



Document Code:	QF-OES-07	Revision Number:	02
Effectivity Date:	October 14, 2021	Page 1 of 6	

EXTENSION ACTIVITY ACCOMPLISHMENT REPORT

BASIC INFORMATION

1. Title of Extension Activity

TECHNOLOGY TRANSFER ON PROCESSING OF PAKO-ENRICHED FOOD PRODUCTS: A Skills Development Training in Producing Sustainable Food Products for Health Emergencies, Disaster Relief and Rehabilitation Works

2. Implementors/Extensionist/s

FOOD SCIENCE RESEARCH AND INNOVATION CENTER

3. Location of the Activity

BSU FSRIC and ATBI/IC

4. Duration of the Activity

April 7-8, 2022 ; 8:00 AM- 5:00 PM

5. Budget

P 43,800.00

6. Source of Funds

Philippine Council for Health Research and Development – Department of Science and Technology (PCHRD-DOST)

REPORT

1. Rationale

Developing healthy, sustainable and affordable food products for the general public's consumption is one of the main goals of the research and development activities in food processing industry. Various methods and technologies have been developed and practiced, and are being transferred to various MSMEs and community organizations in order to support them in developing food products as a solution to the diverse problems in food industry that every community faces. One of such problem is the availability of efficient and sustainable food products for health emergencies, disaster relief and rehabilitation works in the times of alarming natural adversities such as food and nutrition deprivation, calamities, and epidemic.

The Benguet State University has been developing and transferring developed technologies on food processing to community stakeholders who serve as recipients benefiting from these technologies. The BSU Food Science Research and Innovation Center, as a cradle of vegetable-enriched food products as technologies developed, has been transferring such technologies developed to various community organizations who wishes to be engaged into food processing for livelihood activities. As the BSU-FSRIC has developed technologies on noodle, bread and pastry, and snack-type food products enriched with various vegetables and root crops as a research and development output, it has always been aimed that these technologies shall be continuously transferred into various MSMEs and community organizations who wishes to venture into food processing.

In order to constantly promote and transfer the technologies on vegetable-enriched noodle, bread and pastry, and snack-type food products, a technology transfer activity is set to be conducted by the BSU-FSRIC, Addictus Research and Intervention Center, Inc., PCHRD-DOST, and UP Manila through this activity with a title "**TECHNOLOGY TRANSFER ON PROCESSING OF PAKO-ENRICHED FOOD PRODUCTS: A Skills Development Training in Producing Sustainable Food Products for Health Emergencies, Disaster Relief and Rehabilitation Works**". The activity aims to transfer the technologies Pancit Canton, Chips, Cookies and Crackers processing developed by the BSU-FSRIC to the community leaders and members on the indigenous people's tribes of Ayta Sambals of Botolan, Zambales and Ayta MagAntsi of Porac, Pampanga.

The Addictus Research and Intervention Center, Inc., through its project on "*Development of IKSP-Based Technologies for Disaster Risk Reduction and Health Emergencies: Aytas of Mt. Pinatubo as Models for Climate Change Resilience*", has identified the indigenous people of Ayta Sambals of Botolan, Zambales and Ayta MagAntsi of Porac, Pampanga to be its recipient for the skills development training on pancit canton, chips, cookies and crackers processing. The said recipients have been identified to be locally cultivating "Pako" or wild edible fern within their



EXTENSION ACTIVITY ACCOMPLISHMENT REPORT

Document Code:	QF-OES-07	Revision Number:	02
Effectivity Date:	October 14, 2021	Page 2 of 6	

community. As they harvest surplus of such, it is foreseen that these surplus of Pako may be developed into variety of nutrient-enriched food products that will be readily available for local consumption, and especially in developing food products for health emergencies, disaster relief and rehabilitation works as part of the goals aimed by the project aforementioned. As the Addictus Inc. was able to recognize the developed technologies of BSU-FSRIC in vegetable-enriched food products, the BSU-FSRIC has been tapped to extend its expertise and programs on Pako-enriched food product processing through this activity. The FSRIC has willingly agreed to provide such services since it has been one of the Center's mandates and programs for the community.

The activity on "*Technology Transfer on Processing of Pako-Enriched Food Products*" for the Ayta Sambals of Botolan, Zambales and Ayta MagAntsi of Porac, Pampanga is expected to serve as an activity for community advancement and progress through developing sustainable food products that may be made available for health emergencies, disaster relief and rehabilitation works. This activity may also serve as a livelihood program for economic and sustainable development of the community. Moreover, this technology transfer intends to significantly contribute in the reduction of postharvest loses in surplus commodities as it has been a vast problem of the agricultural industry during this time of pandemic; and to impart awareness and inspire the participants on the benefits of developing healthy and sustainable food products wherein limitless opportunities are set to be discovered and profitable practices will contribute in uplifting their economic lives.

