



DETAILED PRESENTATION OF PROGRAMMS CREATED and UPDATED PER UNIVERSITY

"This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein"

June 2019

THAILAND

KASETSART UNIVERSITY

Master Program in Food Science at the Department of Food Science and Technology, of Agro-Industry, Kasetsart University (KU). The following Master courses have been renewed and taught updated contents based on the modules developed during the course of AsiFood project.

For updated courses

The following courses have been updated and taught at the Department of Food Science and Technology, of Agro-Industry, Kasetsart University (KU) since academic year 2017-2018.

- (1) 01052542 Hygienic Problems of Foods (2 credits, 30 lecture hours/semester)
- (2) 01052517 Advanced Food Science and Technology (3 credits, 45 lecture hours/semester)
- (3) 01052546 Health Foods and Nutraceuticals (2 credits, 30 lecture hours/semester)

For each course please state:

1. Title(s) : 01052542 Hygienic Problems of Foods
2. Which degrees does this course count towards? Master degree
3. Level of study : Master of Science in Food Science
4. List of subjects to be updated and credits for each of them

The following subjects were updated into 01052542 course.

- 4.1 Biological hazards and food allergens
- 4.2 Food hazards, cleaning and sanitizing, water safety, pest control and hygienic design in food processing
- 4.3 Legislation and regulations of hygiene in food process and food safety management system

5. If accreditation is needed provide the date of accreditation and accreditation body
Accreditation is not required as the updated subjects were integrated into the existing course.

6. Why it was decided to update this course rather than create a new one?

This course was approved by the academic committee at the faculty level as well as the Graduate School of KU.

The subjects updated into the course curriculum were recommended by stakeholders to integrate into the course and these subjects are in the interest of food industries and academics.

7. What % of the course will be changed?

So far, the changed are approximately 20-40% of the course. Since there are more interesting subjects in the developed modules, the % of the change will be 60%.

8. Number of students enrolled in these courses : 10-20 students

9. Which of the equipment purchased have been used for this course and for what purpose?

This course does have the laboratory session as part of the assignment. We used most of the equipment for student semester project (15 hours/semester).

Date of submission to intra-university organs : none

Date of implementation (up and running)

This course offers to graduate student every other year. We started to integrate the updated subject in the second semester of academic year 2017.

1. Title course : 01052517 Advanced Food Science and Technology
2. Which degrees does this course count towards? Master degree
3. Level of study Master of Science in Food Science
4. List of subjects to be updated and credits for each of them

The following subjects were updated into 01052542 course.

- 4.1 Chemical and biological reactions affecting food quality and safety
- 4.2 Innovative adopted technologies and effects
5. If accreditation is needed provide the date of accreditation and accreditation body
Accreditation is not required as the updated subjects were integrated into the existing course.
6. Why it was decided to update this course rather than create a new one?
This course was approved by the academic committee at the faculty level as well as the Graduate School of KU.
The subjects updated into the course curriculum were recommended by stakeholders to integrate into the course and these subjects are in the interest of food industries and academics.
7. What % of the course will be changed?
So far, the changed are approximately 20% of the course. Since there are more interesting subjects in the developed modules, the % of the change will be 40%.
8. Number of students enrolled in these courses : 10 students
9. Which of the equipment purchased have been used for this course and for what purpose?
This course does not have the laboratory session. The equipment was used for demonstration in some related-topics.

Date of submission to intra-university organs : none

Date of implementation (up and running)

This course offers to graduate student every year. We started to integrate the updated subject in the first semester of academic year 2017.

1. Title course : Health Foods and Nutraceuticals
2. Which degrees does this course count towards? Master degree
3. Level of study : Master of Science in Food Science
4. List of subjects to be updated and credits for each of them

The following subjects were updated into 01052542 course.

