

## Cooperative Extension

### FCHS SPOTLIGHT: Our Faculty & Staff

#### ◆ What Types of Programming do You Offer?

I offer nutrition and health education for children and adults of all ages. My programs take place in schools, senior centers, early care education centers, farmers' markets, faith-based sites, and community wellness centers. I work with schools and early care centers to strengthen their nutrition, physical activity and wellness initiatives and help them build strong wellness teams that represent a cross-section of their staff, parents, students, and community members.

I am an experienced educator of children and young adults with developmental disabilities. I, along with a faculty member in the 4-H Youth Development department, have designed and delivered professional development training programs for educators and professionals who provide programs for individuals with different learning needs. I am certified to teach the Stanford University Chronic Disease Self-Management Program and the Cancer Thriving and Striving Program.

In addition to my education efforts, I serve on several local and state coalitions which work to promote a culture of health through policy, systems and environmental changes. Last but not least, I teach an undergraduate course for Rutgers students called Wellness Behavior which teaches them the many aspects of health, from the physical to the spiritual.

#### ◆ What Project Do You Currently Spend Most of Your Time On?

All of the above! That is what I love about being an Extension Educator. No two days are alike and each project feels meaningful and impactful. There are times when more hours are spent in a particular area than others, especially if I am part of a grant project. For example, in the coming year I will have a particular focus on helping early care education centers in Trenton meet new federal guidelines to improve the nutritional quality of the meals and snacks they provide their children. The coming year will also see the realization of my goal to translate our professional development training program on developmental disabilities into a web-based series, enabling us to reach a broad audience.



Michelle F. Brill

#### *Name, Title, Credentials:*

**Michelle F. Brill, MPH**, FCHS Educator in Mercer County

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### In This ISSUE

FCHS Spotlight: Our Faculty & Staff	1,8
What Do Those Dates on Your Food Really Mean?	2
Nutritious Food – A Prescription for Good Health	3
Edible Insects	4-5
Ready for an Emergency?	5
Small Steps to Boost Your Salary	6
A Tea Primer	7

*continued on page 8*

# What Do Those Dates on Your Food Really Mean?

Robyn Miranda, Matthew Igo, Rutgers Graduate Students and  
Donald Schaffner, PhD, Food Safety Specialist, Rutgers Cooperative Extension



There are dozens of different types of labels that describe the freshness of food that you might see when grocery

shopping. Labels include "Best Before", "Use By", "Sell By" or "Expires On"... but what do they really mean? Will you get food poisoning if you consume the food after that date?

Confusion over the meaning of dates on food products can result in food waste, while at the same time, no one wants to eat spoiled or unsafe food.

There are two types of dates that can appear on a food label: open dates and closed dates. Open dates show a calendar date provided by the food manufacturer or retailer. This date is intended to provide consumers with information about when the product will be at its highest quality. Open dating is found on most foods including meat, poultry, eggs and dairy products. Closed dates are codes made

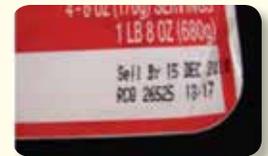
up of letters and/or numbers, and are applied by food manufacturers for inventory tracking and to identify specific production lots in the event of a recall. Closed dates typically appear on shelf-stable products in cardboard boxes, metal cans, and plastic or glass bottles. With the exception of infant formula and some baby foods, product dating is not federally regulated and the dates do not refer to food safety.



As long as safe storage and handling procedures are followed, foods that have passed the printed date should still be safe to consume. For example, milk that has been continuously refrigerated will usually remain drinkable for about one week after the "sell-by" date on the package. Foods that have an off odor or appearance are likely spoiled and while they might not make you sick, should not be consumed. Foods of uncertain status should never be tasted, but if you accidentally taste spoiled food, it should be discarded. Because the bacteria that cause food poisoning are not usually the same as those that spoil food, eating spoiled foods will probably not make you sick, but it is still not recommended.

