
  - Yahoo had 73,500 total hits, of the first 10 hits,
    - 4 referenced the **September 23, 2005** Dole event
    - 6 referenced **older events** – some with no dates
  - Google had 67,400 total hits, of the first 10 hits,
    - **All** about the **September 23, 2005** event
    - Many were from local news outlets

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# Recalls: Meat

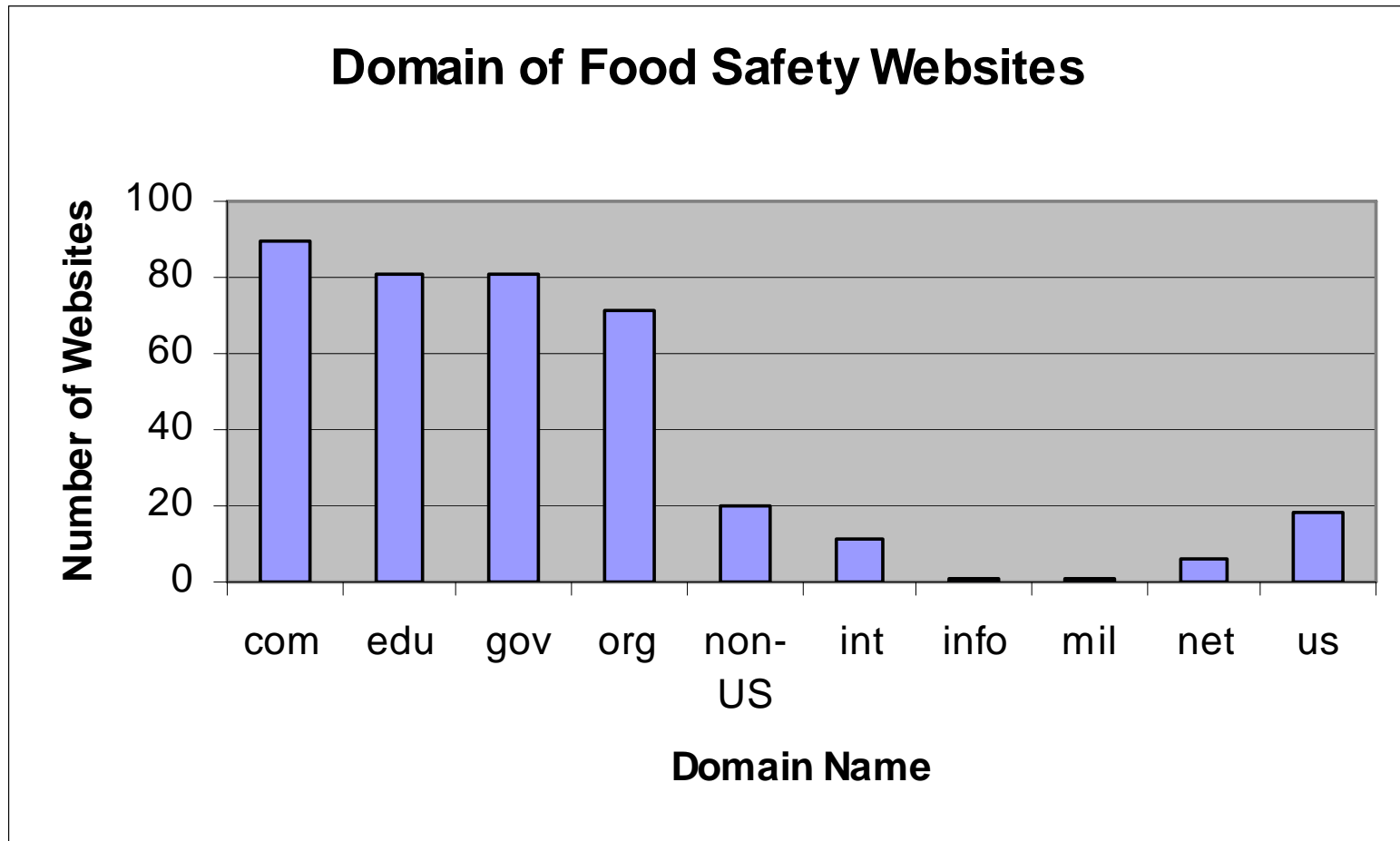
- Searched “meat recall” to track an October 2005 event at Trader Joe’s grocery stores.
  - Yahoo had over 4 million total hits,
    - Of the first 10 hits, **none were relevant** to the **October 2005** event, some referred to events dating as far back as **1998**.
  - Google had 3.8 million total hits,
    - Of the first 10 hits, only one detailed the **October, 2005** event

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# Searching for Websites

- 10 search terms were used, including: food safety, food biosecurity, agroterrorism, bioterrorism, etc.
- Two different search engines were used: Google and Yahoo.
- Researches examined top 20 sites on each search engine for each term.
- Of the **379 Web resources** that were relevant, we found that only 50 that are “deep” enough to be useful to information seekers.