- 4.1 Legislation and health claims
5. If accreditation is needed provide the date of accreditation and accreditation body
Accreditation is not required as the updated subjects were integrated into the existing course.
6. Why it was decided to update this course rather than create a new one?
This course was approved by the academic committee at the faculty level as well as the Graduate School of KU.
The subjects updated into the course curriculum were recommended by stakeholders to integrate into the course and these subjects are in the interest of food industries and academics.
7. What % of the course will be changed?
So far, the changed are approximately 10% of the course. Since there are more interesting subjects in the developed modules, the % of the change will be 20%.



8. Number of students enrolled in these courses : 10 students
9. Which of the equipment purchased have been used for this course and for what purpose?
This course does not have the laboratory session. The equipment was used for demonstration in some related-topics.

Date of submission to intra-university organs : none

Date of implementation (up and running)

This course offers to graduate student every other year. We started to integrate the updated subject in the second semester of academic year 2017.

Future plan

We plan to offer the training course(s) based on subjects developed in either Module 1 or 3 by the end of this year with the collaboration from PSU and AIT. Initially, we plan to offer the training courses in both Thai and English and we expect that we will organize the international course for ASEAN participants in English.

AIT

For new courses

What new courses will the project implement in your HEI?

- Food Engineering and Bioprocess Technology (FEBT)
- Agribusiness Management (ABM)

Level of study:

- Masters and PhD.

List of subjects and credits for each of them:

1. Innovation in Safety and Quality in Food Production System (4 credit)
2. Methods in Bioprocessing and Molecular Biology (2 credit)
3. Processing Effects on Functional Components of Foods (4 credit)

Date of accreditation and accreditation body:

- Not required

Number of students to be accepted in the first year/ second year:

- 20 – 25

Number of trained teaching staff:

- 1

List of equipment purchased for this course and for what purpose? (if applicable)

List of equipment	Purpose
Media (Desktop, Laptop, Logitech Conference cam)	For training, e-learning, webinar, dissemination, video conferencing
Instrument: Protein Digestion Unit, Colony counter, digital plus, pH meter, homogenizer, turbidity meter, anaerobic jar, densitometer, undergrad stirrer hotplate, vacuum pump, micropipette, microplate reader	For food safety related experiments, students practical,

Date of submission to intra-university organs: August 2017

Date of implementation (up and running): January 2018

For updated courses

Which existing courses will be updated in your HEI?

- Food Engineering and Bioprocess Technology
- Agribusiness Management

For each course please state:

Which degrees does this course count towards?

- Master of Science in Food Engineering and Bioprocess Technology
- Master of Engineering in Food Engineering and Bioprocess Technology
- Doctor of Philosophy in Food Engineering and Bioprocess Technology
- Doctor of Engineering in Food Engineering and Bioprocess Technology
- Doctor of Technical Science in Food Engineering and Bioprocess Technology

- Master in Agribusiness Management
- Doctor of Philosophy in Agribusiness Management

Level of study

- Masters and PhD

List of subjects to be updated and credits for each of them

- Food Process Engineering (3 credit)
- Bioprocess Technology (3 credit)
- Food Process Engineering Laboratory (3 credit)
- Food Supply Chain Management (3 Credits)

If accreditation is needed provide the date of accreditation and accreditation body

- Not required

Why it was decided to update this course rather than create a new one?

- The existing course was focused more on academic learning. In order to mind the gap between industrial research and academic study, it was decided to update the previous course rather than creating a new one.

What % of the course will be changed?

- 25% new course + 75% old course

Number of students enrolled in these courses

- 17 students (in the year 2018)

Which of the equipment purchased have been used for this course and for what purpose?

