FOOD SAFETY IMPLEMENTATION IN FISH PROCESSING TECHNOLOGY: GENDER ROLES

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ABSTRACT

Food safety is everybody's concern, thus the Cebu Technological University, Cebu in collaboration with Bohol Island State University, Bohol, Philippines researchers enjoined to disseminate good manufacturing practices (GMP) and hazard analysis critical control point (HACCP) awareness to fish processors. This study aimed to implement food safety practices in fish processing and determine the gender roles in GMP and HACCP implementation in processing of fish and other fishery products. Based on descriptive statistics, the two active cooperatives of Sta. Fe, Cebu Philippines and Madridejos, Cebu, Philippines as benefeciaries, fish processors integrating the GMP and HACCP and marketing of the finished products were dominated with feminine and proper handling during purchasing of fish as raw materials were dominated by men. The Cebu Technological University with Bohol Island State University researcher's food safety implementation were on the application of coconut water into the chilled marinade solution of bottled sardines in tomato sauce and in oil and washing the fish with chilled brine solution as pretreatment of fermenting small anchovies and dry-salted sardines.

KEYWORDS: *fish processing, food safety, gender roles*

INTRODUCTION

Food safety is everybody's concern. Bohol Aqua Marine Development Corporation (BAMDECOR) of Bohol, Philippines one of the Hazard Analysis Control Point (HACCP) accredited industry workers (Fig.1) observed good manufacturing practices to ensure food safety. As our food supply becomes increasingly globalized, the need to strengthen food safety systems in and between all countries is becoming more and more evident. That is why WHO is promoting efforts to improve food safety, from farm to plate (and everywhere in between) on World Health Day. 2015

Fig. 1. BAMDECOR good manufacturing practice (GMP)

With the slogan of "From farm to plate, make food safe" (World Health Organization, 2015 accessed in http://www.searo.who.int/entity/world_health_day/2015/whd-what-you-should-know/en/).

In the Philippines, women form a large part of the agricultural workforce and are involved in the preparation, processing and marketing of agriculture commoditites. Gaerlan et al., 2012) Food safety should be applied to fish processing industries producing chilled deboned milkfish and dried fish. In processing, salting through brining is the preparatory step in fish handling and drying. http://seafood.oregonstate.edu/.pdf%20Links/FAO-Codex-Alimentarius-Code-of-Practice-for-Fish-and-Fishery-Products.pdf
While men dominate in the harvesting sector of fisheries, women are usually the majority of workers in fisheries service and post-harvest sectors (Porter,2012).

The Cebu Technological University researchers-extensionists in collaboration with the Department of Trade and Industry. Cebu Province, Philippines conducted a training on fish processing particularly salted and bottled fishery products integrating the patented method of using low temperature pretreatment with coconut water with the two cooperatives/associations of Bantayan Island, Cebu Province, Philippines with the emphasis of good manufacturing practices and hazard analysis critical control point as a basis for gender roles on food safety, thus this study.

The present study was conducted in 2015 to investigate the roles of women and men on food safety implementation in fish processing technology based on good manufacturing practices and hazard analysis critical control point during and after the training on fish and food processing.

METHODOLOGY

The utilized the descriptive method of research using survey questionnaire on the implementation of GMP and HACCP in fish processing technology integrating the patented research output of coco-enriched brined solution application to bottled sardines and chilled brine solution used in washing as preparatory steps of fermented sardines last July-December, 2016 with 30 respondents from Poblacion, Sta. Fe Cooperative (POSTAFE) and Madridejos Fish and Food Processing Association (MAFFA). A modified questionnaire was prepared base on one developed by Lolita V. Villareal and Jeremy M. Turner (Villareal and Turner, 2004) it was administered by the Cebu Technological Researchers to 30 members of the two trained groups. The data gathered were subjected to descriptive statistics particularly percentage, range and weighted mean.

RESULTS AND DISCUSSION

Out of 70 trained beneficiaries from the two groups, 30 of them were asked on their gender roles on food safety integrating the Good Control Point observation during processing of salted and bottled sardines.

