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Marsha L. Thadison

Yesterday's Kitchen 4 Today, info@yesterdayskitchen4today.com

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Reflections and Commentaries

FERMENTED FOOD: PUTTING THE POWER OF GOOD HEALTH BACK INTO THE HANDS OF THE PEOPLE

Marsha L. Thadison¹

¹Yesterday's Kitchen 4 Today, LLC

Email: info@yesterdayskitchen4today.com

Editors' Note: At the December 2013 Professional Agricultural Workers Conference, several women were invited to share information about their unique businesses. One such presenter was Marsha L. Thadison, owner of Yesterday's Kitchen 4 Today, a company that focuses on promoting functional foods. Thadison shared that food is produce and consumed differently from previous generations. Today's food, she argued, involves many more agricultural inputs that aid in food preservation, extension of shelf life, and promotion of animal health. She espoused the benefits of fermented food.

Keywords: Functional Foods, Fermented Foods, Health, Antibiotics, Probiotics

Introduction

The food that is produced and consumed today is different from what previous generations grew and ate. Today's food is grown with many more agricultural inputs that aid in food preservation, extending shelf life, and promoting animal health. Consequently, there has been an increased use of antibiotics in animal production, and use of synthetic chemicals, such as pesticides and herbicides, in food preservation and agricultural production. As a result of the perceived connection between these chemicals and human health, many consumers search for alternatives to foods produced with antibiotics and synthetic chemicals. Hence, the rise in the production and consumption of organic foods as well as "functional foods" (or health functional foods – these include fermented foods which contain probiotics). These functional foods are believed to have an impact on health beyond their nutritive value, such as reduced risk of cancer, enhanced digestion, improved cholesterol levels, etc.

Various cultures, throughout history, have used food for its perceived medicinal powers, and consumers' increased awareness of the link between food and health has increased the desire for functional foods globally (Yong, 2012; Soomro et al., 2002; Hasler, 2014). In fact, the global market for health functional foods has steadily grown at a rate of 10% annually, and the U.S. functional food market has grown 6% annually (Kang, 2011). The rate of increase in chronic diseases and the heightened consumer awareness of the link between health and food have driven the rise in demand for these products worldwide (Yong, 2012; Kang, 2011). Food production practices have also driven consumer demand for these products – practices that include use of antibiotics and synthetic chemicals. The objective of this paper is to identify the benefits of functional foods, specifically fermented foods, for human health.

Antibiotics and their Effect on Human Health

Because bacterial infections are the root of many diseases that adversely affect human health, antibiotics are a technology that has had extremely positive implications for human health through its anti-bacterial properties. Antibiotics are important for human health as they control the growth of or kill harmful bacteria in the body. The word antibiotic was first used in 1941 to describe any small molecule made by a microbe that interferes with the growth of other microbes (Clardy et al., 2009). The history of antibiotics began before the production of the arguably most well-known antibiotic, penicillin, which is produced by a fungus. The introduction of penicillin and other antibiotics such as streptomycin, which is produced by soil bacteria, during the mid-twentieth century, marked the beginnings of the so-called “antibiotic age” (Clardy et al., 2009). Since the inception of this age, there has been extensive use of antibiotics in the cure of infectious diseases and this use has been the cause of a growing health concern.

In a report by the Natural Resources Defense Council, the health risks of overuse of antibiotics in food production are cited as a growing public health concern (Cordova and Kar, 2014). Antibiotics are cited for destroying good bacteria in their efforts to target bad bacteria; consequently, having implications for human health. This destruction of good bacteria has been cited as one of the factors driving the growing market for products and foods that build the human immune system with their probiotics. In fact, the medical field understands the implications of overuse of antibiotics and issued a press release regarding the report from the “National Summit on Overuse,” which provided recommendations for curbing the overuse of medical interventions – including overuse of antibiotics (American Medical Association, 2013).

Food and Health: Benefits of Fermented Foods

Consumers do not control what goes into the food that they purchase from retail and wholesale stores; however, they can make healthy changes with respect to food choices and food preparation at low cost. Natural foods grown organically have friendly bacteria and are full of vitamins, minerals, and amino acids. The industrial process of food preservation has been blamed for destroying vitamins, minerals, and other nutrients that the body needs. Furthermore, consumers have lost the knowledge and skills to preserve food. However, those who understand the benefits of natural food preservation that their ancestors practiced are offering advice on how to benefit from “functional foods.” One such individual is Natasha Campbell-McBride who wrote a book in 2010, called the “Gut and Psychology Syndrome.”

This book claims that the gut is where diseases start. Dr. Campbell-McBride changed her son’s diet after he was diagnosed with Autism at the age of 2. She began feeding him fermented food, bone broth, a gluten free diet, and organic fruit and vegetables. Dr. Campbell-McBride’s son is now in College and has no signs of Autism. He is a normal college kid getting very good grades. She argues that fermented foods played a role in her son’s cure.