# Domains of entire Sample



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# A good instrument is hard to find.

- Lists of quality characteristics vary but there's consensus about many of them.
- **The Website Quality Evaluation Tool (WQET)**
  - Designed for “deep” Websites.
  - 41 Questions in 2 main categories with 3 subcategories

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# WQET – Categories of Questions

- Presentation of Information
  - Functionality
  - Graphics
  - Style
- Content
  - Content
  - Coverage
  - Authority

# WQET – Paper Version

9/26/2006 © Claire R. McInerney and Nora J. Bird, 2006  
**Web Site Quality Evaluation Tool for Food Safety Project** (06-22-06)

This tool is for Web developers, Web teams, or information professionals who are interested in rating Web sites for trustworthiness and quality. Evaluate the site according to each quality criterion. Rate each category, using a scale of 1-7 (see below).

+	
<b>ID#</b>	
<b>Website URL</b>	
<b>Website Title</b>	
<b>Sponsor</b>	

**Rating Scale:**

<b>1-2</b>	<b>3-4</b>	<b>5-6</b>	<b>7</b>	<b>NA</b>
<b>Poor</b>	<b>Average</b>	<b>Good</b>	<b>Excellent</b>	<b>Not able to assess</b>

Please rate the following characteristics of the website on a scale from 1-7 using the above as a guide. **Excellent = 7** and **NA=Not able to assess**. Evaluate the site by circling the appropriate score.

## A. PRESENTATION OF INFORMATION

### a. Functionality

1. Site loading time.

1   2   3   4   5   6   7   NA   Score \_\_\_\_\_

2. Navigation.

1   2   3   4   5   6   7   NA   Score \_\_\_\_\_

3. Is there a pointer to content (site map, index, directory, search function)?

\_\_\_ yes [(+1)]   \_\_\_no (-1)   \_\_\_not sure (0)   Score \_\_\_\_\_

4. If answer to question 4 is "yes," please rate the quality of this factor.

1   2   3   4   5   6   7   NA   Score \_\_\_\_\_

5. Quality of the information organization structure.

1   2   3   4   5   6   7   NA   Score \_\_\_\_\_

6. Links are live and reliable.

1   2   3   4   5   6   7   NA   Score \_\_\_\_\_

**Total score this section** \_\_\_\_\_





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# What have we found?

- Search engines aren't all the same.
  - For general terms like “food safety” Google and Yahoo do differ.
  - If the searcher uses just one search engine, some sources will not be found.
  
- But many “good sites” are common to both

# Deep Sites Found using both Yahoo and Google

Food Safety	<a href="http://www.foodsafety.gov">www.foodsafety.gov</a>
Food Safety and Inspection	<a href="http://www.fsis.usda.gov">www.fsis.usda.gov</a>
Center for Food Safety	<a href="http://www.centerforfoodsafety.org">www.centerforfoodsafety.org</a>
Partnership for Food Safety	<a href="http://www.fightbac.org">www.fightbac.org</a>
World Health Organization	<a href="http://www.who.int/foodsafety/en/">www.who.int/foodsafety/en/</a>
Organic Consumer Association	<a href="http://www.organicconsumers.org">www.organicconsumers.org</a>
Iowa State University	<a href="http://www.extension.iastate.edu/foodsafety/">www.extension.iastate.edu/foodsafety/</a>
North Carolina Cooperative Extension Service	<a href="http://www.ces.ncsu.edu/depts/foodsci/agentinfo/">www.ces.ncsu.edu/depts/foodsci/agentinfo/</a>
Centers for Disease Control and Prevention	<a href="http://www.cdc.gov.foodsafety/">www.cdc.gov.foodsafety/</a>
Food Safety Consortium	<a href="http://www.uark.edu/depts/fsc">www.uark.edu/depts/fsc</a>

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# Our findings....

- Websites often bury information.
  - The date of a website “publication” is hard to find.
  - Searching often yields a Web “object.”
  - Quality isn’t all about fancy graphics.
  - Trust – credibility – reliability of information is difficult to determine on the Web.
- Searchers
  - Only preliminary results but anecdotally...

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# Do we know “effective” when we see it?