Respondents Backgrounds

Of the female respondents, 50% were aged 50-59 years, 14% 30-39 years and 7% were 20-29 years. Eighty seven percent (87%) of the respondents were married, 100% literate, and 73% practiced in Roman Catholic religion. All were Cebuanos. Ninety three percent of the female were married, with children from ages one to nine and 50% were nursing mothers. With respect to the family planning, 93% were aware of the methods and practiced family planning:75% of the nursing respondents currently used family planning methods.

Fifty percent of the fathers of the respondents were scale fisherman. The technology of fish processing was therefore largely acquired from their parents.

Work/Occupation

All female respondents processed fish And other food products as their main occupation. Marketing and catering of processed foodstuff and part-time fish vendors were subsidiary occupations for women (Table 1). The male respondents were retired teacher and newly teacher education graduates for whom processing fish and marketing the processed fish were subsidiary occupations. Sixty four percent of the respondents had processed fish and food products as their means of livelihood for the past 2-5 years.

Table 1. The main and subsidiary work/occupation of the respondents

Work/ Occupation	Main		Subsidiary	
	No Women	No. Men	NO. Women	No. Men
Fish Processing	20	0	8	2
Fish/Food Marketing	8	2	16	0
Food Catering	0	0	4	0
Total	28	2	28	2

Survey respondents typically worked 40-48 hours per week on their main occupations, as fish processors and marketing of processed products, and 8-15 hours week-1 on their subsidiary activity, mostly marketing of fresh fish and processed fish products. The women who processed fish products as their main occupation and marketed fish as their subsidiary work, performed both tasks within the same week. The CTU researchers found that women processed fish immediately after obtaining it from the fishing boats near the fish port.

Gender Roles

Table 2, summarizes the roles of women and men in the processing of fishery products of Sta. Fe and Madredijos, Cebu Philippines after the training. The male respondents were the one who purchased the fish as raw material for fish processing. The men loaded the bottled products into the pressure cooker, processed and complete sealed the processed bottled products.

The female respondents who processed fish performed two additional roles. They were port fish samplers, selecting individual fish for processing, and also handlers, transporting the fish from the fish port to their workplaces. Typically, the female processors prepared the fish, doing the pre-treatment of cleaned fish with the coconut water mixed with chilled brine solution (UM Registration No. 2/2014/000712, 29/05/2015), packing the treated fish into the jars, steaming and adding sauce into the jars and assist in loading the fish into pressure cooker.

Table 2. The Roles of women and men in processing bottled sardines in tomato sauce.

Men	Women
Preparation of Fish as Raw Materials and Processing Bottled Sardines in Tomato Sauce	
➢ Select and buy the fresh fish from the fishermen ➢ Chill the fish using chilled brine solution ➢ Proper fish handling and delivery to processing area	➢ Port fish samplers ➢ Select and buy the fresh fish from the fishermen ➢ Chill the fish using chilled brine solution ➢ Proper fish handling and delivery to processing area ➢ Observing GMP practices, in proper personal hygiene and sanitation ➢ Pre-treatment of fish using chilled coconut water-based brine solution below 5 degrees Celsius ➢ Cutting the fish into jar sizes ➢ Cleaning the fish by removing the gills and internal organs and washing with chilled coconut water-based brine solution ➢ Packing the brines fish into the preserving jars and steaming for 30 minutes ➢ Preparing the sauce and adding into the steamed fish in jars ➢ Loading the bottled fish into the cooker ready for processing ➢ Marketing the finished bottled products
Processing ➢ Loading the bottled fish into the pressure cooker ➢ Exhausting venting and processing of bottled fish for 90 minutes at 240 degrees Fahrenheit ➢ Observing the constant temperature for the within the required processing time ➢ Complete sealing and cooling of bottled products at room temperature	

Women dominated post-harvest processing of bottled products during and after the training aside from the POSTAFE members manufacturing of crispy dilis and MAFFA members fish crackers production. Men substituted female members in purchasing of fish as raw materials and in the operation of pressure cooker during processing of bottled sardines in tomato sauce. MAFFA core officers were able to train another group of women in Daanbantayan, Cebu, Philippines integrating the good manufacturing practices in food processing as shown in Figure 2

Figure 2

Madredijos Fish and Food Association (MAFFA) officers trained Daanbantayan women group on Food Processing Integrating Good Manufacture Practices (GMP)

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