Memorandum of Agreement

Between

National Livestock Research Institute

And

Department of Agricultural and Biosystem Engineering,

Iowa State University

National Livestock Research Institute (hereinafter “NLRI”) and Department of Agricultural and Biosystems Engineering, Iowa State University (hereinafter “ISU”), wishing to strengthen their technical and scientific links and develop fruitful cooperation between both institutes, agree as follows:

ARTICLE 1. (PURPOSE) The purpose of this Memorandum is, to establish cooperative relations between these two institutes in the area of animal environment by exchange of technologies, researchers, and research outcomes, and to develop an international collaborative research program.

ARTICLE 2. (COMMITTEE) A committee will be formed and operated to efficiently implement the purpose of this Memorandum. The committee members of both parties are the following:

- **Committee Members**
  - NLRI: Sang Gi. Yun (Vice-Director), Hyeong Ho. Kim (Dept. Head of Livestock Env.), Chang Beom. Yang (Dept. Head of Research Planning)
  - ISU: Tom Richard, Ramesh Kanwar (Dept. Chair), Hong Lim. Choi

ARTICLE 3. (TITLE AND RESEARCH INSTITUTE OF THE PROJECT)

- **Title**: Development of Treatment Systems and Maturity Evaluation Methods for Piggery Slurry
- **Research Institute**: NLRI and ISU
- **Research Contents**:
  1) Modelling of Mass and Energy Flow of Slurry treatment Systems
  2) Development of Ultrasonic Pretreatment System for Slurry
  3) Development of Rapid Simple Measuring Device for Slurry Maturity
ARTICLE 4. (DETAILS OF THE PROJECT AND COOPERATIVE ACTIVITIES)
1) Implementation of an International Collaborative Research Project
   - Total period of the Project: 3 years commencing from 2003 ~ 2004
   - Evaluation Meeting of the Project: at least once a year or more
   - Research Budget: matching fund and researchers from both parties
2) The exchange of publications for scientific and educational information, 
   and extension/outreach purposes, can be implemented to strengthen 
   existing friendly relationship between the two parties.
3) Financial and administrative assistance to visiting researchers by host 
   institute
4) The matters not mentioned specifically here can be decided according to a 
   discussion between the two parties.

5. (COMMITTEE MEETING)
1) The Committee meeting should be, in principle, held once a year. However, if necessary, additional meetings can be held or the meeting adjourned with consent of both parties.
2) The Committee will focus the discussion mainly on ARTICLE 3 which deals with the international collaborative research.

6. (INTELLECTURAL PROPERTY)
   Any form of Intellectual Property conceived and first reduced to practice jointly by one or more researchers in this joint project shall vest jointly in the “NLRI and ISU”. Details will be specified when it launches.

7. (DURATION OF THE AGREEMENT)
1) This Memorandum will be effective from the date of signature.
2) This Memorandum will be in effect for five years, commencing on the date of the last signature affixed to this document. At the end of this period, each institution will review the types and extent of collaborative activities undertaken and determine whether or not the MOA should be renewed. The Memorandum can be amended, with the approval of both parties, by means of exchange of letters through the authorized officials at each institution. Either party may initiate the exchange of letters.
3) The Memorandum may be terminated by either party by giving written notice of the intent to terminate the MOA. Such termination shall not affect the execution and conclusion of specific activities in effect under terms of this MOA, nor publication and dissemination of results of research in progress. Insofar as possible, such notice will be given three months in advance of the desired termination date.

8. This Memorandum constitutes the entire agreement between parties. All prior discussions, agreements, and understandings, whether verbal or in writing, are merged in this MOU. This Memorandum is designed to facilitate and develop a genuine and mutually beneficial process of cooperation and exchange
and is not a contract creating legal or financial relationships between the parties. The parties do not discriminate on the basis of age, marital status, race, gender, ethnicity, religion, or disability

IN WITNESS WHEREOF, the parties here to have offered their signature to this agreement.

FOR National Livestock Research Institute

Ki Young Nam
Director Kyung Nam. Kim, Ph.D

Date: 2002. Dec. 5

FOR Dept. of Agric. & Biosystems, Iowa State University

Thomas L. Richard, Ph.D

Date: Dec. 5, 2002