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Direct Marketing Local Foods: Food Safety Considerations

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Introduction

This publication provides an overview of the food safety issues relevant to direct marketers of fresh and processed foods, as well as suggestions for establishing food safety controls and increasing consumer confidence in local products. Direct marketers include those agricultural producers involved in selling directly to the public via farmers markets, and roadside stands, as well as those selling to local restaurants and grocery outlets and through community supported agriculture programs (CSAs). A thoughtfully executed food safety management plan, as well as consumer educational and communication efforts, will help ensure the successful implementation or continuation of direct marketing strategies and the availability of fresh local foods for consumers.

Why is food safety important?

Consumers are increasingly concerned about the origin of their food and the conditions in which it is produced or prepared. This concern is fueled by three food industry trends: including rising disposable household incomes, increased food related outbreaks, and a growing separation between agricultural production and consumers. As household incomes rise, consumers are eating more meals away from home and hence, the types of foods used in meal preparation and the ingredients are not completely known to the consumer. Secondly, fewer than 2% of Americans farm for a living and only 17% of Americans live in rural areas (NIFA, 2010). The combination of less involvement in food preparation and lack of experience and knowledge of farming fuels consumer uncertainty regarding food safety and the potential health consequences. Finally, the increased incidence of food related outbreaks (i.e., *Escherichia coli* (E-coli) and *Salmonella*), as well as the unknown potential negative effects of genetically modified crops and the use of antibiotics and hormones in meat, poultry and dairy production additionally promotes consumer uncertainty.

The consumer concerns outlined above are demonstrated in a recent study of farmers' market consumers conducted in Nevada, where survey respondents were asked to rate their level of agreement with 11 personal statements. The strongest levels of agreement occurred with the statements "I am concerned about the safety of my food," "I am concerned about my health/diet," and "I am concerned about the origin of my food." (Cowee, Curtis, and Gatzke, 2009.)

A high proportion of direct marketed local foods are fresh greens, vegetables and fruits. While fresh produce may seem like an unlikely candidate for causing outbreaks of food-borne illness, Klein et al. (2009) use data from the CDC to identify the riskiest regulated food products in the U.S. in terms of food safety violations. They discovered that fresh produce items, including leafy greens, potatoes, tomatoes, sprouts, and berries accounted for 558 food safety outbreaks and nearly 26,000 reported cases of illness from 1990-2008, designating these products as five of the top ten riskiest foods regulated by the U.S. Food and Drug Administration.

Food safety incidents can be very costly and devastating to affected industries. For example in a food safety scare associated with strawberries in 1996, the industry suffered nearly $40 million in lost sales, 5,000 lost jobs, and a 10 percent reduction in crop acreage the following year (Jolly and Lewis, 2005). In order to reduce the incidence of food related outbreaks and to ensure that food safety risk reduction practices are in place, grocery outlets now require food safety plans and record-keeping from their local food vendors. Other requirements may include a certificate of insurance, harvest, packing and transportation methods, farm land use history, and pesticide, fertilizer, and herbicide application records.

What are potential food safety risks?

Food safety risks stem from three primary areas: biological, chemical and physical. Biological risks include certain bacteria, viruses, parasites, allergens, and prions. The most common bacterial risks include *Escherichia coli* (E-coli), *Salmonella* and *Listeria*. A common virus transmitted through food consumption is Hepatitis A. Hepatitis A enters the food chain when an infected individual handles the food product during food preparation or harvesting. Parasites commonly causing food borne illnesses include *Giardia lamblia* and *Cyclospora cayetanensis*.

Prions are naturally occurring proteins found in a group of diseases named Transmissible Spongiform Encephalapathies (TSEs) (Jolly and Lewis, 2005). Examples of TSEs include bovine spongiform encephalopathy (BSE) also known as Mad Cow disease and its human counterpart variant Creutzfeldt-Jakob disease (vCJD).

Peanuts, tree nuts, wheat, soybeans, milk, eggs, and fish account for 90% of food allergies and all food products containing these items should be labeled. Sulfites found in dried fruits and wines are also a primary cause of allergies (Jolly and Lewis, 2005).

Chemical risks stem from pollution of air, water, and soil, and application of agrochemicals. Pollution may contain toxic metals and dioxins. The application of agrochemicals such as pesticides, fertilizers, and herbicides to crops may cause adverse health consequences after food consumption. The Environmental Protection Agency (EPA) sets tolerance levels, the maximum legal limits for pesticide and other agrochemical residues on food commodities. EPA levels assume that each pesticide is applied at the maximum rate allowed by the label, the maximum number of application is made and only the minimum permissible interval is allowed between applications. Scientists find the safe daily intake level and then build in a 100-fold plus margin of safety. If the maximum possible exposure to a chemical is less than the legal residue level, the EPA grants a tolerance (Bessin, 2003).

Physical risks include choking, lacerations to the mouth, hands, etc., and food damage. Objects that may enter the food system include stones, small sticks, bits/pieces of wood, plastic, metal, or glass, equipment fragments, and employee objects such as pens, pencils, and jewelry. Hence, food processing facilities often require employees to be free of pens, jewelry and other personal items before entering.

What can be done to manage food safety?

Food Safety Management Plans

Developing a food safety management plan will enable producers to access direct markets, as well as manage the safety component of their operation by organizing the action steps identified as key to reducing those risks. Documentation and record-keeping of current practices and any changes implemented over time allows for monitoring and continued improvement of food safety measures.

In 1998 the FDA & USDA published farm level voluntary 'guidelines' for food safety management called Good Agricultural Practices or GAPS. Although the program is voluntary, consumer and industry calls for a certification program prompted the implementation of an auditing program based upon the GAP guidelines. Producers can be certified, but they must pay for the audit of their production practices, which includes the auditor's time and mileage (federal rate of $92/hour). Additionally, each crop must be certified through a separate audit.

