2.2 Research Projects

All Divisions

Basic studies toward establishing sustainable biological production systems required for combating desertification in dry land

1) Division of Arid Land Environment

Subdivision of Natural Environment

Studies on the wind climate and the sand movement in the Tottori Sand Dune
Allocation from the University Funds, Since April 1991

Analysis of ground surface information by remote sensing
Allocation from the University Funds, Since April 1991

Studies on the effect of water retentivity and thermal variation under soil surface mulching
Allocation from the University Funds, Since April 1993

Studies on the modification of the microclimate of the agricultural fields
Allocation from the University Funds, Since April 1997

Studies on the evaluation and utilization of natural energies
Allocation from the University Funds, Since April 1997

Studies on the heat balance in the subtropical plant fields
Monbusho Grant-in-Aid for Scientific Research, From April 2001 to March 2003

Subdivision of Water Resources

Movement of salt and water due to water uptake by plant roots
Allocation from the University Funds, Since April 1990

Design and water management of micro irrigation
Allocation from the University Funds, Since April 1993

Estimation of crop consumptive use of water
Allocation from the University Funds, Since April 1993

Establishment of soil moisture measurement methods
Allocation from the University Funds, Since April 1993

Soil and water properties for effective water management
Allocation from the University Funds, Since January 1996

Development of technology for rehabilitation of salt accumulated soils
Allocation from the University Funds, Since April 1999

Effect of global warming on crop productivity
Allocation from the fund from Research Institute for Humanity and Nature, Since April 2002

Quantitative analyses of salt cluster formation due to evaporation in arid environment
Allocation from the University Funds, Since June 2002

Time series analysis of rainfall in arid land
21st Century COE Project Funds, Since November 2002

2) Division of Biological Production

Subdivision of Plant Ecophysiology

Development of plant production system using sea water
Allocation from the University Funds, Since April 1992

Physiological responses of soybean, tomato and melon to salt stress
Allocation from the University Funds, Since April 1996

Differences in the response to soil moisture depletion among cultivars of wheat and sorghum
Allocation from the University Funds, Since April 1996

Physiological responses of cultured plant cells to salinity stress
Allocation from the University Funds, Since April 1996

Man, Nature and Earth Co-exiting-Research Project on Refinement of Numerical Model and Technology of Global and Regional Water Cycle (Development of Greening, Creation of Living Space and Biological Production based on Water Circulation)
Research of Requisition, Since Aug. 2002

Subdivision of Plant Production

Studies on crop tolerance to water deficiency and salinity
Allocation from the University Funds, Since April 1996

Utilization of Xerophytes and Halophytes
Allocation from the University Funds, Since April 1999

Studies on utilization of drought tolerant leguminous plants
Allocation from the University Funds, Since April 1998

Damage alleviating effects of several substances on plants under drought and salt stresses
Allocation from the University Funds, Since April 1998

3) Division of Afforestation and Land Conservation

Subdivision of Revegetation and Grassland Development

Dynamics of Pine trees on sand dunes
Allocation from the University Funds, Since April 1994

Tree growth, and nutrient and water dynamics of trees and in the soil
Allocation from the University Funds, Since April 1994

Growth and reproductive characteristics of woody plants
Allocation from the University Funds, Since April 1995

Ecological studies on sand dune vegetation
Allocation from the University Funds, Since April 1995

Maintenance mechanisms of plant communities in arid areas
Allocation from the University Funds, Since April 1996

Studies on salt tolerance of woody plants
Allocation from the University Funds, Since April 1999

Impacts of climate change on agricultural production in arid areas
Research Institute for Humanity and Nature, From April 2001

Combating desertification and enhancing rural development in inland of China
Nippon Life Insurance Foundation, From April 2001

Subdivision of Land Conservation

Assessment of water and solute transport characteristics during salt accumulation and leaching, and

establishment of proper soil management for sustainable agricultural production in arid and semi-arid regions

Monbusho Grant-in-Aid for Scientific Research B (2), Since April 2001

Evaluation and standardization of in-situ measurement of the soil hydraulic and solute transport properties

Monbusho Grant-in-Aid for Scientific Research B(1) , Since April 2001

Environmental restoration technology of degraded soil

Monbusho Grand-in-Aid for 21st Century COE Program for Arid Land Science, Since 2003/07/28

Prevention of water erosion from revegetation bed soil under sedums cultivation in green roof

Research of Requisition, From March 2002 to March 2004

Studies on water quality of irrigation water resources in the Tohaku irrigation project

Ministry of Agriculture, Forestry and Fisheries, Since October 1992

Simultaneous movement of water flow and salt transport in unsaturated sand

Allocation from the University Funds, Since April 1997

Estimation of hydraulic properties using inverse method

Allocation from the University Funds, Since April 1997

Measurement and numerical simulation of water flow and salt transport in unsaturated soil

Allocation from the University Funds, Since April 2001

Sand improvement using by recycled paper

Allocation from the University Funds, Since April 1997