List of equipment	Purpose
Media (Desktop, Laptop, Logitech Conference cam)	For training, e-learning, webinar, dissemination, video conferencing
Instrument: Protein Digestion Unit, Colony counter, digital plus, pH meter, homogenizer, turbidity meter, anaerobic jar, densitometer, undergrad stirrer hotplate, vacuum pump, micropipette, microplate reader	For food safety related experiments, students practical,

Date of submission to intra-university organs: August 2017

Date of implementation (up and running): January 2018

In addition to this information:

- Could you please further explain how each equipment has been used during the project activities and has supported the achievement of the project objectives
 - The media equipment (laptop, conference camp) were used on an interactive workshop, “Short Term Training Course (STTC)” organized by Asian Institute of Technology on 20-26 May 2018. The professional from industries, government organization, undergraduate, masters and PhD students participated on this workshop on food safety. The media equipment was used during International Conference on “Innovative Food Ingredients and Food Safety” organized by AIT on 12-13 September 2018 for the dissemination of project’s outcome.
 - The laboratory equipment was used on “Workshop on the workflow of Polymerase Chain Reaction (PCR)” organized by AIT on 19 March 2018. The laboratory equipment is used in coursework experiment and master thesis research.



- The postgraduate students enrolled for Food Engineering and Bioprocess Technology program have continuously been getting laboratory training during the course work with all these instruments. Similarly, all the postgraduate students have extensively using all these instruments during their Master thesis/ Doctoral dissertation works.
- The Professionals and Interns from Industries and other academic institutions including from South East Asia, South Asia and Africa are also get hands-on-training on food safety and using all these instruments.

PSU
For new courses

What new courses will the project implement in your HEI?

For each course please state:

Title **Animal Science**
 Level of study **Master Level**
 List of subjects and credits for each of them
1. Advanced Animal Production and Safety of Animal Products 3 Credits (Thai System)
 date of accreditation and accreditation body **15 September 2018**
 Number of students to be accepted in the first year/ second year **About 5 students**
 Number of trained teaching staff -
 Internship /placements (if applicable) -
 List of equipment purchased for this course and for what purpose? (if applicable) **Lipid extraction-**
Date of submission to intra-university organs **7July 2017**
Date of implementation (up and running) **Semester 1, Academic year 2018**

For updated courses

Which existing courses will be updated in your HEI?

For each course please state:

1. Faculty of Natural Resources

Title(s) **Pest Management**
 Which degrees does this course count towards? **B.Sc. in Pest Management**
 Level of study **Bachelor Level**
 List of subjects to be updated and credits for each of them **Principles of Pest Management (4 credits)**
 If accreditation is needed provide the date of accreditation and accreditation body
The accreditation is not needed for course improvement but to report on the changes before and after the subject implementation.
 Why it was decided to update this course rather than create a new one?
Because the contents are similar and already fit in the curriculum.
 What % of the course will be changed? **25%**
 Number of students enrolled in these courses : **30**
 Which of the equipment purchased have been used for this course and for what purpose? **None**
Date of submission to intra-university organs **No need for submission**
Date of implementation (up and running) **Semester 2, Academic year 2017**

2. Faculty of Agro-industry

Title(s) **Food Science and Technology**
 Which degrees does this course count towards? **M.Sc. in Food Science and Technology**
 Level of study **Master Level**

List of subjects to be updated and credits for each of them

1. **Advanced food analysis (3 credits)**
2. **Food Chain Quality and Safety Management System (3 credits)**
3. **Food Safety and Risk Assessment (3 credits)**

If accreditation is needed provide the date of accreditation and accreditation body

The accreditation is not needed for course improvement but to report on the changes before and after the subject implementation.

Why it was decided to update this course rather than create a new one?

Because the contents are similar and already fit in the curriculum.

What % of the course will be changed? **80%**

Number of students enrolled in these courses

Which of the equipment purchased have been used for this course and for what purpose? **Oven, Autoclaves**

Date of submission to intra-university organs

No need for submission

Date of implementation (up and running)

Summer 2017 and Semester 1, 2018

In addition to this information:

- Could you please further explain how each equipment has been used during the project activities and has supported the achievement of the project objectives

Lipid extraction: The equipment has been used for teaching students on analysis of composition of agricultural products which is in the scope of food quality that supports the objectives of project.