## ■ High-achievers

### □ Iowa State University Extension

- [www.extension.iastate.edu/foodsafety](http://www.extension.iastate.edu/foodsafety)
- 4 coders, range of scores = 149-183

### □ Center for Food Safety

- [www.centerforfoodsafety.org](http://www.centerforfoodsafety.org)
- Range of scores – 137-164

### Food Safety Topics

- [Consumer Information](#)
- [Food Defense](#)
- [Food Irradiation](#)
- [Food Safety Education](#)
- [Food Safety Links](#)
- [Food Safety Resources](#)
- [Food Safety Training](#)
- [Foodborne Pathogens](#)
- [Iowa Food Safety Task Force](#)
- [Resources for Food Processors](#)
- [Español](#)
- [Site Map](#)

### Food Safety RSS Feeds

#### Food Safety News.

[XML](#)

[add to my YAHOO!](#)

[SUB BLOGLINES](#)

#### Newly Added Food Safety Events.

[XML](#)

[add to my YAHOO!](#)

[SUB BLOGLINES](#)

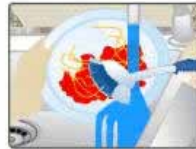
#### Upcoming Food Safety Events.

[XML](#)

[add to my YAHOO!](#)

[SUB BLOGLINES](#)

### Food Safety Presentations



#### View the **Cleaning & Sanitizing** **Food Safety Presentation**

Iowa State University Extension believes that resources are needed for consumers, educators and students to access research-based, unbiased information on food safety and quality. The goal of the Food Safety Project is to develop educational materials that give the public the tools they need to minimize their risk of foodborne illness.

### Food Safety News - September 26, 2006

- **9/21/2006** San Jose Mercury News (California)  
E. coli outbreak reveals lapses in food inspection: Agriculture industry loosely regulated
- **9/21/2006** The Examiner.com - Baltimore (MD)  
5-year-old Harford boy may have contracted E. Coli from spinach
- **9/21/2006** The Monterey County Herald (CA)  
Earthbound suddenly mum about E. coli link to plant
- **9/20/2006** Knight Ridder Tribune  
Tainted spinach outbreak brings calls to boost food safety
- **9/20/2006** Journal Pioneer (Summerside)  
Food safety lecture planned

[-more news-](#)

### Hot Topics

- ISU Extension Food Safety AnswerLine
- Have a food safety question? Ask a food safety expert
- Food Safety and Defense for Food Processors
- NEW Food Safety Presentations
- Avian Flu
- FREE Subscription to Food Safety News
- Norwalk and other norovirus information

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### Food Safety Tip of the Day

Take two.



Cutting boards are one of the most common kitchen items that causes cross contamination. A different cutting board should be used for raw meat, poultry and seafood than is used for preparing ready-to-eat foods like salads and fruits. The produce often is not cooked before being served, so any contaminants will not have a "kill step" prior to consumption.

Source: [Partnership for Food Safety Education](#)

#### Resources:

- [St. Louis County](#)
- [FightBAC!](#)

### Foodborne Pathogen of the Day

- [Listeria monocytogenes](#)

### Food Safety Training Events

- Oct 18, 2006 - Des Moines
- Oct 18, 2006 - Iowa City
- Oct 19, 2006 - Waterloo
- Oct 23, 2006 - Sioux City
- Oct 25, 2006 - Algona
- Nov 14, 2006 - Sioux City
- Nov 14, 2006 - Dubuque
- Nov 15, 2006 - Des Moines
- Dec 20, 2006 - Des Moines
- Jan 24, 2007 - Marion

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File Edit View Go Bookmarks Tools Help

The Center for Food Safety - Ho...




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Center for Food Safety works to protect human health and the environment by curbing the proliferation of harmful food production technologies and by promoting organic and other forms of sustainable agriculture.

**CAMPAIGNS**

- ▶ Genetically Engineered Food
- ▶ Organic and Beyond
- ▶ Food Irradiation
- ▶ Aquaculture
- ▶ rBGH/Hormones
- ▶ Mad Cow Disease
- ▶ Sewage Sludge

What's New

**USDA Urged to Deny Approval of Illegal Genetically Engineered Rice Found in Food Chain - CFS Legal Petition Calls for Banning All "LibertyLink" Rice as Plant Pests**  
[View Executive Summary of Petition](#)  
[View Petition](#)

**California Senate Preserves Local Rules on Genetically Engineered Crops - Senate rebuffs biotech industry-sponsored play to pre-empt local democracy**

