

2.2 Research Projects

All Divisions

Basic studies toward establishing sustainable biological production systems required for combating desertification in dry land, since April 2000

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 receptivity 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 monitoring of desertification in the Loess Plateau, China

Ministry of Education, Culture, Sports, Science and Technology for 21st Century COE Program for Arid Land Science, Since April 2003

Subdivision of Water Resources

Design of irrigation systems and water management

Allocation from the University Funds, since April 1993

Estimation of crop transpiration and soil evaporation

Allocation from the University Funds, since April 1993

Up-scaling of soil hydraulic properties

Allocation from the University Funds, since October 2003

Reduction of soil evaporation in irrigation

Allocation from the University Funds, since October 2003

Effective use of rainfall in irrigation scheduling

Allocation from the University Funds, since April 2004

Assessment of rainfall in arid regions

Allocation from the University Funds, since June 2002

Solute movement in arid soil

Allocation from the University Funds, since June 2002

Digital analyses of salt crust caused by salt accumulation

Allocation from the University Funds, since June 2002

2) Division of Biological Production

Subdivision of Plant Ecophysiology

Physiological responses of gramineous plants to drought stress

21st Century COE Program Funds from Monbukagakusho, Since October 2002

Physiological responses of leguminous plants to salt stress

21st Century COE Program Funds from Monbukagakusho, Since October 2002

Photosynthetic characteristics of date palm

Allocation from the University Funds, Since April 2001

Control of plant root system

Joint Research Funds from Mitsubishi Heavy Industries, Ltd., Since September 2002

Identification and characterization of Plant indicators of desertification

Core University Program Funds from JSPS, Since April 2001

Subdivision of Plant Production

Studies on crop tolerance to water deficiency and salinity

Allocation from the University Funds, Since April 1996

Studies on utilization of drought tolerant leguminous plants

Allocation from the University Funds, Since April 1998

Alleviating effects of several substances on plants under drought and salt stresses

Allocation from the University Funds, Since April 1998

Utilization of Xerophytes and Halophytes

Allocation from the University Funds, Since April 1999

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

Studies on the ecosystem rehabilitation in the loess plateau, China

21st Century COE Program Funds from Monbukagakusho, Since October 2002

Studies on the water and nutrient dynamics and tree growth

Monbukagakusho Grant in Aid for Scientific Research C(2), Since April 2004

Subdivision of Land Conservation

Development of measurement technology on solute transport in undisturbed soil column and downward flow from root zone in irrigated farmland in arid regions

Monbukagakusho Grant-in-Aid for Scientific Research B (2), From April 2004 to March 2007

Effect of water pollution on clogging of emitters and filters of micro-irrigation system in the Tohoku irrigation project

Ministry of Agriculture, Forestry and Fisheries, Since October 1992

Research Projects

Improvement of high permeable soils using artificial zeolite

Research of Requisition, Since April 2003

Effect of water quality on drip irrigation schedules

Allocation from the University Funds, Since April 2000

Development of a simple technology for measuring nitrate nitrogen in soil water of sand dune fields

Joint Research of Civilian Agency, From April 2004 to March 2006

Establishment of measuring soil water content and salinity of sand with high salt concentration

Joint Research of Civilian Agency, Since April 2004

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

Allocation from the University Funds, Since April 2001