Oven: The piece of equipment is used for teaching students in the area of food quality which fully support the objectives of the project on food quality and food safety.

Autoclaves: The piece of equipment is used for teaching students in the area of food quality which fully support the objectives of the project on food quality and food safety.

VIETNAM

HUST

New courses

For each course please state:

Title: Quality and Safety Assurance in Food Industry, 3(3-0-0-6), ECTS: 5

Level of study: Master Program

Number of students to be accepted in the first year/ second year: 9/8

Date of implementation (up and running): From 1 August 2018

Updated courses

HEI	Name of the Master's degree course	Date of the official validation of the course by the HEI/ Starting date	Number of ECTS credits	Type of course and further detail
HUST	Master of Food Technology	Mai 2018	5 ECTS	Elective course: BF 6831, Quality Management in Primary Production in Food Industry,
			5 ECTS	Elective course: BF 6832, Food Analysis
			5 ECTS	Elective course: BF 6830, Quality and Safety Assurance in Food Industry
	Master of Quality Assurance and Food Safety	Août 2018	5 ECTS	Compulsory course: BF 6831, Quality Management in Primary Production in Food Industry
			5 ECTS	Compulsory course: BF 6832, Food Analysis,
			5 ECTS	Compulsory course: BF 6830, Quality and Safety Assurance in Food Industry

- equipment

GC 2014 Shimadzu has been purchased under AsiFood project in August 2018. This equipment is using for the course ASIFOOD4.6_M2C2.2Food Analysis:

- To train student in perform advanced analysis methods
- To train student how to validate a method to monitor chemical hazards (volatile) in food
- To teach student how to implement parts of standard analytical methods to monitor chemical hazards in food to perform laboratory analyses for routine chemical testing

VNUA

For updated courses

Master Program in Food Technology

For each course please state:

Title(s) Food Technology

Which degrees does this course count towards? Msc. Program

Level of study

List of subjects to be updated and credits for each of them

See in table. In total we upgrade 28/60 credits of Msc Program.

If accreditation is needed provide the date of accreditation and accreditation body

In plan, Msc. training program of VNUA will be accredited after 2020.

Why it was decided to update this course rather than create a new one?

An existing Msc. program of Food Technology at VNUA, Vietnam has been developed for 6 years under a frame work of international project funded by Belgium. It is quite new and advanced. When VNUA join Asifood project and our lecturers are trained in EU, we decided to upgrade the program rather than develop a new one.

What % of the course will be changed? We add some missing information which is 2-5% of the courses.

Number of students enrolled in these courses : 15 students

Which of the equipment purchased have been used for this course and for what purpose?

All equipment purchased have been used not only for Msc students to do their practices and thesis, but also for the faculty Ph.D students and some groups of under-graduate students. All equipment are helpful for us to improve our student research's skill.

Date of submission to intra-university organs

Date of implementation (up and running) For annual Msc. students who are accepted to study at Fact. of Food Technology.

In addition to this information:

- Could you please further explain how each equipment has been used during the project activities and has supported the achievement of the project objectives

All equipment used for training and improving research skill of our lecturers, PhD, Msc and a number of under-graduate student. Detail is in attached file.

ASIFOOD	VNUA	Upgraded content
---------	------	------------------

Code	Course Title	Course Title	Code	Credits	
M1.C1.2	Food Quality In Primary Production	Agricultural product analysis	CP07015	3	Food legislation (national and international)
		Storage and processing technology for livestock products	CP07021	2	
		Postharvest handling of plant products	CP07047	2	
		Harvest, storage and processing technology for seafood products	TS07049	2	
M2.C2.1	Food Quality Management System	Food contaminants analysis	CP07032	2	Food legislation (national and international)
		Quality management system in agricultural products and foodstuffs	CP07046	2	
M2.C2.2	Food Analysis	Food contaminants analysis	CP07032	2	Sampling Techniques
		Agricultural product analysis	CP07015	3	
		Food sensorial properties	CP07049	2	
M3.C3.1	Food Safety Issues At Manufacturing Processes	Advanced food processing technology	CP07034	2	Water safety, Waste Minimization, Life Cycle Assessment and Carbon Footprint
		Quality management system in agricultural products and foodstuffs	CP07046	2	
		Additives in food preservation	CP07037	2	
M3.C3.2	Safety And Standardization Of Food Products	Advanced chemical and biological food safety	CP07030	3	Food legislation (national and international), Auditing in food processing industries
		Quality management system in agricultural products and foodstuffs	CP07046	2	
		Food chain integration	CP07035	3	
		Food and agricultural products supply chain management	CP07040	3	
		Total		28	

