2.3 Joint Research

(1) List of Joint Research

Title of Joint Research Project

* *A Representative of Joint Research to carry out each Project*

A-1) Micrometeorological Improvement of Agricultural Fields in Arid Lands

Early Detection of Water Stress by Analysis of Chlorophyll Fluorescence Distribution and Suppression of Photoinhibition by Row Cover

Yasuomi IBARAKI, Seiji HAYAKAWA and Makio KAMICHIKA*

A Prediction Model for Daily Gravitational Water at a Sand Dune Field

Koji INOSAKO, Kyoichi OTSUKI, Satoshi YAMADA, Tomoko SAKOI and Makio KAMICHIKA*

Estimation of Evapotranspiration Efficiency under Mulching Culture

Kengo ITO and Makio KAMICHIKA*

A-2) Irrigation Management for Water and Salinity Control in Soil

Fundamental Studies on the Relationship between Salinization and Evapotranspiration of Agricultural Lands in Arid Area

Tadao AODA and Tomohisa YANO*

Measurements of Water and Salt Behavior in Soils Using TDR Method

Jiro CHIKUSHI and Tomohisa YANO*

Evaluation of Root Water Uptake Characteristics under Water and Salinity Stress Condition

Shin'ichi TAKEUCHI, Yoshinobu KITAMURA and Tomohisa YANO*

A-3) Analysis of the Eco-physiological Characteristics of the Root System under Arid Land Condition

Environmental Responses and Varietal Differences of Cereal Roots in their Tissue Structures

Jun ABE, Shinobu INANAGA and Yukihiro SUGIMOTO*

Physical and Chemical Modification of Root Cell Walls by Humidity, Environmental Ions and Plant Growth Regulators.

Eiichi TANIMOTO, Yukihiro SUGIMOTO and Shinobu INANAGA*

Analysis of Crop Root Formation Using Acoustic Emission (AE) Method

Tomohide SHIMOTASHIRO, Shinobu INANAGA and Yukihiro SUGIMOTO*

A-4) Studies on Water-Saving Cultivation of Crops in Arid Lands

Study of the Genes for Water Transport in Relation of Salt Tolerance in Plants
Maki KATSUHARA and Kunio HAMAMURA*

Effects of Salt Water Irrigation on Growth of Bulbous Plants
Kaori II, Megumi INOUE, Kuang-Liang HUANG, Shikanori MATSUDA, Hiroshi OKUBO and Masao TOYAMA*

The Effect of the Water Conservation Rate on the Crop Growth
Yukuo ABE and Masao TOYAMA*

A-5) Eco-physiological Studies on Tree Tolerance to Water Deficiency and Salinity

Ecophysiological Responses of Three *Salix* Species under Different Water Conditions.
Fukuju YAMAMOTO, Norikazu YAMANAKA and Shigenobu TAMAI*

Effect of Soil Microbes on Salt Tolerance of Trees
Hiroaki OKABE, Yasuhiro, GOTO, Keiko AKAMA, Shigenobu TAMAI and Norikazu YAMANAKA*

Fundamental Studies on the Technical Improvement of Afforestation
Katsuhiko YABE and Shigenobu TAMAI*

A-6) Studies on Farm Land Conservation in Arid Areas

On the Characteristics of Rill Patterns Generated on the Salinity Soil
-Effect of Surface Soil Compactness on Soil Erosion-
Mitsuo FUKADA,Tahei YAMAMOTO and Mitsuhiro INOUE*

Effects of Soil Chemical Amendment on Stability of Soil Structure
Taku NISHIMURA and Tahei YAMAMOTO*

Prediction of Soil Erosion in Different Bare Plots
Kingshuk ROY, Osamu KITANI and Tahei YAMAMOTO*

B-1) Integrated Research on Soil-Water-Plant Monitoring by Remote Sensing

Vegetation Monitoring of Yellow River Watershed by Satellite Data
Nobuhiro MATSUOKA and Makio KAMICHIKA*

Improvement of Estimating Method for the Aboveground Biomass Using Landsat-5/TM Data
Etsuji ISHIGURO, Muneharu SATO, Koichi IWASAKI, Yukio TERAOKA, Hiroyuki KIKUKAWA, Sumitaka KASHIWAGI, and Makio KAMICHIKA*

Basic Study on Saline Water Resources Assessment in the Middle East Based on Integrated GIS Database
Masahiro MURAKAMI and Yoshinobu KITAMURA*

Application of Remote Sensing & GIS Technology for Water Management / Landuse Change in Large

B-2) Studies on Salt Accumulation and Leaching

C) Free Subject on Arid Land Studies

Preferential Flows and Solutes Transport in Sandy Soils
Hiroyuki CHO[*]*, Tahei YAMAMOTO and Mitsuhiro INOUE*

Study about Fertility Conservation of Surface Soil in Arid Area
Yuichi ISHIKAWA[*] *and Tahei YAMAMOTO*

Natural Environmental and Agri-Rural Development in Arid Zone of West Asia and North Africa through G.I.S. Analysis and Fieldwork –
Ryuichi HARA[*] *and Tahei YAMAMOTO*

The Effect of Salty Crust on Soil Albedo
Haruyuki FUJIMAKI, Mitsuhiro INOUE and Sho SHIOZAWA[*]

Analysis of Soil Water Movement by Using the Generalized Model for Unsaturated Hydraulic Conductivity
Ken'ichirou KOSUGI[*] *and Mitsuhiro INOUE*

Effect of Heterogeneity in Soil Structure on Unsaturated Hydraulic Conductivity
Yasushi MORI[*] *and Mitsuhiro INOUE*

Research on Field Techniques for Measuring the Unsaturated Soil Hydraulic Properties
Yuji TAKESHITA[*] *and Mitsuhiro INOUE*