

Table of Contents

| | |
|--|---------|
| Welcome Address by Tim DAVIS and William PAYNE | i - iii |
|--|---------|

| | |
|----------------------------|----------|
| Detailed Table of Contents | iv - vii |
|----------------------------|----------|

Keynote Speech

| | |
|--|-------|
| Toshinori KOJIMA “Climate Change and CO ₂ -Role of Terrestrial Vegetation-” | 1 - 4 |
|--|-------|

Oral Presentations

Session A: Global Challenges: Examples from various geographic Regions of the World

| | |
|---|---------|
| Hukam Singh GEHLOT, Nisha TAK, Harchand R. DAGLA, Tim D. DAVIS: “Indigenous and Modern Scientific Strategies for Characterization, Conservation and Sustainable Utilization of Bio-resources of the Indian Thar Desert” | 5 - 8 |
| Raafat MISAK, Hamdy El GAMILY, Wafaa HUSSAIN: “Threats to Agriculture Lands at Al-Wafra, Southern Part of Kuwait” | 9 - 12 |
| Tao WANG: “Aeolian Desertification in Northern China” | 13 - 15 |

Session B: Afforestation-Related Issues in Arid Environments

| | |
|--|---------|
| Xiaogang LI, Yuling LI, Guosheng ZHANG, Linhe WANG, Ken YOSHIKAWA: “Dynamics of Canopy Tree of Riparian Forest, <i>Populus euphratica</i> , and Their Relationship with Environmental Conditions in Ejina Oasis, Inner Mongolia, China” | 17 - 20 |
| Hideki SUGANUMA, Hajime UTSUGI, Nobuhide TAKAHASHI, Kiyotaka TAHARA, Yasuyuki EGASHIRA, Toshinori KOJIMA: “Estimation of Biomass and Bio-fuel Production Potential by Afforestation in Arid Area of the Murchison Region, Western Australia” | 21 - 24 |
| Kenyu KONDO, Hideki SUGANUMA, Shin-ichi AIKAWA, Hajime UTSUGI, Hiroyuki HAMANO, Toshinori KOJIMA: “Tree Growth Analysis in Saline Affected Farmland in Western Australia -Tree Species and Planting Method Selection for Agro-Forestry-” | 25 - 28 |
| Tadaomi SAITO, Mayu TSUKUMO, Mohamed A. M. Abd ELBASIT, Hiroshi YASUDA, Takayuki KAWAI, Naoko MATSUO, Koji INOSAKO, Kumud ACHARYA, Amir E. BABIKER, Abubakr A. HAMD, Hiroshi NAWATA: “Estimation of Water Sources of Invasive Tree Species in Arid Environments by Oxygen Stable Isotope Analysis” | 29 - 32 |
| Namita VIJAY, Sarita ARYA, I.D. ARYA: “Rapid and Mass Propagation of the Economically Important Desert Plant <i>Capparis decidua</i> for its Afforestation Program” | 33 - 36 |
| Ashok GEHLOT, I.D. ARYA, Vinod KATARIA, R.K. GUPTA, Sarita ARYA: “Clonal Multiplication of Multipurpose Desert Tree <i>Azadirachta indica</i> - Neem” | 37 - 40 |

Session C: Habitat Change and Ecology in Arid Zones

| | |
|--|---------|
| Ali NEFZAOU, Hichem BEN SALEM, Mohamed EL MOURID: “Appropriate Technologies for Drought Mitigation in Agropastoral Areas of North Africa” | 41 - 46 |
| Xueqin WANG, Xinwen XU, Lichao LIU, Chunwu SONG: “Habitat Change and Plants Invasion in Great Engineering Protective System in Gurbantunggut Desert, China (2000-2009)” | 47 - 50 |
| Buho HOSHINO, Hiroshi NAWATA, Kenji KAI, Hiroshi YASUDA, Kenji BABA, Sumiya GANZORIG, SURIGA, Manayeva KARINA, Tsedendamba PUREVSUREN, Miki HASHIMOTO, Kenji KAWASHIMA, Jun NODA, Katsuro HAGIWARA, Yuka SHIBATA: “Comparative Characteristics of the Home Ranges of Domestic and Wild Animals in Arid and Semi-Arid Afro-Eurasian Watering Places as Hot Spots for Pasture Degradation” | 51 - 56 |
| Ali NEFZAOU, Mohamed EL MOURID, Mounir LOUHAICHI: “The Tribe -Platform of Participatory Local Development and Management of Communal Rangeland Resources-” | 57 - 60 |
| Mounir LOUHAICHI, Khem CHAND, Arun KUMAR MISRA, Mahesh KUMAR GAUR, Sarker ASHUTOSH, Douglas E. JOHNSON, Murari M. ROY: “Livestock Migration in the Arid Region of Rajasthan (India) -Strategy to Cope with Fodder and Water Scarcity-” | 61 - 64 |