1	Chroma Meters Measuring Head including basis accessories	CR-400, Konica Minolta, Japan	This equipment is used to measure food colour, a parameter which indicate food quality
	Light Projection Tube for CR - 400 (no disc)	CR-400, Konica Minolta, Japan	
	Light Projection Tube for CR - 400	CR-400, Konica Minolta, Japan	
	Glass light Projection Tube (for CR-400)	CR-400, Konica Minolta, Japan	
	Glass light Projection tube (for CR-400)	CR-400, Konica Minolta, Japan	
2	Kit Detector FID including	Accessory of Gas Chromatography, Perkin Elmer, USA	This FID detector is used for GC which analyse several parameters of food quality and food safety
	ASXL FID Assembly, 230 V	Accessory of Gas Chromatography, Perkin Elmer, USA	
	RESTRICTOR ASSY-ASXL BLUE 6	Accessory of Gas Chromatography, Perkin Elmer, USA	
	RESTRICTOR ASSY-ASXL BLACK(4)	Accessory of Gas Chromatography, Perkin Elmer, USA	
	FID Amplifier	Accessory of Gas Chromatography, Perkin Elmer, USA	
	Graph/Ves Ferrule 1/8 x 1/16", Pkg. 10	Accessory of Gas Chromatography, Perkin Elmer, USA	
3	XLS+ LTS PIPET 100-1000 uL	Mettler Toledo, Switzerland	This equipment used to analyse content of biochemical compounds
	XLS+ LTS PIPET 10-100 uL	Mettler Toledo, Switzerland	
	XLS+ LTS PIPET 20-200 uL	Mettler Toledo, Switzerland	
	XLS+ LTS PIPET 0.5-10 uL	Mettler Toledo, Switzerland	
4	Portable ethylene gas analyzer	Model ICA 56, Spain	This equipment used to analyse fruit ripening
5	Magnetic hot plate stirrer	IKA, Germany	This equipment used for sample preparation

NLU

For new courses

For each course please state:

Title: Food Technology (English program)

Level of study: Master of Science

List of subjects and credits for each of them:

Food safety and quality in primary production (ASIFOOD Module 1): 3 credits

Food safety and food quality analysis (ASIFOOD Module 2): 3 credits

Safety and Quality Assurance in Food Processing Industry (ASIFOOD Module 3): 3 credits

date of accreditation: estimated to be accredited in 2020

accreditation body: Nong Lam University Ho Chi Minh City

Number of students to be accepted in the first year/ second year: 15 students per year

Number of trained teaching staff: 03

List of equipment purchased for this course and for what purpose? (if applicable) none

Date of submission to intra-university organs: estimated to be submitted at the end of 2019

Date of implementation (up and running) estimated to be implemented in 2020

For updated courses

For each course please state:

Title(s): Food Technology (Vietnamese program)

Which degrees does this course count towards?

Level of study: Master of Science

List of subjects to be updated and credits for each of them:

- Food quality analysis (ASIFOOD Module 2): 2 credits

If accreditation is needed provide the date of accreditation and accreditation body

date of accreditation: July 2018

accreditation body: Dean of Faculty of Food Science and Technology - Nong Lam University Ho Chi Minh City

Why it was decided to update this course rather than create a new one?