The USDA GAP standards include food safety risk controls and/or management suggestions for the following sections of the food chain.

- Crop irrigation water
- Manure and municipal bio solids
- Worker health and hygiene
- Field and harvest sanitation
- Postharvest water during packing
- Transportation
- Storage and distribution

The risk controls and management suggestions (referred to as guiding principles) are outlined in the USDA Good Agricultural Practices & Good Handling Practices Audit Verification Checklist, which is used by federal auditors when conducting inspections.

Another option may be a state or local food safety certification program. For example a private food safety certification program was initiated in California under the name Leafy Greens Marketing Agreement (LGMA). This program was established due the spinach E-coli outbreak in 2006. It is now mandatory for most leafy green growers in California, but producers in Arizona and Nevada also participate.

Labeling and Certification Programs

The use of product labels and/or participation in certification programs is another way to inform consumers regarding farm production and safety procedures. There are three primary types of labeling; studies have shown that consumers are willing to pay more for products with these labels (Nilsson, Foster, and Lusk, 2006; Grannis and Thilmany, 2002). The first is a product label specifying food production system or specific breed/style used. These most often include organic, natural, grass-fed, and hormone free. The second is a product label specifying food origin (local foods), such as the state, region, valley, country in which the product was produced. Popular examples include Kona Coffee, Oregon Grown, and Utah's Own. Country of origin labeling is required for retailers of all fresh and processed produce. The third type of labeling is specific to food safety, potentially including "antibiotic free", or USDA food safety inspected/GAP certified.

Labeling and certifications can be accomplished through first party (also referred to as "branding") or through a third-party certification program. Third-party certification programs allow producers to enter a recognized market using an established

umbrella program or label. The label on certified products provide consumer assurance that products meet certain "extra-sensory" or production/process attributes and the third-party certification implies that certifying party does not directly benefit from sale of the good. Examples include USDA Organic, Certified Angus Beef, and Fair Trade Coffee.

Third-party certification program functions often include (WEMC, 2006):

- Standard setting: setting a specific quality level and using well defined consumer known terminology.
- Testing/Inspection: setting objective quality measures and record-keeping requirements for such things as pesticide application rates, use of GM ingredients, hormones, etc.
- Certification: providing labels and signage to certified producers.
- Enforcement: continued testing and inspection and setting fines/penalties for fraud.

First-party or self-certification includes direct claims made by a firm about its product such as "Healthy," "Homegrown," "Nature's Best," and "pasture-raised." Self-certification requires no generally accepted standards, but firms are still held to "truth-in-labeling laws." Studies show that consumers may prefer first-party claims as personal relationships and trust develop over time (WEMC, 2006).

To determine whether first or third-party certification is appropriate it is suggested that producers conduct a cost-benefit analysis. Benefits of third-party certification may include higher product pricing, increased market access, and price stabilization. Costs might include the price of attaining certification, production process changes, record-keeping costs, and brand design and marketing. The comparison should include a reasonable multi-year time horizon (WEMC, 2006).

Consumer Education/Events

Direct marketers may also provide information on their production and food safety practices through the use of brochures, signs, and marketing materials. These materials might describe the product's nutritional benefits, special farm production methods, on-farm food safety procedures, and other socially responsible or sustainable methods. Educational newsletters and programming may also be helpful. Events might include:

- Safe handling, storage and washing of fresh fruits/vegetables.
- Safe handling and storage of meat/poultry.
- Cooking classes with minimum cooking times and temperatures.
- Handling/storage of processed foods.
- Home gardening/production methods.

Conclusions

As shown, food related illness and outbreaks can be devastating to an industry and lead to consumer apprehension. Recent increased consumer demand for local foods resulting from food safety and health concerns provides an excellent market opportunity for local producers. However, to maintain and expand this market, producers will need to establish food safety plans for their enterprises and provide information regarding their good agricultural practices to their customers, perhaps through labeling programs and/or newsletters, brochures, and educational events.

References

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Grannis, J. and D. Thilmany (2002). Marketing Natural Pork: An Empirical Analysis of Consumers in the Mountain Region. Agribusiness 18(4): 475-489.

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National Institute for Food and Agriculture (NIFA) (2010). About Extension. Available at http://www.csrees.usda.gov/qlinks/extension.html.

Nilsson, T., K. Foster, and J. Lusk (2006). Marketing Opportunities for Certified Pork Chops. Canadian Journal of Agricultural Economics 54(4):567-583.

Western Extension Marketing Committee (WEMC) (2006). Certification and Labeling Considerations for Agricultural Producers. University of Arizona Cooperative Extension Publication 1372 available at http://www.valueaddedag.org.

Resources

For more information on food safety risks and preventative strategies see:

1. D. Jolly and C. Lewis (2005). Food Safety at Farmers Markets and Agritourism Venues: A Primer for California Operators. Publication of the UC Small Farm Center available at http://sfp.ucdavis.edu/farmers_market/safety/.
2. Good Agricultural Practices: A Self-Audit for Growers and Handlers. Publication,UC Davis at http://ucce.ucdavis.edu/files/filelibrary/5453/4362.pdf.
3. Good Agricultural Practices Network, Cornell University at http://www.gaps.cornell.edu.
4. Small food business safety programs, e.g., good manufacturing practices, sanitation, and HACCP, Utah State University at http://foodsafety.usu.edu.

For more information on labeling programs and specialized production processes see:

1. FDA Labeling & Nutrition at http://www.fda.gov/Food/LabelingNutrition/default.htm.
2. National Organic Program & Farmers' Markets at http://www.ams.usda.gov.
3. Utah's Own at https://utahsown.utah.gov/.

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