



PRESENTATION FOR JASSO SHORT-TERM EXCHANGE STUDENT



CONTENT

1. Self-introduction
2. Undergraduate study
3. Current study in Vietnam
4. Study plan at GSGES - Kyoto university

Student: Do Thi Phuong Thao

Supervisor: Prof. Shigeo FUJII - GSGES

Kyoto, 24th April, 2013

1. SELF-INTRODUCTION

Full name: Do Thi Phuong Thao

Nationality: Vietnamese

Occupation: Officer at Hanoi Department of Natural Resources & Environment/Department of Water Resources & Meteo-hydrology



Academic: M2 student - Hanoi University of Science and Technology (HUST) – School of Environmental Science and Technology/Department of Environmental Management

- ❖ Study duration at GSGES: 6 months (4th April ~ 26th September, 2013)
- ❖ Supervisor at GSGES: Prof. Shigeo FUJII
- ❖ Supervisor at HUST: Dr. Van Dieu Anh

2. UNDERGRADUATE STUDY

- ❖ **Thesis:** Potential recovery of starch from starch waste in cassava production process to produce foodstuff for cattle (A case study: Duong Lieu craft-village, Hoai Duc district, Ha Tay province)
- ❖ **Objective:** To evaluate recovery possibility of starch from cassava production process
- ❖ **Methodology:** using *Endomycopsis fibuliger* yeast to synthesize protein from starch waste



❖ Result:

Generation 1

48h, 30°C, pH: 4~5

(50% starch waste + 50% rice bran): 89.757%A
(NH₂)₂CO (0.243% A), *Endomycopsis* (10%A)

A (g)

Product: Starch: 2.95%; Protein: 0.65% (48% starch was synthesized)

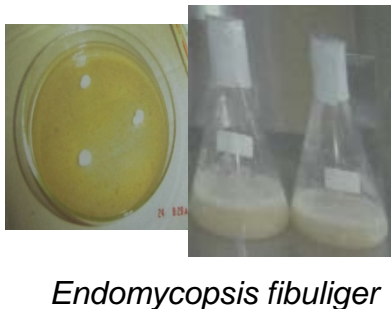
Generation 2

48h, 30°C, pH: 4~5

(50% starch waste + 50% rice bran): 89.757%B
(NH₂)₂CO (0.243% B), Generation 1 (10%B)

B (g)

Product: Starch: 3.63%; Protein: 0.62% (36% starch was synthesized)



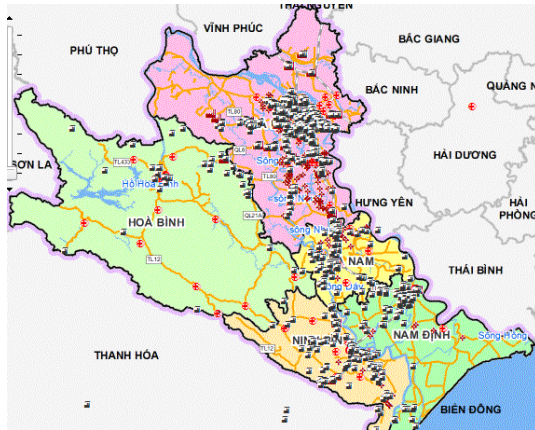
Conclusion and recommendation:

- It is possible to produce foodstuff for cattle from starch waste (need further research)
- It helps to reduce generated amount of solid waste as well as make benefit

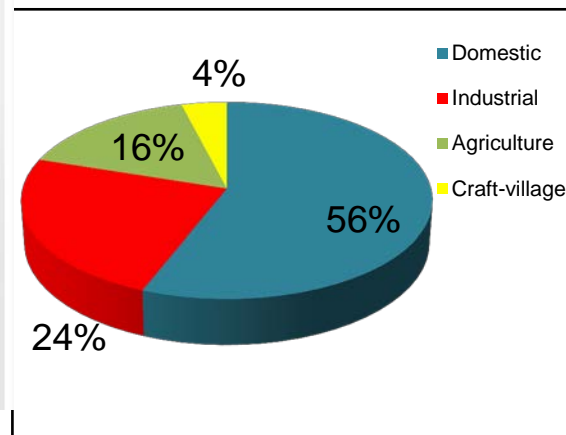
3. CURRENT STUDY IN VIETNAM

Wastewater inventory at Nhue-Day river basin (A case study: Tu Liem district, Hanoi, Vietnam)