**Below is a list of some open dating terms and their meaning:**

- ✓ **Best-By, Best if Used By/Before:** These dates are typically found on shelf-stable products like peanut butter and mayonnaise. The label suggests that the food be eaten before that date for the best taste and quality.
- ✓ **Sell-by:** These labels are usually found on perishable foods such as meat, seafood, and milk. This date is a guide so retail stores know how long to display the product. If a product is past the sell-by date it may still be safe to consume. Most retailers will continue to sell food past this date, depending on state or local regulations.
- ✓ **Use-by:** This label suggests the date by which the product should be consumed. Use-by dates are typically set for the best quality, not because the food will make you sick if eaten past this date. Federal regulations require a use-by date on infant formula and some baby foods. This is because infants may derive all their nutrients from such foods. Because nutritional content of all foods declines over time, consuming out-of-date infant formula may place infants at risk of severe nutrient deficiency.



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## Nutritious Food –

# A Prescription for Good Health

Karen Ensle, EdD, RDN, FAND, CFCS, FCHS Educator, Union County



Nearly one million people in New Jersey face hunger. Many of them live with the double burden of food insecurity and poor health. When people don't have enough food or are forced to choose inexpensive foods with low-nutritional value, it can seriously impact their wellbeing.

People who are food insecure are affected by diet-sensitive chronic diseases such as diabetes and high blood pressure, and according to research, food insecurity is linked to many adverse effects to overall health.

Because of the connection between food insecurity and health, New Jersey's largest anti-hunger and anti-poverty organization combats hunger with nutritious food. For the Community FoodBank of New Jersey, that has meant two things – increased efficiency and strategic collaboration with many organizations including Rutgers Cooperative Extension.

The ultimate goal of the Community FoodBank of New Jersey, as well as, food banks and other hunger-relief organizations worldwide, is to eliminate hunger in the region it serves. Along the way, the Food Bank hopes to inspire positive lifestyles through innovative programs that provide consistent access to fresh fruits and vegetables, lean proteins, whole grains, and low-fat dairy.

Last year, the Community FoodBank of New Jersey distributed more than 50 million pounds of food through its community partners, including local soup kitchens and food pantries, and programs across the state. Twenty-five percent of this food was fresh produce, which reached the tables of New Jersey families in need.



In addition to nourishing after-school meals for children at risk of hunger, weekend bags of supplemental food for school-age children and their families, and monthly food packages for seniors on fixed incomes, the FoodBank recently launched two innovative programs that align with its "hunger as a health issue" initiative.

The first is *Food, Health & Hope: An Answer to Diabetes*, a pilot program for the public with diabetes or pre-diabetes. Through collaboration with Summit Medical Group Foundation and by working with its community partners, eligible clients receive diabetes-friendly food boxes and fresh produce twice a month, as well as medical screenings and nutrition counseling. Because of the power of nourishing food, regular health check-ins and education, program participants already noticed a difference in their well-being.



Another FoodBank program, called *Healthy Families Farmers Markets*, brings free, fresh fruits and vegetables into high-need communities. Modeled after traditional farmers markets, the FoodBank works with its partner organizations to provide produce to food-insecure families year-round. The *Shaping Elizabeth* "Mobile Market" in the Mravlag Section of Elizabeth supports healthy foods and produce for over 400 families twice a month from the Food Bank. Nutrition Education is provided by Extension volunteers and Registered Dietitians. Surveys indicate an increased consumption of fruits and vegetables due to this market and the food demonstrations with recipes that help residents learn how to prepare unfamiliar healthy foods.

**Nutritious food is a prescription for good health.** With strategic community and partnerships, the Food Bank and Cooperative Extension continues its holistic approach to addressing hunger as a health issue. To learn more about the Community FoodBank of New Jersey and how you can help, please visit [cfbnj.org](http://cfbnj.org).

# Edible Insects

Michael Rollo MS, *Dietetic Intern, Montclair State University*  
 Sara Elnakib, RDN, MPH, *FCHS Educator, Passaic County*



Since arriving in North America, European settlers found lobsters to be very plentiful, which gave them a reputation as being a source of protein only for the poor, prisoners, slaves and children. Then in the 1870s and 1880s, prices began to rise as they started to shed their nasty reputation. By the time of World War II, lobster was considered a delicacy. A similar history may follow as edible insects become more and more popular for Western countries, mainly European and North Americans. Feeding at least 2 billion people worldwide, insects have been a part of the daily diet of people for centuries, from being mentioned by Aristotle during his lifetime of 384-322 Before the Common Era (BCE), to the people of Ethiopia in the second century BCE, who were called Acridophagi, or “eaters of locusts and grasshoppers,” by Diodorus of Sicily. Providing an excellent source of protein, vitamins and minerals, insects can be a more sustainable source of nutrition for the world.



