

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

Scale Irrigation Project in Aridland

Seiji TORII and Tahei YAMAMOTO*

Land Cover Classification by Using Remote Sensing Data Material Spectral Characteristics

Hisashi FUJIMURA and Mitsuhiro INOUE*

B-2) Studies on Salt Accumulation and Leaching

Reclamation of Salt-affected Soils Through Leaching

Sadahiro YAMAMOTO, Tomohisa YANO and Mitsuhiro INOUE*

Water Flow and Solute Transport in a Heterogeneous Soil

Nobuo TORIDE, Md. A. MOJID, Mitsuhiro INOUE, and Tahei YAMAMOTO*

Study on the Measurement of Subsoil Permeability

Toshihiro MORII and Mitsuhiro INOUE*

Mechanics of Simulation Transfer of Water, Solute and Heat

Yasutaka KIHARA and Mitsuhiro INOUE*

C) Free Subject on Arid Land Studies

Characteristics of Subsurface Water Movement in Sand Dune

Changyuan TANG, Yasuo SAKURA and Makio KAMICHIKA*

Numerical Study of the Movement of the Sand Dune in the Arid Land

Tetuya KAWAMURA, Makiko KAN, Makio KAMICHIKA*

A Study on Photovoltaic (PV) Power System for World Deserts Using the Arid Dome

Tsutomu HAYASHI, Makio KAMICHIKA, Yutaka HARA, Takashi TETSUI and Kentaro TAKAMURA*

Spectral Analyze of Arid Land Soil by Visible and Near IR Range

Haruhiko YAMAMOTO, Makio KAMICHIKA, Kiyoshi IWAYA and Shuhei OKADA*

Hydraulic Design of Bypass Flow Meter Using the Bend Pipe

Soichi NISHIYAMA and Tomohisa YANO*

Measurement of Mass Transfer from an Agricultural Land Using the Energy Balance Flux Ratio Method

Hiromichi ODANI and Tomohisa YANO*

Study of Traditional Ways of Water Resource Exploitation in Sub-Sahara Africa

Yoshihito SHIMADA and Yoshinobu KITAMURA*

Ethnopedological and Ecotechnological Study for Sustainable Agricultural Development in Sahel

Zone of Niger, West Africa

Keiichi HAYASHI, Toshiyuki WAKATSUKI, Yoshinobu KITAMURA and Tomohisa YANO*

The Effect of Low Water Table on Carbon Distribution into Roots and Respiration Loss in Rice

Tohru KOBATA, Takayuki ASAKI and Shinobu INANAGA*

Analysis on Crop Physiology in Arid Region of China

--- Effect of Water Deficit on Physiology of Cotton Canopy ---

Akihiro ISODA, Chungyan WANG, Tadashi TAKAHASHI, Peiwu WANG and Shinobu INANAGA*

The Relationship between Desaturation of the Fatty Acid and Salt Tolerance in Plants

Kenichi MUROTA, Shinobu INANAGA and Yukihiro SUGIMOTO*

Relationships between Structure and Function of Plant Root System under Dry Conditions

Shigenori MORITA, Jun ABE, Shinobu INANAGA and Yukihiro SUGIMOTO*

Screening Seed Germination Stimulants for Parasitic Weeds

Yasutomo TAKEUCHI, Koichi YONEYAMA, Masaru OGASAWARA and Yukihiro SUGIMOTO*

Fundamental Study on Natural Plant Growth Regulators for Enhancement of Crop Productivity in the Arid Land

Hiromitsu NAKAJIMA, Shinobu INANAGA and Yukihiro SUGIMOTO*

Search and Synthesis of Water-Soluble Germination Stimulants to Regulate the Germination of Parasitic Plants in Semi-Arid Land Regions

Jun-ichi TAMURA, Miho YAMAGUCHI, Shinobu INANAGA and Yukihiro SUGIMOTO*

Salt-tolerant Wheat Breeding by Transferring *Thinopyrum Elongatum* Chromatin into Wheat Genome

Wen-Ye YUAN, Motonori TOMITA, Shan-Cheng SUN, Hiroyuki TANAKA, Yoshimasa YASUMURO, and Kunio HAMAMURA*

Comparative Study on Soil Factor Affected to Biological Production at Desert.

Application of New Fertilizer Contained Iron Element in Alkaline Sandy Soil.

Kazuhisa HASEGAWA and Masao TOYAMA*

Medicinal Plants Cultivated for Inner Mongolian and Mongolian Arid Farming

Hisashi KOJIMA and Masao TOYAMA*

Ecophysiological Studies on the Pine Wilt Disease Occurring in Coastal Dune

Kazuyoshi FUTAI, Shigenobu TAMAI, Norikazu YAMANAKA and Fukuju YAMAMOTO*

A Study on the Production of Local Desertification Map

Tatsuaki KOBAYASHI and Shigenobu TAMAI*

Studies on Chlorophyll Fluorescent Response of Xerophytes under Low Temperature and Short Term Water Stress

Ken YOSHIKAWA, Koji, HIRANO and Shigenobu TAMAI*

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*