3.1 Background of Nhue-Day river basin



- ❖ Located in the south-west of the Northern Plain, on the right bank of Hong river. 5 provinces are relevant to the basin: Ha Noi, Hoa Binh, Ha Nam, Ninh Binh, Nam Dinh.
- ❖ To supply important water sources serving agricultural and industrial production.
- ❖ Serve as a drainage system, especially in the flood season



The percentage of wastewater sources in Nhue-Day river basin

Source: Environment Report of Vietnam, 2006

❖ Be suffering strongly from wastewater of domestic, industrial, agriculture

- ❖ Many parameters have exceeded permitted standards for surface water such as COD, BOD₅, Coliform...

Inventory the contribution of pollution sources to Nhue-Day river basin is needed

3. CURRENT STUDY IN VIETNAM

Wastewater inventory at Nhue-Day river basin (A case study: Tu Liem district, Hanoi, Vietnam)

3.2 Objective:

- ❖ Objective 1: To identify all pollution sources
- ❖ Objective 2: To calculate pollution load
- ❖ Objective 3: To estimate contribution of pollution load of Tu Liem district to Nhue-Day river basin

3.3 Methodology:

- ❖ Definition: Wastewater inventory is an accounting of the amount of water pollutants from all activities discharged into one reception source in specific period
- ❖ Site study: Tu Liem district, Hanoi province, Vietnam
 - Located in the western gate of Ha Noi
 - Natural area: 75.15 km²
 - Population: 550,000
 - Activities: industry, agriculture, domestic



3. CURRENT STUDY IN VIETNAM

Wastewater inventory at Nhue-Day river basin (A case study: Tu Liem district, Hanoi, Vietnam)

3.3 Methodology (cont.)

OBJECTIVE

Objective 1: To identify all pollution sources

Objective 2: To calculate pollution load

$$PL = \sum V_i C_i$$

PL: pollution load, *V_i*: wastewater volume of pollution source *i*, *C_i*: pollutant concentration of pollution source *i*

Objective 3: To estimate contribution of pollution load of Tu Liem district to Nhue-Day river basin

METHODOLOGY

Field survey

Secondary data collection

Sampling and analysis (BOD₅, COD, SS, flow rate)

Secondary data collection

River survey (flow rate survey, sampling and analysis)

Secondary data collection

Objective 1, 2 → Study and experiment in Vietnam

Objective 3 → Study and experiment in Kyoto university

4.1 Study content:

- ❖ Objective: To estimate contribution of pollution load for BOD₅, COD
- ❖ Methodology:
 - Study site: Kamo river
 - River survey (measure flow rate, take sample and analysis)
 - Calculate according to “Material Flow Analysis – MFA”
 - Secondary data analysis (if having data)

4.2 Expected outcome:

- ❖ Be able to do river survey professionally
- ❖ Be able to apply MFA to wastewater inventory

4.3 Benefit from studying in Kyoto university:

- ❖ Approach new and effective environmental technology as well as environmental management tools
- ❖ Obtain more knowledge about environmental issues, share and learn experience among various countries
- ❖ Learn methodologies and procedures to do river survey as well as calculate pollution load





4.4 How the study in Kyoto university can be useful for the study in Vietnam:

- ❖ Supplement new methodologies to calculate pollution load exactly
- ❖ Use gained experiment from river survey at Kamo river to apply for wastewater inventory in Vietnam

4. STUDY PLAN AT GSGES – KYOTO UNIVERSITY

Study on wastewater management techniques in Japan

4.5 Detailed study schedule:

Activities	Apr	May	Jun	Jul	Aug	Sep
Introduction presentation	 24 th					
Participate into class (11 credits, Japanese class)						
Study at lab and do survey at Kamo river			 14 th Pocket- seminar			
Field trip					 5 th ~ 8 th	
Program report						
Final presentation						 20 th

THANK YOU FOR YOUR ATTENTION!