There are over 1,900 insects that have been documented in the literature as being edible for human consumption. Some of the most common ones include beetles, caterpillars, ants, grasshoppers, locusts, and crickets. These can be eaten in a variety of forms, such as cooked whole or ground into a powder to be used in food products. Some potential benefits have been documented, which include edible insects being a protein option other than animal proteins like beef and pork. Some believe they may reduce the negative impact on the environment as being a more sustainable food source.

## Nutritional Impact

The average protein content of edible insects varies, but it is comparable to animal protein. Varying anywhere from 8-28% protein for insects and 13-28% for beef, finfish, and crustaceans, insects may be able to provide sufficient amounts of protein in a varied diet.

Another nutrient that is high in insects includes the mineral iron, which can be up to 13 times as available per 100 g of dry weight. Insects also contain a wide range of micronutrients, such as zinc, B vitamins, vitamin A, and E. Being the most common and widespread nutritional concern of the World Health Organization, insects can help prevent and treat anemia due to their high iron content.

Typically, 1 kg of live animal weight in a standard production system in the United States requires 2.5 kg of food for chicken, 5 kg for pork, and 10 kg for beef. Crickets, for example, require 1.7 kg of food, which is a lot less. In addition, it is estimated that crickets are 80% edible compared to beef which is only 40% edible, meaning that crickets are more efficient in converting feed to meat and are overall more edible than chicken, pork, and beef. The low amount of food needed to feed insects could be due to insects being cold-blooded and not needing more energy to maintain their body temperature, as compared to warm-blooded animals.

## Environmental Benefits

In helping to form a better environment, the production of insects (mealworms, crickets, and locusts) reduces greenhouse gas emissions by about 50 times less than beef. Greenhouse gas emissions (GHG) cause global warming, air pollution, ozone layer depletion, plant disruption, and ocean acidification. Reducing GHG emissions in a small way would have a big impact on the environment, and this can also be said for the amount of water that is needed to raise 1 kg of animal protein. From chicken, pork, and beef, anywhere from 2,300-43,000 liters of water is needed for every 1 kg of animal protein. Although research is needed to figure out how much water is needed per 1 kg of protein for insects, the requirements could be considerably less. For example, mealworms are more drought-resistant than beef and would require less water.

Edible insects can not only benefit humans in consuming a different protein and nutrient food, but also the environment in reducing gas emissions, reducing the amount of pesticides used, and reducing the amount of feed and water needed to mass produce animal protein. Like other raw foods, proper cooking will remove harmful bacteria,

*continued on page 5*

Average Protein Content (per 100 g fresh weight)	
Locusts and grasshoppers, adult	13-28%
Yellow Mealworm, adult	14-25%
Crickets, adult	8-25%
Termites, adult	13-28%
Beef	19-26%
Finfish	16-28%
Crustaceans	13-27%

Water Requirements (per 1 kg of animal protein)	
Chicken	2,300 liters
Pork	3,500 liters
Beef	22,000-43,000 liters

# Ready for an Emergency?

Punnya Andrews, Dietetic Intern, Rutgers University, SHP Class of 2018  
Karen Ensle, EdD, RDN, FAND, CFCS, Preceptor and FCHS Educator, Union County



## How prepared are you for a natural disaster?



Floods, hurricanes, snow storms, blizzards, and power outages can all occur with no warning at all. Access to potable water, electricity, fuel for cooking, heating, communication can all be affected during emergencies from a few hours to a few weeks.

- 1 Stocking up** on vital resources like potable water, non-perishable foods, and safe fuels will help you get through the natural disaster or power outage with less stress.
- 2 Ensure that you have items that don't have to be refrigerated**, that can be consumed cold or heated on an outdoor grill or portable stove.
- 3 Canned and boxed food/meals** need to be stocked along with bottled water.
- 4 If you have a baby**, make sure you have ready-to-use formulas and ensure that they are sealed well and be aware of the expiration dates.
- 5 It is important to use packaged foods from time to time** and replace them as needed. Keep a manual can opener, knife, disposable plates, cups and utensils available.