2. Objectives

Specifically, the activity aimed to:

- Create awareness on potential pako-based products;
- Develop entrepreneurial interest and competencies on pako-enriched pancit canton, chips, cookies and crackers processing;
- Impart the importance and benefits of pako-enriched pancit canton, chips, cookies and crackers processing; and
- Encourage participants to venture in pako-enriched pancit canton, chips, cookies and crackers processing for sustainable economic development of the community.

3. Type of Clients

The participants of the hands-on training were community leaders and members on the indigenous people's tribes of Ayta Sambals (Botolan, Zambales) and Ayta MagAntsi (Porac, Pampanga), and the Addictus Research and Intervention Center, Inc. project team, with a total of seventeen (17) participants. The composition for the total population of participants is composed of ten (10) women, equivalent to fifty nine percent (59%), and seven (7) men, equivalent to forty one percent (41 %). The age bracket distribution of the participants is slightly distributed, having 35% of participants on 26-36 years old bracket, 12% each on brackets 20-26, 46-55 and 56 years old and above, and 29% on 36-45 years old bracket.

4. Methodology

Training Principles

The training was conducted with an integrated approach that contained lectures, discussions, and hands-on training with actual application/ return demonstration. The generalized training principles employed on the three activities are as follows:

- A participatory discussion or exchange of thoughts rather than lecture style of teaching.
- Trainers has started based on the knowledge of the participant about the topic and draw information or expand from it.
- The discussion is participatory by nature wherein the participants were able to comprehend the discussion.
- The training followed strict time to maximize participants learning.

Subject Matter Specialists (Lecturers)

- Specialist from the Food Science Research and Innovation Center served as resource speakers, lecturers, trainers and facilitators for the said activity.



Document Code:	QF-OES-07	Revision Number:	02
Effectivity Date:	October 14, 2021	Page 3 of 6	

EXTENSION ACTIVITY ACCOMPLISHMENT REPORT

5. Brief Summary of Accomplishment

The “*Technology Transfer on Processing of Pako-Enriched Food Products: A Skills Development Training in Producing Sustainable Food Products for Health Emergencies, Disaster Relief and Rehabilitation Works*” for the community leaders and members on the indigenous people’s tribes of Ayta Sambals (Botolan, Zambales) and Ayta MagAntsi (Porac, Pampanga) was conducted in a face-to-face manner, attended by the FSRIC Extension Team as the extension facilitator, the Addictus Research and Intervention Center, Inc. as co-organizer and cooperating agency, and by the representative/members of the two aforementioned IP community as the participants of the activity. The activity was held at Benguet State University’s Food Science Research and Innovation Center and ATBI/IC Conference Hall on April 7 and 8, 2022.

Day1. *Introductory Orientation and Entrepreneurial Mind-Setting; and Hands-on Skills Training in Pako-enriched Pancit Canton and Crackers Processing*

As to welcome the participants for the 2-day activity, a short opening program and introductory orientation was conducted on the first day of the activity at the ATBI/IC Conference Hall, as facilitated by the FSRIC. The program formally incepted with the calling to order of the participants and immediately followed by the opening message of Mr. Leonardo Estacio, Jr., the project leader of Addictus RIC, Inc. on the IKSP Project in which this activity is anchored unto. Mr. Estacio provided a brief rationale on the



activity and the purpose of such for the community where the participants belong. In addition, he has introduced the participants together with their IP tribe and community origin, and the project team of the Addictus RIC Inc. who will be facilitating and will also be participating on the hands-on training on pako-enriched food products processing. Mr. Estacio ended his message by thanking the FSRIC in co-organizing the activity and having served as learning service provider for the valuable knowledge and skills to be acquired after the 2-day activity.

