CARIBBEAN FOOD CROPS SOCIETY

51

Fifty-first Annual Meeting 2015

Paramaribo, Suriname
Volume LI

PROCEEDINGS

OF THE

51ST ANNUAL MEETING

Caribbean Food Crops Society
51ST Annual Meeting
July 19 – July 24, 2015

Royal Ballroom Hotel Torarica,
Paramaribo, Suriname

Edited by
Ranoe S.Mangal-Jhari, Lydia Ori, Abdullah Adil Ansari, and
Wilfredo Colón

Published by the Caribbean Food Crops Society

ISSN 95-07-0410

Copies of this publication may be obtained from:

CFCS Treasurer
Agricultural Experiment Station
Jardín Botánico Sur
1193 Calle Guayacán
San Juan, Puerto Rico 00936-1118

CFCS Website: http://cfcs.eea.uprm.edu/

Proceedings of the Caribbean Food Crops Society. 51:10-13. 2015

FOOD SAFETY AND FOOD SECURITY ISSUES IN THE CARIBBEAN

L. Simeon Collins, CEO, Caribbean Agricultural Health and Food Safety Agency (CAHFSA)

Introduction

Food safety is an assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use. Food security may be defined as the availability of food and the ability to acquire it.

Food safety issues

First foremost is food borne illnesses. Food borne illness is an illness caused by the consumption of contaminated foods. Over the past 20 years there has been an increase in reports of food borne illnesses worldwide including the Caribbean. Factors giving rise to increase in food borne illness: improved surveillance programmes; increasing number of elderly persons in the population; major deficiencies in personal hygiene practices (people do not wash their hands properly); increase in food preparation outside the home; changes in food preparation techniques; changes in microbiology. Changes in microbiology indicate the presence of: a) More virulent strains: *Salmonella enteritidis*: can now incorporate into uncracked "sterile" eggs; (b) Greater ability to grow at low temperatures such as *Y. enterocolitica*; *L. monocytogenes*

Examples of costs related in some cases

In the USA: 76 million cases of food borne illnesses each year; 324,000 hospitalizations; over more than 5,000 needless deaths and economic losses between US $7.7 - $23 billion/ year in USA. In the UK: over 5 million cases of FBI each year and thousands hospitalized. In the Caribbean 1990's and late 2005 there were very few documented outbreaks of food borne illnesses. We did not have a very organized monitoring and surveillance programs for FBI. In the Caribbean: 1997 reported 3 major tourist outbreaks in Jamaica; 1998 reported a similar situation in Barbados; in 2000 multiple tourist incidents in Jamaica. The cause for foodborne illnesses major serotypes are *Salmonella typhimurium & S. enteritidis*. Food poisoning at St. Ann's Mental Hospital, T&T. Morbidity - >300; Mortality-11. Suspect-Egg Nog (1992). Right now the situation has changed and as monitoring programs are becoming better, there are hunderds of FBI reports in the Caribbean annually. Major microorganisms that cause food borne illnesses: E. Coli; Faecal *Streptoccus; Salmonella; Clostriduim Botulinum*; *Staphyloccus aureaus; Shigella*; The vibrio spp.; *Hepatitis A; Listeria monocytogens*; *Clostriduim perfringens*. The overuse of either naturally occurring chemicals, intentionally added chemicals or unintentionally added chemicals is also identified as a food safety issue.

Examples of naturally occurring chemicals in food: Histamine: can be found in scombroid fish such as tuna, mackeral, bonita, etc. These fish contain high concentration of the amino acid histidine in their muscle tissues. Histamine is produced when this amino acid is decarboxylated by bacteria in the fish guts. It causes scrombroid food poisoning or histamine food poisoning. Symptoms include headache, nausea, dizziness, rapid pulse bit, flushing of the face. Onset a few minutes to several hours after eating.

Aflatoxin: This toxin is produced by the mold aspergillus flavus. Can be found in corn, peanuts, etc. This toxin can cause liver cancer if consumed in low doses over a long period of time (permissible limit 20 ppb).

Manioc (cassava): contain a chemical that breaks down into hydrogen cyanide in the stomach. It would be fatal if cooked and eaten. However, preparation procedures have been developed to make it safe for consumption by washing and extracting. In the Caribbean, two types of Cassava are grown, namely the bitter and the sweet Cassava. Both types of Cassava are acceptable to consumers but we mainly consume the sweet Cassava. Sweet Cassava root has low levels of cyanide (about 20 mg/kg) and it can be peeled and boiled like conventional tubers such as Yams and Potatoes. While the bitter cassava is considered edible, the toxin (cyanide) must be extracted. It contains about 50 times as much cyanide as the sweet cassava (1 g/kg).