We planned to create a new program taught in English and integrated all three modules from ASIFOOD

What % of the course will be changed? 50% (added practical session)

Number of students enrolled in these courses: 11

Which of the equipment purchased have been used for this course and for what purpose? None. We only purchased some chemicals used in the trial teaching course.

Date of submission to intra-university organs: July 2018

Date of implementation (up and running) July 2018

In addition to this information:

· Could you please further explain how each equipment has been used during the project activities and has supported the achievement of the project objectives

The IT equipment was used and well-supported for processing all activities of the project such as documentation, meeting, conference, trial teaching course.

CAMBODIA

RUA

For new courses

For each course please state:

Title Food Science and Technology

Level of study Master of Science

List of subjects and credits for each of them: Food Quality and Safety Management (3-0) three credit
date of accreditation and accreditation body The program was approval from the Rector of University

Number of students to be accepted in the first year/ second year 4 student in first year and 1 student in second year

Number of trained teaching staff :5

Internship /placements (if applicable) not yet applied with master students but only the undergraduate students. We are under preparation with a private company.

List of equipment purchased for this course and for what purpose? (if applicable) during the master program that support from AsiFood project had purchased a spray dryer and IT equipment to support the activity and study of students.

For updated courses

For each course please state:

Title(s) Food Science and Technology

Which degrees does this course count towards?

Level of study Master Degree

List of subjects to be updated and credits for each of them : We plan to review and update the existing master curriculum in the end of year 2019

If accreditation is needed provide the date of accreditation and accreditation body Master program was approval by the Rector of University

Why it was decided to update this course rather than create a new one? Because until now the number of enroll student not increase

What % of the course will be changed? Not defined

Number of students enrolled in these courses this year : only 1 student

Which of the equipment purchased have been used for this course and for what purpose? Spray dryer for student practice to dry the flavor or natural color

Date of submission to intra-university organs : NA

Date of implementation (up and running)

In addition to this information: A few students want to study only in the weekend because they do not want to lose their existing job.

- Could you please further explain how each equipment has been used during the project activities and has supported the achievement of the project objectives

RUA bought a Spray dryer, it used to support the activity of master students to learn the natural color and flavor powder. Through this equipment student can increase their practical capacity as well.

ITC
1. For new courses

What new courses will the project implement in your HEI?	Under the Master Program of Agro-Industry and Environment, four courses have been implemented to the program
<i>For each course please state:</i>	
Title	Master Program of Agro-Industry and Environment
Level of study	Master 1 and 2
List of subjects and credits for each of them	1- Quality management system and food safety 2- Advanced food microbiology 3- Advanced analytical chemistry 4- Food laws and certification system
Date of accreditation and accreditation body	2017
Number of students to be accepted in the first year/ second year	None (2017-2018 and 2018-2019)
Number of trained teaching staff	Three teaching staffs have been trained in food quality and safety (primary production, downstream process and food quality analysis).
<i>Date of submission to intra-university organs</i>	2017
Date of implementation (up and running)	The courses have been added since 2017 into our master program but the program was not implemented due to lack of student registration for two academic years, 2017-2018 and 2018-2019. New master program is expected to implement from academic year 2019-2020.

2. For updated courses

Which existing courses will be updated in your HEI?	There is four updated courses to be added into the master program of Agro-Industry
<i>For each course please state:</i>	
Title(s)	1- Quality management system and food safety 2- Advanced food microbiology 3- Advanced analytical chemistry 4- Food Processing 5- Food laws and certification system
Level of study	Master 1 and 2
List of subjects to be updated and credits for each of them	See the part "Additional information on Master program of Agro-Industry" below
If accreditation is needed provide the date of accreditation and accreditation body	2019
Why it was decided to update this course rather than create a new one?	Course subjects has already added into the program but more content in the subject need to be improved and updated.
What % of the course will be changed?	Approximately 25 % of the courses content is updated for the master program

Number of students enrolled in these courses	Expected at least 10 for master program (2019-2020)
Which of the equipment purchased have been used for this course and for what purpose?	1- Quality management system and food safety (equipment numbers 1, 2, 3, 6) 2- Advanced food microbiology (equipment numbers 4, 5, 8-11) 3- Advanced analytical chemistry (equipment numbers 6-12) 4- Food Processing (equipment number 13, 14)
Date of submission to intra-university organs	2019
Date of implementation (up and running)	New master program is expected to be implemented for academic year 2019-2020.