Fermented foods are widely known to contain probiotics. The probiotics are a form of good bacteria that have beneficial properties for human health, such as digestive and immune support. Thus, fermented foods are cited for improving gut and brain health, in addition to containing an abundance of healthy good bacteria. Many companies market products that contain probiotics as having prophylactic or therapeutic attributes with respect to gut health (Campbell-McBride, 2004). Campbell-McBride argued that the immune system is compromised when the gut flora

becomes abnormal. According to her, signs that something is wrong in the gut include, but are not limited to, belching, burning in the throat, constipation, diarrhea, gas, indigestion, nausea, reflux, vomiting, eczema, hay fever, skin rash, asthma, mood swings, food allergies, brain dysfunction, memory problems, menstrual problems, and stroke.

Fermentation produces probiotic bacteria, which assists in the healthy functioning of the digestive system, and prohibits unhealthy bacteria from growing in the intestines. Dairy fermentation is known to assist in not only preserving milk but in improving its nutritional value by releasing amino acids or by playing a role in vitamin synthesis (Parvez et al., 2006). Touted additional health benefits of fermented dairy products include promotion of gastrointestinal tract health; protection against food allergies; cholesterol-lowering effects; and elimination or reduction of ulcers, skin ailments (acne, eczema), constipation, and depression (Sadeghzadeh et al., 2014; Soomro and Anwaar, 2002; Hasler, 2014; Parvez et al., 2006).

Personal Testimony

My (Thadison) first experiment with fermented foods was with Kefir Grain. I was taking a walk around my apartment when I saw a group of teenage boys standing talking. One of them had a serious acne; so I thought this was an opportunity to share about my business and fermented foods. In particular, I told the young man about Kefir and how it can help cure his acne. I offered to help with Kefir and told the boy and his friends that if they were interested they should show up at my apartment; they did.

It was a blessing to have 6 young teenage boys sitting on my living room floor-taking notes like they were in school, and also, tasting the Kefir. Who said our kids do not care about their health? They Care! I gave the teen with the acne a small jar of Kefir instructing him to drink a little and also put some on his acne. He did and when I saw him 2 weeks later, his skin was clear. I also told a father, who had a son with allergies and eczema about Kefir. I gave him a small jar to try on his son. After giving his son the Kefir drink and putting it on his skin, his son's skin cleared up!

Simple Recipes of Functional Foods

Kefir Milk

Kitchen utensils needed: Plastic strainer, plastic or stainless steel (no metal utensil) spatula and mixing bowl

Ingredients:

Put 1-3 teaspoon of Kefir grain into a glass and fill with 1 pint of organic whole milk or goat milk (do not use ultra-pasteurized milk; it will not feed your grain)

Cover with a clean cloth or paper towel/coffee filter and secure with a rubber band.

Place on the counter and let sit to ferment. Kefir loves warm temperature to help culturing process; between 72-86 degrees is best. Let it sit for 24-48 hours. When the Kefir becomes thick, strain out the Kefir grain with a plastic strainer, and stir with spatula until only the grains remain.

Place grains in a clean jar, fill with milk, cover with clean cloth/paper towel/coffee filter, and secure with a rubber band as before. You can repeat this process indefinitely. Your grains will

multiply over time. The Kefir milk you strain from the grain can be poured into a clean jar and let sit on the counter for another 24 hours.

Lacto-Fermented Sauerkraut

Ingredients:

5 pounds cabbage (about two heads, organic preferable)

3 1/2 tablespoons coarse sea salt (unrefined)

1 tablespoon of whey

If you do not have whey, add 2 tablespoon of coarse salt. Shred cabbage and place into a lager-mixing bowl. Add salt to shredded cabbage and use your hands to squeeze the cabbage until the natural juice from cabbage is nice and wet with its natural liquid.

Pack the shredded cabbage into a mason jar, nice and tight. Be sure that the cabbage is covered with the natural liquid from the cabbage. If you do not have enough liquid use 2 cups of spring water and 1 tablespoon of coarse sea salt. Let the fermented cabbage sit on counter for 2 to 3 days.

Conclusion

The ancient physician, Hippocrates (460-377 BC) argued: “let food be thy medicine and medicine be thy food.” His advice has been the catalyst for a long history of linking food and human health. This paper has examined the significance of functional foods in playing an important role in human health. Fermented foods were particularly considered for their role in providing probiotics and other health benefits. Although there is a continued need for research regarding the side effects and the possibility of regulation of the functional foods market, their benefits to human and animal health have been scientifically documented. By learning from early food preservation practices that do not rely on heavy use of synthetic chemical agricultural inputs, consumer concerns about such chemicals can be quelled and consumers can benefit from the touted health benefits of functional foods, such as fermented foods. More research and awareness is needed on the way that individuals can practically incorporate low-cost, health enhancing functional foods into their diets.

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