Session D: Solutions to Desertification Issues

- Taichi MAKI, Osamu MORITA, Yoshinori SUZUKI, Kenji WAKIMIZU: “Artificial Rainfall by the Seeding of Liquid Carbon Dioxide near Miyake and Mikura Islands of Izu Islands in 2012 and 2013” 65 - 68
- Takahiro MORIO: “Comparative Study on Higher Education and Innovation for Sustainable Development in North Africa” 69 - 72

Session E: Soils in Arid Zones

- R.F. MISAK, M.K. SULEIMAN: “Controlling Land Degradation Using Environmentally Friendly Materials -The Case of Kuwait-” 73 - 76
- Ieyasu TOKUMOTO, James L. HEILMAN, Kevin J. MCINNES, Cristine L.S. MORGAN: “Hydraulic Properties of Rocky Soils in a Semi-Arid Savanna on the Edwards Plateau, TX” 77 - 80
- Yuji SAKAI, Hitomi SETO, Hidetoshi NAGAMOTO: “Evaluation of Salt Transport in the Amelioration of Salt-Affected Soil in China by Using Low-Quality Coal Bio-Briquette Ash” 81 - 84
- Nowaki HIJIKATA, Takahisa FUJII, Drissa SANGARE, Mariam SOU, Ken USHIJIMA, Naoyuki FUNAMIZU: “Salts Monitoring and Management for Human Urine Fertilization and Treated Greywater Irrigation in Sub-Sahel Region” 85 - 88

Session F: Water in Arid Zones

- Raul I. CABRERA: “Alternative Water Sources for Urban Landscape Irrigation in Arid Regions” 89 - 92
- Osamu YOKOHAGI, Toshinori KOJIMA, Hideki SUGANUMA, Tadaomi SAITO: “Effect of Difference in Vegetation Type on Runoff Simulation Results in Arid Land” 93 - 96
- Yutaka ABE, Maki TSUJIMURA, Masayoshi NAKAWO: “Groundwater Recharge Revealed by Multi-tracers Approach and EMMA in Semi-arid Irrigated Village, Heihe River Basin, Northwest China” 97 - 100
- Temur KHUJANAZAROV, Kristina TODERICH, Kenji TANAKA: “Utilization of Marginal Water and Lands in the Zeravshan River Basin as Part of a Climate Change Adaptation Strategy” 101 - 104
- Yoshiko KAWABATA, Tomoko KURITA, Masahiro NAGAI, Vyacheslav APARIN, Siaw ONWONA-AGYEMAN, Masaaki YAMADA, Yoshikazu FUJII, Yukio KATAYAMA: “Water Quality in the Lake Issyk-Kul and the River Flowing into It” 105 - 108
- John G. MEXAL, Geno A. PICCHIONI, Manoj K. SHUKLA, April L. ULERY, William C. LINDEMANN: “Land Application of Municipal Wastewater to Desert Ecosystems -Case Studies Identifying Risks and Opportunities-” 109 - 112

Session G: Plants and Crop Production in Arid Environments

- Zentaro FURUKAWA, Noriyuki YASUFUKU, Kiyoshi OMINE, Atsushi MARUI, Ren KAMEOKA: “Relationships between Soil Water / Calcium Environment and Growth of Licorice (*Glycyrrhiza uralensis*)” 113 - 116
- Boukary SAWADOGO, Mariam SOU, Nowaki HIJIKATA, Drissa SANGARE, Amadou Hama MAIGA, Naoyuki FUNAMIZU: “Effect of Detergents from Greywater on Irrigated Plants -Case of Okra (*Abelmoschus esculentus*) and Lettuce (*Lactuca sativa*)-” 117 - 120
- Ali NEFZAOU, Mounir LOUHAICHI, Hichem BEN SALEM: “Cactus as a Tool to Mitigate Drought and to Combat Desertification” 121 - 124
- Blair L. STRINGAM, Kulbhushan K. GROVER: “Crop Yield Function and Evapotranspiration Comparison for Crops near Hatch, New Mexico, USA” 125 - 128
- Baozhen HAO, Qingwu XUE, Yinghua ZHANG, B.A. STEWART, Zhimin WANG: “Deficit Irrigation in Winter Wheat -The U.S. Southern High Plains and North China Plain-” 129 - 132
- Daniel I. LESKOVAR, Chenping XU, Shinsuke AGEHARA, Sat Pal SHARMA, Kevin CROSBY: “Irrigation Strategies for Vegetable Crops in Water-Limited Environments” 133 - 136
- Dilafuz ARIFKHANOVA, Tura RAKHIMOVA, Sanobar ILIAKHUNOVA: “Adaptable Features of Annual Halophytes to the Conditions of Arid Zones and the Prospects for their Potential Use to Global Warming and Biotechnology” 137 - 140
- Xuejun DONG, Daniel LESKOVAR, Kevin CROSBY, Thomas MAREK: “Quantifying Crop Water Use in Arid and Semi-Arid Regions -Opportunities Based on Soil-Plant Water Relations-” 141 - 144
- Ahmed M. ABOUL-ENEIN, Faten Abu EL-ELA, Emad SHALABY, Hany EL-SHEMY: “Potent Anticancer and Antioxidant Activities of Active Ingredients Separated from *Solanum nigrum* and *Cassia italica* Extracts” 145 - 152