Additional information on Master program of Agro-Industry

The curriculum of Agro-Industry and Environment has been prepared and agreed by university. However, the **Program of Food Safety and Quality** of AsiFood has not been applied since it lacks of students registered for master program in Agro-Industry and Environment for academic year 2017-2018 and 2018-2019. Moreover, due to institutional restructure, some programs have to be modified and updated in accordance with the establishment of research units under Research and Innovation Centre. The master of Agro-Industry and Environment has been modified to *Master of Agro-Industry* with some content of the curriculum, which will be applied from new academic year 2019-2020. As reference, the content of master program is attached below.

		Courses	Credit
M1	M1-1	Nutrition and product quality	2
		Quality management system and food safety	2
		Advanced food microbiology	3
		Biotechnology	3
		Physical unit operation	3
		Entrepreneurship	2
		Total-M1-1	15
	M1-2	Advanced analytical chemistry	2
		Methods for Food Stabilizing	3
		Food Processing	3
		Food additives and functional ingredients	2
		Industrial management and economics	2
		Total-M1-2	12
	Total-M1		27
M2	M2-1	Research Methodology	1
		Applied statistics	2
		Food laws and certification system	2
		Food Innovation and development	3
		Biomass conversion	3
		Water quality management	2
		Liquid and solid waste management	2
		Total-M2-1	15
	M2-2	Thesis	12
		Total-M2-2	12
	Total-M2		27
TOTAL			54

Even the program has not been implemented for academic year 2017-2018 and 2018-2019, but some contents contain food safety contents and has been introduced to undergraduate students in the courses of Food Microbiology, Food Risk, Quality Assurance and Food Preservation.

3. In addition to this information:

During implementation of AsiFood Project, 18 equipment were purchased with different applications as the followings:

Table 3. Equipment and their applications

No	Description	Applications
1	Universal oven UN75 (2 units)	To dry in order to check the moisture content of food samples and to make food into powders as food development project
2	T25 digital ultra-Turrax, package complete set	To homogenize some food samples before lab analysis
3	Refrigerator (270L) (2 units)	To preserve the food samples at 4°C and freezing temperature before lab experiments
4	Shimadzu moisture balance	To measure moisture content of final food products within a short period of time
5	Meter Aqualab PawKit portable water activity instrument	To measure water activity of final food products within a short period of time
6	Portable colorimeter WR18-4mm/8mm	To measure the color of final food products by comparing with the standards
7	Digital hand-held "Pocket" Refractometer PAL-1	To check °Brix of final food products
8	Micropipette 500-5000µl	For physic-chemical analysis of food products
9	Micropipette 100-1000µl	For microbiological analysis of food products
10	Micropipette 20-200µl	For microbiological analysis of food products
11	Micropipette 2-20µl	For microbiological analysis of food products
12	Standard consistometer	To check the viscosity of final food products
13	Vacuum packing machine, Model: DZ-400	To extends shelf-life of new developed food products, ensures quality, prevents products from drying out, protects it from outside influences and improves hygienic handling.
14	Cup automatic sealing machine, Model: HU-QDFQ95-2	For instant fruit juice developed during food processing and food exhibition
15	pH benchtop meter with stand, brand: Mettler-Toledo, Model: Mettler Toledo (2 units)	To check the pH of final food products
16	Complete vacuum filter system with 500mL magnetic filter and Whatman filters	For advanced microbiological analysis of food samples in Master's level