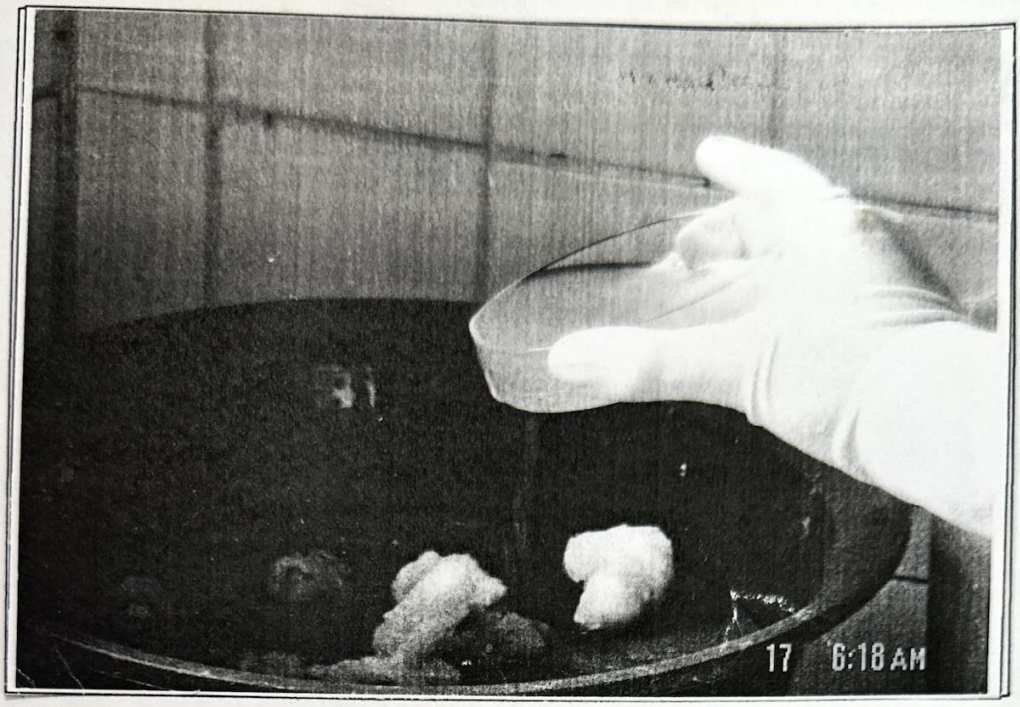

Plate 7. Disposal of bacteria culture

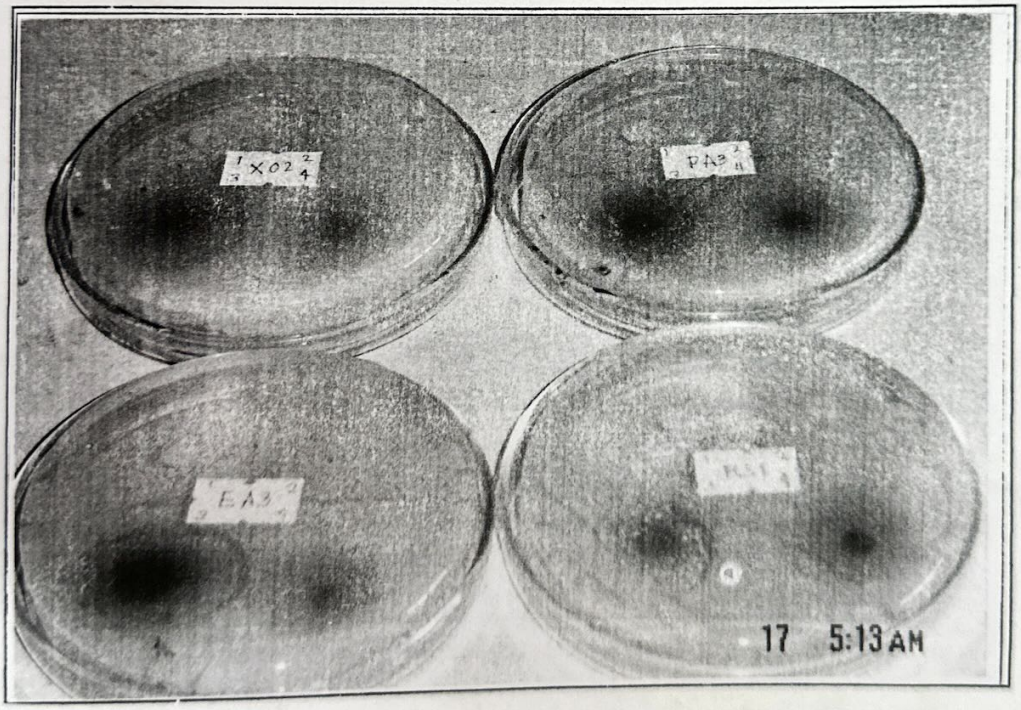

Plate 8. Bacterial cultures subjected to antibacterial test

APPENDIX D

Republic of the Philippines
Department of Science and Technology
PHILIPPINE SCIENCE HIGH SCHOOL WESTERN VISAYAS
Dona Lawa-an H. Lopez Campus
Bito-on, Jaro, Iloilo City