## Stocking up on items

with longer expiration dates will ensure consumption of safe and healthy food. This includes:

- nut butters
- trail mixes
- protein/granola bars
- cereals
- whole wheat crackers
- dried fruits
- fresh fruit like apples, oranges
- canned soups, vegetables, canned tuna/chicken, milk
- breads
- juice boxes
- sports drinks
- powdered or pasteurized milk in aseptic packaging
- puddings



If there is access to a working stove, vegetables such as potatoes, sweet potatoes, winter squashes and yams can be purchased and stored. During an emergency it is very important to fuel our own bodies.

In case there is fear of a power outage, ensure that you have an appliance thermometer in both the refrigerator and freezer. The temperature should be set 40° F in the refrigerator and 0° F or less in the freezer. Grouping foods together in the refrigerator and freezer helps the food stay cold longer. Make sure that there is no empty space by filling empty spaces with gel packs, bags of ice or water jugs. During the power outage keep the refrigerator door closed to prevent inside temperatures from increasing. If the power is off for more than 4 hours, be sure to refill/repack the freezer and refrigerator with ice using a scoop, being careful not to touch the ice with bare hands. Food safety is important at all times.

Following safe and healthy food practices can help prevent food spoilages and food borne illnesses and ensure access to adequate nutrition for our families and ourselves even during times of stress and unpredictable emergencies and events.

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## Edible Insects - continued from page 4

though the most efficient temperatures for specific edible insects must be determined. Once all standards are in place after more research has been conducted, the main test will be to eradicate the "disgust" perception that Western countries have. After this, edible insects may one day become a delicacy as lobster is now.

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# Small Steps to Boost Your Salary

Barbara O'Neill, Ph.D., CFP®, *Extension Specialist in Financial Resource Management*



Cash flow is the relationship between income and expenses. Spend more than you earn and you have negative cash flow. Do the reverse (i.e., earn more than you spend) and cash flow turns positive. Ideally, income from all sources should equal household expenses, including savings for emergencies and future financial goals.

To improve your cash flow, there are basically three sustainable (ongoing) action steps that people can take: spend less, earn more, or do a little of both. There are also things that people can do occasionally to improve their cash flow such as have a garage sale or use eBay to sell personal possessions.

Too often, personal finance articles focus on expense reduction ideas. This is understandable because expenses are generally easier to control than income. After all, individuals themselves can decide to spend less on variable expenses (e.g., food, gifts, entertainment, clothing, etc.) whereas decisions about how much people are paid are made by employers or clients (if you are self-employed).

**Nevertheless, there are time-tested ways for people to improve their cash flow by increasing their income. Below are eight small steps to boost your salary:**

- ➔ **Be Valuable** - Develop expertise that an employer or clients value. This can be done through formal degree programs, occasional college courses, watching webinars and videos, inservice training at work, freelance work assignments, volunteer work, and/or simply taking personal time to learn useful information.
- ➔ **Be Visible** - Make sure that your employers (or clients) are aware of your talents, skills, and past performance. This can be done, without sounding boastful, through formal reports to supervisors, awards, contributions to workplace newsletters, networking with colleagues, and/or social media messages.
- ➔ **Have One or More Mentors** - Mentoring is a process of transferring knowledge and expertise between workers. Experienced workers typically mentor new hires but mentees, often younger in age than their mentors, can also “reverse mentor” back so that both parties upgrade their job skills and performance.
- ➔ **Plan Ahead** - Think about where you want to be in your career five, ten, and twenty years from now. Then develop an action plan of steps required to get there. For example, you may need to take a certain certification program or move to a new company’s home office in another part of the country.
- ➔ **Keep Your Resume Updated** - You may have to send your resume to others on very short notice. Develop a process (e.g., annual or semi-annual updates) to review and revise your resume. Be sure to highlight accomplishments that employers value such as dollars saved, clients acquired, and products developed.
- ➔ **Develop Good Writing Skills** - Writing everything from reports to blogs to company marketing materials is required in most job settings. This skill can be developed through self-study, mentoring and feedback from coworkers, and practice.
- ➔ **Develop Good Public Speaking Skills** - Another valued skill is public speaking at company meetings, professional conferences, and other settings. Like writing, this skill can be developed through self-study (e.g., joining a Toastmasters group), mentoring and feedback from coworkers, and practice.
- ➔ **Live a Healthy Lifestyle** - Employees who are healthy get things done and are not a drag on an employer’s productivity. Specific steps to take include eating healthy meals, getting daily physical activity, getting adequate sleep, and “simple things” like disinfecting phones, copiers, and other surfaces with germs.



