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

Claire McInerney, PhD 
Nora Bird, PhD Candidate 
School of Communication, Information, and Library Studies 
Rutgers, the State University of New Jersey

September 28, 2006
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...
“For more information, go to the Web.”

What’s wrong with this statement?
The Web is becoming the information resource of choice:
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)
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.
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.
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.
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
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
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

Domain of Food Safety Websites

Number of Websites

Domain Name

com | edu | gov | org | non-US | int | info | mil | net | us
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
WQET – Categories of Questions

- Presentation of Information
  - Functionality
  - Graphics
  - Style

- Content
  - Content
  - Coverage
  - Authority
WQET – Paper Version

Web Site Quality Evaluation Tool for Food Safety Project (06-22-06)

This tool is for Web developers, Web teams, and 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).

<table>
<thead>
<tr>
<th>ID</th>
<th>Website URL</th>
<th>Website Title</th>
<th>Sponsor</th>
</tr>
</thead>
</table>

Rating Scale:

| 1-2 | 3-4 | 5-6 | 7 | NA | Poor | Average | Good | Excellent | Not able to assess |

Please rate the following characteristics of the website on a scale from 1-7, using the above as a guide.
Excellent = 7 and Not able to assess = 0.

A. PRESENTATION OF INFORMATION

a. Functionality

1. Site loading time.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | NA | Score |


| 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 feature.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | NA | Score |

5. Quality of 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 ______

FOOD POLICY INSTITUTE
**WQET: Automated Version**

Website Quality Evaluation Tool developed by Claire McInerney, Nora Bird, Cathy Smith, & Bo Tian

Your code

Rutgers, the State University of New Jersey

ID#  

Website URL  
Website Title  
Sponsor  

<table>
<thead>
<tr>
<th>1/2</th>
<th>3-4</th>
<th>5-6</th>
<th>7</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>Average</td>
<td>Good</td>
<td>Excellent</td>
<td>Not able to assess</td>
</tr>
</tbody>
</table>

**A. PRESENTATION OF INFORMATION**  
**a. Functionality**

1. Site loading time  
   1 | 2 | 3 | 4 | 5 | 6 | 7 | NA  
   rate

2. Navigation  
   1 | 2 | 3 | 4 | 5 | 6 | 7 | NA  
   rate

3. Is there a pointer to content (site map, index, directory, search function)?  
   **YES** | **NO** | not sure  
   rate

4. If answer to question 4 is “yes,” please rate the quality of this factor. (Put NA if No.)  
   1 | 2 | 3 | 4 | 5 | 6 | 7 | NA  
   rate

5. Quality of the information organization structure  
   1 | 2 | 3 | 4 | 5 | 6 | 7 | NA  
   rate

6. Links are live and reliable  
   1 | 2 | 3 | 4 | 5 | 6 | 7 | NA  
   rate

**Awarded Total score this section**  
0  
**Possible Total this section**  
36  
**Nas**  
0  

**b. Graphics**

7. Is there animation?  
   **Yes** | **No** | N/A  

8. If the answer to #7 is yes, rate the appropriateness of the animation. (NA if no.)  
   1 | 2 | 3 | 4 | 5 | 6 | 7 | NA  
   rate
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

<table>
<thead>
<tr>
<th>Food Safety</th>
<th><a href="http://www.foodsafety.gov">www.foodsafety.gov</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Safety and Inspection</td>
<td><a href="http://www.fsis.usda.gov">www.fsis.usda.gov</a></td>
</tr>
<tr>
<td>Center for Food Safety</td>
<td><a href="http://www.centerforfoodsafety.org">www.centerforfoodsafety.org</a></td>
</tr>
<tr>
<td>Partnership for Food Safety</td>
<td><a href="http://www.fightbac.org">www.fightbac.org</a></td>
</tr>
<tr>
<td>World Health Organization</td>
<td><a href="http://www.who.int/foodsafety/en/">www.who.int/foodsafety/en/</a></td>
</tr>
<tr>
<td>Organic Consumer Association</td>
<td><a href="http://www.organiconsumers.org">www.organiconsumers.org</a></td>
</tr>
<tr>
<td>Iowa State University</td>
<td><a href="http://www.extension.iastate.edu/foodsafety/">www.extension.iastate.edu/foodsafety/</a></td>
</tr>
<tr>
<td>North Carolina Cooperative Extension Service</td>
<td><a href="http://www.ces.ncsu.edu/depts/foodsci/agentinfo/">www.ces.ncsu.edu/depts/foodsci/agentinfo/</a></td>
</tr>
<tr>
<td>Centers for Disease Control and Prevention</td>
<td><a href="http://www.cdc.gov.foodsafety/">www.cdc.gov.foodsafety/</a></td>
</tr>
<tr>
<td>Food Safety Consortium</td>
<td><a href="http://www.uark.edu/depts/fsc">www.uark.edu/depts/fsc</a></td>
</tr>
</tbody>
</table>
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…
Do we know “effective” when we see it?

- High-achievers
  - Iowa State University Extension
    - [www.extension.iastate.edu/food safety](http://www.extension.iastate.edu/food safety)
    - 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 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, 2008

- 9/21/2008 San Jose Mercury News (California)
  E. coli outbreak reveals lapses in food inspection: Agriculture industry
  loosely regulated
- 9/21/2008 The Examiner.com - Baltimore (MD)
  5-year-old Harford boy may have contracted E. Coli from spinach
- 9/21/2008 The Monterey County Herald (CA)
  Earthbound suddenly mumps 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
Some sites mean well, but don’t measure up.

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

- Spinach and *E. coli* Outbreak (FDA)
  - Questions & Answers (FDA)
  - *E. coli* O145: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
- ...
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.
For more information

Please Contact:

- Prof. Claire McInerney
  clairemc@scils.rutgers.edu

- Ms. Nora J. Bird
  nbird@scils.rutgers.edu
References


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.