**Unapproved, Genetically Engineered Rice Found in Food Supply. USDA and FDA Unaware of Identity, Location or Number of Contaminated Products**

**Court Rules Federal Government Acted Illegally In Permitting Field Trials Of Genetically Engineered (GE) Crops In Hawaii**

**Urgent Actions:**

**Tell FDA to regulate unlabeled and untested engineered nanomaterials in food!**

**Tell USDA NOT to Approve Illegal, GE Rice!**

**Tell Congress to Support Labeling and Safety Testing of GE Foods!**

**Food Uniformity Bill Passes in the House - Contact Your Senators Today!**

**Tell FDA to Rescind its Approval for Irradiated Ground Beef!**

**Stop the Approval of Genetically Engineered Fish!**

**Support CFS:**

Join us by making a tax-deductible gift to further the work of CFS! Your donation helps us take actions to safeguard our food supply and the environment. Click here to support CFS using our secure, online form.

make a  
Donation



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Some sites mean well, but don't measure up.

- Foodsafety.gov
  - [www.foodsafety.gov](http://www.foodsafety.gov)
  - Scores ranged from 85-176



# www.FoodSafety.gov

## Gateway to Government Food Safety Information

<a href="#">News &amp; Safety Alerts</a>		<a href="#">Industry Assistance</a>
<a href="#">Consumer Advice</a>		<a href="#">National Food Safety Programs</a>
<a href="#">Kids, Teens, &amp; Educators</a>		<a href="#">Federal &amp; State Gov't Agencies</a>
<a href="#">Report Illnesses &amp; Product Complaints</a>		<a href="#">Other Topics</a>
<a href="#">Foodborne Pathogens</a>		<a href="#">Search &amp; Site Index</a>
		<a href="#">Videos</a> <a href="#">FAQs</a> <a href="#">Languages</a>

### Selected Highlights

- ◆ [Spinach and \*E. coli\* Outbreak \(FDA\)](#)
  - [Questions & Answers \(FDA\)](#)
  - [E. coli O157:H7 Outbreak from Fresh Spinach \(CDC\)](#)
- ◆ [Produce Safety: Safe Handling of Raw Produce and Fresh-Squeezed Fruit and Vegetable Juices \(FDA\)](#)
- ◆ [September is National Food Safety Education Month®](#)  
[Don't Compromise - Clean and Sanitize](#)
- ◆ [Food Safety Information for Hurricanes, Power Outages, and Floods \(FDA\)](#)
- ◆ [2006 Food Safety Education Conference September 25-29](#)
- ◆ [Food Safety News from CDC / EPA / FSIS / FDA](#)
- ◆ [Partnership for Food Safety Education \(Fight BAC!\)](#)
- ◆ [Food Safety Training and Education Alliance](#)
- ◆ [International](#)

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# What's in store for the future?

- Continue with user studies.
- Work with other researchers – e.g. the “good information” project.
- Build on former project related to GM food.

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# For more information

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# References

- Horrigan, J. & Rainie, L. (2006). When facing a tough decision, 60 million Americans now seek the Internet's help. The Internet's growing role in life's major moments. Pew Internet & American Life Project. Retrieved September 19, 2006 from <http://pewresearch.org/obdeck/?ObDeckID=19>
- McInerney, C. R. & Bird, N. J. (2005). Assessing Website quality in context: Retrieving information about genetically modified food on the Web. *Information Research*. Retrieved August 2, 2005 from <http://InformationR.net/ir/10-2/paper213.html>
- Rainie, L. & Shermak, J. (2005). Search engine use November 2005. *Pew/Internet: PEW Internet & American Life Project*. Retrieved April 5, 2006 from [www.pewinternet.org/](http://www.pewinternet.org/)
- Treise, D., Walsh-Childers, K., Weigold, M. F., & Friedman, M. (2003). Cultivating the science internet audience: Impact of brand and domain on source credibility for science information. *Science Communication*, 24, 309-332.

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# Acknowledgements

Research described here was supported by a grant provided to the Rutgers Food Policy Institute by the U.S. Department of Agriculture (USDA), Cooperative State Research, Education and Extension Service, *Food Biosecurity: Modeling the Health, Economic, Social and Psychological Consequences of Intentional and Unintentional Food Contamination*, Dr. William K. Hallman, Principal Investigator. The opinions expressed in this presentation are those of the author and do not necessarily reflect official positions or policies of the USDA, The Food Policy Institute, or Rutgers University.

Thanks also to our research team Diana Romeo, Sherehan Said, Bo Tian, Cathy Smith, Teresa Keeler, and Andy Kirkyla.