**Do you want to improve your household cash flow? Take small steps to increase your income. Doing so will provide more cash for daily living expenses, debt repayment, and/or savings for future financial goals.**

## A Tea Primer

Sherri Cirignano, FCHS Department Chair and Educator, Warren County



Tea is created through the simple process of 'steeping in freshly boiled water the young leaves and leaf buds of the tea plant, *Camellia sinensis*.' *Camellia sinensis* is an evergreen shrub that grows wild in subtropical monsoon-like climates to over 30 feet high, but grows to only 4-6 feet high when cultivated. Cultivated tea plants are kept short and are trained to grow in a fan shape for ease in picking of the leaves.

Second only to water, tea has been consumed worldwide for thousands of years. Thought to have been discovered accidentally when a tea leaf floated into an open pot of boiling water, tea has excelled in popularity due to its many positive attributes. For example, tea is easy and inexpensive to grow and prepare, it stores well, it is safe to drink, and consumption of tea has potential health benefits.

Historically, tea was considered to be beneficial to health when used as a traditional form of Chinese medicine as early as 551-479 BC. Those who practiced Taoism and Buddhism found tea helped them to meditate because it increased their mental acuity. Over time, tea was also used for many ailments including fatigue, repairing eye sight, cleaning sores, and alleviating rheumatic pain as well as healing specific complaints of pain in the head, heart, liver and stomach.



Today, tea's potential benefits to health are the subject of scientific study. Although initial study results on tea were positive, some studies on humans have had mixed results. This may be due to differences in studying techniques and factors in humans, such as diet, level of physical activity and other environmental influences that cannot be controlled.

When considering all of the current evidence with regard to tea intake, some possible benefits have been identified. Tea has been studied for its possible role in promoting weight loss, and preventing metabolic syndrome, cardiovascular disease, certain types of cancer, and in the prevention of neurodegenerative diseases. Most of these potential benefits have been attributed to substances in tea known as polyphenols, but also studied have been caffeine in tea and the amino acid theanine, and its possible effects on the neurological system.

Neurodegenerative diseases include Alzheimer's, Parkinson's and Huntington's diseases, all of which can result in a loss of cognitive function. Several large studies have suggested that tea may improve cognitive function, especially in older women. The amino acid theanine, found in green tea, is thought to play an important role in this function since it can cross the blood-brain barrier. Several studies have also shown that theanine may relieve symptoms of anxiety in schizophrenia, may improve memory and attention in individuals with mild cognitive impairment and is also being studied for its possible effects on depression, stress and insomnia.

Tea has other health effects such as a known ability to decrease the absorption of a certain type of iron known as nonheme iron, found in non-animal products. This occurs when tea and these foods are consumed at the same time. Those who have a known iron deficiency may benefit from drinking tea separate from meals.

Tea has been associated with higher bone mineral density measurements in older women indicating that it is protective against bone fractures. And fluoride, found naturally in tea, may promote oral health by reducing the incidence of periodontal disease and the chance of tooth loss by inhibiting the growth and adherence of bacteria in the mouth.



All of these health effects are attributed to consuming tea as a beverage. When tea extracts or polyphenols are taken as supplements, often for the purpose of weight reduction, careful consideration is advised. Some supplement doses that can reach or exceed 1,000 mg have been linked to liver damage.

For protection against certain chronic diseases, moderate intake of one to three cups of tea per day may be beneficial. More research is needed to better understand the health effects of tea consumption.

## **FCHS SPOTLIGHT: Our Faculty & Staff** - continued from page 1

### ◆ **Name One FCHS Resource You Think More Consumers Should Know About?**

Consumers should get to know their FCHS County Educator who is there to deliver our signature programs, but who can also customize and develop new programs to meet the needs of their community.

### ◆ **What Makes FCHS Programs/Resources Unique?**

FCHS programs are research-based, current, credible, and offered to all without bias or commercial motive. The FCHS department is a part of Rutgers, the State University of New Jersey which is a top-tier research institution. Our programs and resources reflect the best science that we can “translate” into consumer-friendly language.

### ◆ **What Nutrition/Health/Wellness Mantra Do You Live By?**

Honor your body’s messages and lead a well-balanced life.