21 January 2005

The **MANAGER**
Garin Farm
Igcocolo, Guimbal, Iloilo

Dear **Sir/Madam**:

We are third year students of Philippine Science High School Western Visayas who are going to conduct a study on probiotics. A visit to Garin Farm last October 2004 gave us the idea for our study. In making our research paper, we would like to use the name of your establishment to refer to your fermented molasses product. The idea that supernatant liquid from fermented molasses is a probiotic did not originally come from us but from Garin Farm. We would like to ask permission to use the name of your establishment in our research paper.

The research paper is a requirement for all Philippine Science High School Western Visayas students. We hope that Garin Farm would grant us the permission to use the establishment's name in our paper. A copy of our problem, hypotheses and objectives is attached.

Very truly yours,

CLAIRE SAMANTHA T. JUANICO

DARRYL JOY C. JUNTILA

CHICKI FLORETTE C. UY

Adviser:

MS. ZENNIFER L. OBERIO

Juanico, Claire Samantha T.
Juntila, Darryl Joy C.
Uy, Chicki Florette C.

Statement of the Problem:

Do the supernatant liquid from fermented molasses at different periods of fermentation have antibacterial effects against *Ralstonia solanacearum, Xanthomonas oryzae pv oryzicola, Pseudomonas aeruginosa* and *Enterobacter aerugenes*?

Hypothesis #1:

The effect of the supernatant liquid from fermented molasses at different periods of fermentation do not differ significantly in terms of mean zones of inhibition on *Ralstonia solanacearum, Xanthomonas oryzae pv oryzicola, Pseudomonas aeruginosa* and *Enterobacter aerugenes.*

Hypothesis #2:

The effect of the supernatant liquid from fermented molasses prepared at Garin Farm and by the researchers do not differ significantly in terms of mean zones of inhibition on *Ralstonia solanacearum, Xanthomonas oryzae pv oryzicola, Pseudomonas aeruginosa* and *Enterobacter aerugenes.*

Objectives of the study:

The study aims to determine the effects of supernatant liquid from fermented molasses against *Ralstonia solanacearum, Xanthomonas oryzae pv oryzicola, Pseudomonas aeruginosa* and *Enterobacter aerugenes.* It has the following specific objectives:

a) To determine if the supernatant liquid from fermented molasses have antibacterial effects against *Ralstonia solanacearum, Xanthomonas oryzae pv oryzicola, Pseudomonas aeruginosa* and *Enterobacter aerugenes* in terms of mean zones of inhibition

b) To determine the effect of the supernatant liquid from fermented molasses at different periods of fermentation differ significantly in terms of mean zones of inhibition of *Ralstonia solanacearum, Xanthomonas oryzae pv oryzicola, Pseudomonas aeruginosa* and *Enterobacter aerugenes*

c) To compare the supernatant liquid from fermented molasses prepared in Garin Farm and by the researchers in terms of mean zones of inhibition of *Ralstonia solanacearum, Xanthomonas oryzae pv oryzicola, Pseudomonas aeruginosa* and *Enterobacter aerugenes*

d) To clarify the antimicrobial sensitivity of *Ralstonia solanacearum, Xanthomonas oryzae pv oryzicola, Pseudomonas aeruginosa* and *Enterobacter aerugenes* to the supernatant liquid from fermented molasses preparation from Garin Farm and from the preparation of the researchers based on

Republic of the Philippines
Department of Science and Technology
PHILIPPINE SCIENCE HIGH SCHOOL WESTERN VISAYAS
Dona Lawa-an H. Lopez Campus
Bito-on, Jaro, Iloilo City

26 November 2004

Dr. Margarita Lena
Head, Laboratory Department
Western Visayas Medical Center
Mandurriao, Iloilo City

Dear Madam;

We are third year students of Philippine Science High School Western Visayas who are going to conduct a study on human pathogens. We would like to ask for your expertise concerning our test organisms, *Salmonella typhi* and *Enterobacter jejuni*. Though we know you have a tight schedule, we hope to set an appointment with you.

We hope you could spare us some of your time. Thank you.