Mr. Lesley Dale G. Umayat, the resource speaker of the activity and the Director of FSRIC, has then took over and proceeded with his introductory orientation and entrepreneurial mind-setting discussion for the participants. Mr. Umayat preliminarily welcomed the participants and appreciated their efforts in attending the 2-day activity despite the current pandemic situation and the lengthy travel that the participants have gone through in order to be physically present on the venue. After which, he discussed briefly the



profile of FSRIC especially its products and services offered. Subsequently, he then began his discussions on the features, characteristics and demographics of Pako, followed by the discussions on the technologies on pancit canton, crackers, chips and cookies enriched with pako. Within the lecture, Mr. Umayat was able to disclose the raw materials, equipment, procedure and investment analysis in producing pancit canton, crackers, chips and cookies which were essential for the training and also for the mind-setting of participants on what to expect and how will they be able to apply and utilize it to be a community food processing enterprise that will specialize in utilizing pako as enrichments. Mr. Umayat also nattered economic and social opportunities in processing and development of pako-enriched food products wherein he was able to share some entrepreneurial strategies and personal experiences as an entrepreneur. Mr. Umayat ended his lecture and orientation with a challenge for the participants to aim for producing pancit canton, crackers, chips and cookies that are



Document Code:	QF-OES-07	Revision Number:	02
Effectivity Date:	October 14, 2021	Page 4 of 6	

EXTENSION ACTIVITY ACCOMPLISHMENT REPORT

pako-enriched since it is perceived that if this activity will be pushed through, the participants' community will be the first one to commercialize these pako-enriched food products which will be potentially marketable in various markets.

The orientation and lecture activity has concluded with a closing message from Mr. Estacio wherein he thanked Mr. Umayat for the comprehensive discussion as it provided an arousal of interest for the participants on the possibilities and opportunities in pako-based food product processing. Further, the participants also gave their message of appreciation and insight sharing after the lecture. One of the participants, Ms. Jessica King, mentioned that "... malaking tulong po itong mga natutunan at matututunan pa namin sa training po na ito dahil bilang kaming mga kabataang ayta, nais rin po naming makatulong sa tuloy-tuloy na pag unlad ng komunidad namin na pinangalagaan ng mga ninuno namin at maraming tanim pa po ang pwede namin i-develop, hindi lang po pako, sa pag gawa ng mga nasabing produkto...". Mr. Umayat responded with the insights of the participants by mentioning that opportunities are limitless in developing such products and as they will see and experience the actual processes on the trainings later, they will surely be more eager to learn and share these learnings to their community as they go back home.



The short orientation and lecture has formally ended with a group photo for documentation purposes and the participants were then assisted to head to the FSRIC processing facility for the actual training wherein the hands-on training on preliminary procedures of crackers processing and pancit canton processing shall take place.



For the continuation of the activity, the participants were then reoriented and prepared at the FSRIC for the hands-on training. Mr. Umayat has then instructed the participants in wearing appropriate attire and gears for food processing before entering the facility. As the participants enter the processing facility, Mr. Umayat is also giving a tour on the various parts of the FSRIC. Upon entering the facility, the participants are then endorsed unto the supervision of Mr. Joffrey Bayating, Ms. Estela Anniban, Mr. Judymar Paquito and Mr. Paul Peg-ang, the FSRIC Processing team, for the actual hands-on training on pako-enriched crackers and pancit canton processing. The hands-on training has begun with the demonstration procedures in preparing pako puree that will be used in all products to be developed. As part of the pilot hands-on training, the preliminary procedure in crackers making were then demonstrated to



Document Code:	QF-OES-07	Revision Number:	02
Effectivity Date:	October 14, 2021	Page 5 of 6	

EXTENSION ACTIVITY ACCOMPLISHMENT REPORT



the participants and after such, the participants were able to experience the process of mixing, molding, steaming and cutting of the cracker mixture before dehydration. As the dehydration of the crackers need longer period for drying, the hands-on training has then proceeded with the pancit canton processing. Procedures in mixing, sheeting, cutting, boiling and frying was demonstrated by the trainors then another batch of mixture was then prepared for the participants to experience the said procedures with the guidance and assistance of the trainors. The day 1 of hands on training ended with the activity on proper packing of the noodles after frying as a final product.

Day 2. Hands-on Skills Training in Pako-enriched Chips and Cookies Processing

The second day for the hands-on training commenced with the review of previous day's activity by Mr. Umayat. As to continue the training, the participants were immediately headed to the processing facility in order to continue the learning experience in pako-enriched food products processing. The FSRIC processing staff/ trainors has carried on with the training on the checking of the dehydrated crackers. The participants were shown with the actual dehydrated crackers and after which, the demonstration on frying the crackers were demonstrated. Participants were also able to experience the frying method and were able to learn the tactics and strategies in frying the crackers since it is very critical not to overcook or burn the crackers.