Examples of intentionally added chemicals, which are mainly food additives: Preservatives (e.g. nitrites and sulphiting agents, benzoic acid); Color additives;

Nitrites has been used for centuries in curing meats. When added to meats at around 150-200 ppm, nitrites causes the natural red color to be fixed during curing to a pink color. This is what occurs in the manufacture of hams, sausage, hot dogs, salami, etc. Nitrite also helped develop the cured meat flavor. In the late 1960s it became evident that nitrites can react with certain types of amine compounds to form nitroamine which was found to cause liver cancer. In 1975, the FDA lowered the limits of nitrites in most products;

Sulphites are used to prevent discoloration in dried fruits and fresh-cut potatoes and to prevent discoloration and bacterial growth in wines, however, they can provoke allergic reactions. A typical reaction is difficulty in breathing within minutes of consuming sulphites. This occurs mainly among asthmatics;

Violet No.1: - was used until the Spring of 1973 for stamping the USDA inspection grades of meat onto beef carcasses. Some Japanese studies published at the time showed that Violet No. 1 Fed at 5% of the diet was carcinogenic; The FDA then banned it.

FD & C RED No. 2 was used in the American food supply until January 1975. It was the basic coloring agent used in lipsticks, candy, some foods and beverages. Red No. 2 was also used to color canned pet foods. In 1970 the Russians published a study questioning the safety of Red No. 2. The study showed early deaths and cancer in rats. It must be pointed out that they were not using FD&C Certified Red No. 2 but a more crude form (Amaranth) that contained some impurities. In studies carried out by the FDA, it was found that there was a 5% chance that RED No.2 at 3% in the diet was a chemical carcinogen. The FDA therefore delisted this color from the official color list.

Unintentionally or incidentally added chemicals: Agricultural chemicals (e.g. pesticides, fungicides, herbicides, fertilizers, antibiotics and growth hormones); Plant chemicals (e.g. lubricants, cleaning compounds, sanitizers, paints.

Food safety concern: Antimicrobial resistance is the ability of the bacteria or other organisms to survive the effects of antibiotics. Why a concern? Because the ability of bacteria to survive some commonly used antibiotics is increasing. This is because these common antibiotics are also used to treat serious infections found in livestock; Because of the extensive use of antibiotics in

livestock, the bacteria present in a lot of food-producing animals have become resistant to antibiotics; When the meat of these animals are eaten, these bacteria is transferred to the human body as bacteria that can cause illnesses.

AMR and FOOD SAFETY

It is important that there should not be any misuse or overuse of antibiotics, so that the efficiency of the antibiotics is preserved for as long as possible.

Food security: Genetically manipulated foods are being proposed as the answer to foods security, with the following benefits:-resistant or herbicide resistant crops; yield fruits with delayed ripening characteristics; can reduce the use of water and agrochemicals in agriculture; plant varieties designed to produce increase yield. GMOs are organisms produced when genetic materials from one organism is inserted into another specie in order to introduce specific desired characteristics such as pest resistance, herbicide resistance or resistance to a particular disease. Genetic engineering promises remarkable advances in agriculture. This include:- increase in food security . Potential risks: Interaction of the GMOs with various ecosystems is not known. Potential areas of concern are: the possibility of adverse impact on non-target species (such as beneficial insects) and ecosystems; the potential dispersal of the GMO into the environment; the potential transfer of the inserted genetic materials (and related characteristics) to other native plants e.g. through cross pollination; possible effects on human health arising from the consumption of food containing or produced from GMOs

Survey in Europe: Do you think GM crops should be grown and eaten:- Yes 40.2% ; - Yes, but with labeling of GM products in food 6.2%; - Grow only for research and testing until we know more 13%; - No 40.6%.

USA Scientists: Any information against GMOs must be science-based. There is no scientific evidence that GM foods can affect the health of any one; Critics: We just do not have the scientific information yet.

Rio Declaration in 1992: Biotechnology is good; It may be important to prevent us from diseases and may be a solution to food security problems. Critics: But we are not certain. Precautionary Principle: If you are not sure be careful.

Caribbean: no firm position on the use of GMO's

Responsibility of FS: Farmers, traders, processors and importers are responsible for food safety; the Member State government authorities are responsible for control and enforcement of the legislation and standards.

Proposed solutions to food safety problems: USA: US Food safety modernization act, this act came to be on January 4, 2011. Under the new FSMA, all entities producing, handling, transporting, importing or distributing food have now to meet new food safety requirements to sell food in the USA.

EU: new food safety directives

Caribbean: possible solution: training farmers, food processors and others in GAP, HACCP, ISO 22 000. Formation of NAHFSA or steering committees of AHFS in each members state to coordinate enforcement and monitoring of standards and legislation; Feedback from the NAHFSA into CAHFSA to ensure that there is a regional approach to foods safety, plant health and animal health issues and to standardize our legislation and enforcement mechanisms. In conclusion we are all responsible for food safety and food security, we must all play our part.