Yours truly,

cstjuanico

Claire Samantha T. Juanico

Darryl Joy C. Juntila

Chicki Florette C. Uy

Adviser:

Jennifer L Oberio

Ms. Zennifer L. Oberio

PHILIPPINE NATIONAL COLLECTION OF MICROORGANISMS

National Institute of Molecular Biology and Biotechnology

University of the Philippines Los Baños

AGREEMENT FOR RELEASE OF MICROBIAL GENETIC RESOURCES

Material Transfer Agreement (MTA) No.:_____

1. The parties of this agreement are:
   a. Philippine National Collection of Microorganisms, National Institute of Molecular Biology and Biotechnology (BIOTECH), University of the Philippines Los Baños, College, Laguna (hereinafter referred to as PNCM) and;
   b. Philippine Science High School-Western Visayas Campus, Brgy. Bito-on, Jaro, Iloilo City (hereinafter referred to as RECIPIENT)
2. The Microbial Genetic Resources (MGR) that are covered by this agreement includes *ex-situ* microbial genetic material of actual or potential value. *Ex-situ* MGRs are materials of microbial origin containing functional units of heredity, that is kept outside its natural habitat such as *in-vitro* or laboratory conditions.
3. The RECIPIENT and PNCM distinguish the following categories of use of MGRs[1]:
   - **Category 1: Use for research and academic purposes**
   - **Category 2: Commercial use**. Commercial use is defined as the use of MGRs directly or indirectly in connection with any business, or other undertaking intended for profit, including but not limited to the following activities: sale, patenting, obtaining or transferring intellectual property rights or other tangible or intangible rights by sale or license, product development and seeking pre-market approval.
4. The RECIPIENT will use the MGRs for bona fide use(s) and in a sustainable way, in full respect of the principles of the Convention on Biological Diversity. The RECIPIENT shall comply with all laws, regulations, and/or guidelines applying to the use of the MGR and to assume sole responsibility for any claims or liabilities which may arise as a result of the recipient's use of the MGR.
5. The RECIPIENT will not distribute the MGRs received. Any third party requesting a sample shall be referred to PNCM.
6. For recipients under Category 1, permission from PNCM should be solicited before any intention of using the MGR for commercial purposes or any profit-making purpose.
7. The recipient shall also keep the PNCM informed of results obtained through the use of locally isolated MGR and shall provide PNCM with any manuscript, which describes the work with the MGR prior to submission for publication and acknowledge our contribution to the work reported.
8. The PNCM gives no warranty or guarantee, express or implied, for the MGR, including merchantibility or fitness for a particular purpose.

By affixing your signature hereunder, you agree to the above stated terms and conditions of this contract.

For and on behalf of PNCM,

PNCM authorized signature over printed name / Date

For and in behalf of the RECIPIENT

Josette T. Biyo

JOSETTE T. BIYO, Ph.D.

Signature over printed name / Date

Address Philippine Science High School- Western Visayas, Brgy. Bito-on, Jaro, Iloilo City

Tel # (033) 3292011 / 09173025744

Fax # (033) 3295644

E-mail josethbiyo@yahoo.com

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For category 1 uses

The RECIPIENT will not claim ownership over the MGRs received nor seek intellectual property rights over them or related information. If the RECIPIENT wishes to utilize or exploit such organisms commercially, suitable and adequate recompense to the country of origin in the spirit of the Convention on Biological Diversity will first be discussed with PNCM and subsequently the country of origin.

The RECIPIENT will mention the PROVIDER in publication presenting scientific results and related information resulting from the use of the MGRs.

For category 2 uses

In order to ensure adequate benefit sharing with the country of origin according to the principles of the Convention on Biological Diversity, the RECIPIENT will immediately inform PNCM and the country where the MGRs were originally accessed, of the intended commercial use(s) of the MGRs and/or derived technology and/or related information.

The terms upon which benefit sharing with the stakeholders takes effect are laid down in the University of the Philippines' regulations on Intellectual property Rights

GARIN FARM
Igcocolo, Guimbal, Iloilo

DR. JOSETTE T. BIYO
OIC, Office of the Director
Philippine Science High School-Western Visayas
Bito-on, Jaro, Iloilo City

Dear Dr. Biyo,

This is to inform you that Garin Farm is allowing the use of the establishment's name in the study "Antibacterial Potentials of Fermented Molasses at Different Fermentation Periods against Human Pathogens *Enterobacter aerogenes*, *Pseudomonas aeruginosa* and Plant Pathogens *Ralstonia solanacearum* and *Xanthomonas oryzae pv oryzicola*" conducted by Claire Samantha T. Juanico, Darryl Joy C. Juntila, and Chicki Florette C. Uy, senior students of Philippine Science High School-Western Visayas for whatever purposes it may serve them.

LAARNI G. COPIO
Garin Farm Supervisor