Chips processing enriched with pako was the subsequent training activity that took place after the crackers. Just like in pancit canton, the procedures in mixing, sheeting, cutting, boiling and frying was demonstrated by the trainors then another batch of mixture was then prepared for the participants to experience the said procedures with the guidance and assistance of the trainors. The participants also enjoyed the experience in frying as they were also able to grasp the methods of such and they easily finished the tasks on cooking all the prepared chips

Afterwards, the participants were then trained with the cookies making. As a sole pastry product, the method of preparing cookies is very different for the previously demonstrated products. The procedures in ingredient





Document Code:	QF-OES-07	Revision Number:	02
Effectivity Date:	October 14, 2021	Page 6 of 6	

EXTENSION ACTIVITY ACCOMPLISHMENT REPORT

preparation, mixing, weighing, molding and baking was demonstrated by the trainers and as the cooking process takes place, another batch was again prepared for the participants for them to experience the methods mentioned especially the molding of the cookies wherein the participants had a good time performing it. In the afternoon session, the participants were then tasked with the activity on proper packing of the crackers, chips and cookies after frying and baking for the final product outputs – which served as the culminating activity on the hands-on training part of the 2-day activity.



The closing program has then taken place on the same venue. Mr. Estacio opened the program wherein he gave his synopsis of the activity and has discussed again the purpose and benefits of the recently concluded hands-on training. He then further appreciated with so much gratitude Mr. Umayat and the whole FSRIC for sharing the knowledge on the technologies of pancit canton, crackers, cookies and chips that are enriched with pako which may provide sustainability to the community adaptors, especially with the goal to develop sustainable food products for health emergencies, disaster relief and rehabilitation works. He also thanked the participants and he hoped that once they've left the vicinity of the Center, they will be proud that they have learned a new set of skills and knowledge esp. on food processing. Mr. Umayat has also gave his closing remarks by thanking the Addictus RIC Inc. for co-organizing the activity and conducting this IKSP project that is significant



for uplifting the lives of the indigenous people in Zambales and Pampanga. Mr. Umayat has also thanked the participants for their active participation on the 2-day activity and reiterated that it must be a challenge for the participants to develop their own food processing of pako-based food products since this to-be developed enterprise will surely increase even higher the economic prominence of the community where they belong for sustainable development.

The hands-on training activity has culminated with the awarding of certificates to the resource speaker, organizers, facilitators and participants, distribution of processed products as tokens, and the group picture taking for documentation and report purposes.





**EXTENSION ACTIVITY
 ACCOMPLISHMENT REPORT**

Document Code:	QF-OES-07	Revision Number:	02
Effectivity Date:	October 14, 2021	Page 7 of 6	

The activity on *“Technology Transfer on Processing of Pako-Enriched Food Products: A Skills Development Training in Producing Sustainable Food Products for Health Emergencies, Disaster Relief and Rehabilitation Works”* was considered to be astonishingly conducted wherein the goals and objectives have been accomplished and carried out. As it is the responsibility and mandate of the Food Science Research and Innovation Center - to disseminate useful technologies for the improvement of life within the communities – it has been another opportunity to effectively operate and realize such mandate. The FSRIC management and staff are grateful for the opportunity to share their knowledge to the participants as another community who has adopted the technologies that the BSU has developed, in the hopes that the said participants will continuously apply and utilize this transferred technologies for economic and sustainable living development.

6. Actual Financial Report

Item Description			Actual Cost (PhP)
PARTICULARS	QTY	UNIT COST	
Training Expense			
• Training supplies and Materials	Raw materials, Basic ingredients, packaging materials, office supplies, and other processing supplies		P 9,488.00
Meals and Snacks			
AM Snacks	27 pax	27 Pax x P 100.00 x 2 days	P 5,400.00
PM Snacks	27 pax	27 Pax x P 100.00 x 2 days	P 5,400.00
Lunch	27 pax	27 Pax x P 300.00 x 2 days	P 16,200.00
TOTAL			P 36,488.00

**Note: Actual utilization of funds for the training has been handled by the Addictus Research and Intervention Center, Inc.’s personnel in charge/ project leader.*

7. Problems Met

The *“Technology Transfer on Processing of Pako-Enriched Food Products: A Skills Development Training in Producing Sustainable Food Products for Health Emergencies, Disaster Relief and Rehabilitation Works”* was successfully accomplished and carried out although concerns on late arrival of the participants still arouse that needs to be looked forward to be avoided.

8. Recommendation/s

For further related or the same activities, consultation and proper arrangement on scheduling must be anticipated, strictly done and must be followed to avoid schedule conflicts and to set priorities on it.



**EXTENSION ACTIVITY
ACCOMPLISHMENT REPORT**

Document Code:	QF-OES-07	Revision Number:	02
Effectivity Date:	October 14, 2021	Page 8 of 6	

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