| | |
|---|-----------|
| Gautam P. PRADHAN, Qingwu XUE, Shuyu LIU, Jackie C. RUDD, Kirk E. JESSUP: “Effective Use of Soil Water Contributed to High Yield in Wheat in the U.S. Southern High Plains” | 153 - 156 |
|---|-----------|

Poster Presentations

| | |
|--|-----------|
| Komil TOJIBAEV, Natalya BESHKO, Farhod KARIMOV, Avazbek BATOSHOV, Orzimat TURGINOV, Dilnoza AZIMOVA: “The Data Base of the Flora of Uzbekistan” | 157 - 160 |
| Tatsuya HIROKANE, Makoto OOBA, Sawahiko SHIMADA, Hiromichi TOYODA: “Effects of Water and Salinity Stress on the Growth of Iceplant” | 161 - 164 |
| Sawahiko SHIMADA, Tatsuya HIROKANE, Makoto OOBA, Hiromichi TOYODA, Fuminori ANDO, Yohei TAKARA: “Monitoring Salt Accumulation Status and Saline Stress of Iceplant Leaves Using Hyperspectral Camera Imagery” | 165 - 168 |
| Sukhbir SINGH, Kulbhushan GROVER, Sultan BEGNA, Sangu ANGADI, Manoj SHUKLA, Robert STEINER, Dick AULD: “Physiological Response of Diverse Origin Spring Safflower Genotypes to Salinity” | 169 - 174 |
| Ayako SEKIYAMA, Wataru TAKEUCHI, Sawahiko SHIMADA: “Detection of Grassland Degradation Using MODIS Data in Mongolia” | 175 - 178 |
| Makoto IIKUBO, Yoshiko KAWABATA, Masaaki YAMADA, Siaw ONWONA-AGYEMAN, Umarov Shavkat RAMAZANOVICH, Javkochdiev KAHHOR, Salmanova MANZURA, Vyacheslav APARIN, Tsutomu ARIE: “Revitalizing Rural Areas through Modernized Sericulture -A Case Study in Fergana Region, Uzbekistan-” | 179 - 182 |
| Hanen SBEI, Tariq SHEHZAD, Moncef HARRABI, Kazutoshi OKUNO: “Salinity Tolerance Evaluation of Asian Barley Accessions (<i>Hordeum vulgare</i> L.) at the Early Vegetative Stage” | 183 - 186 |
| SURIGA, Miki HASHIMOTO, Buho HOSHINO, Sumiya GANZORIG, SAIXIALT, YONG-HAI, Karina MANAYEVA, Tsedendamba PUREVSUREN: “Grazing Behavior of Livestock in Settled and Nomadic Herders Households in Mongolian Plateau” | 187 - 189 |
| YONG-HAI, Buho HOSHINO, Sumiya GANZORIG, SURIGA, Tsedendamba PUREVSUREN, Karina MANAYEVA: “Studies on Long-term Changes in Herders Household and Land Use in Inner Mongolia, China” | 191 - 194 |
| Satomi ISHII, Buho HOSHINO, Hiroshi KOMIYAMA, Aritune UEHARA, Sabyr NURTAZIN: “Study on Production and Properties of Kumiss of Herders in Mongolian Dry Steppe” | 195 - 197 |
| Atsushi MARUI, Akihiko KOTERA, Zentaro FURUKAWA, Noriyuki YASUFUKU, Kiyoshi OMINE, Takanori NAGANO, Indree TUVSHINTOGTOKH, Bayart MANDAKH: “Monitoring the Growing Environment of Wild Licorice with Analysis of Satellite Data at a Semi-arid Area in Mongolia” | 199 - 202 |
| B. DAVIES, K. BOA, J. AITKENHEAD-PETERSON, L. PITTS, W. PAYNE: “Agro-ecosystem, Tillage, and Cropping Effects on Extractable Soil Nitrogen and Organic Carbon in Ghana” | 203 - 207 |
| H. Brent PEMBERTON, Tim D. DAVIS, Michael A. ARNOLD, Cynthia MCKINNEY, Larry STEIN, David RODRIGUEZ, R. Daniel LINEBERGER: “Texas Superstar® Program -Using Technology to Promote the Use of Well-Adapted Plants for Landscapes in High Temperature Regions with Limited Water Resources-” | 209 - 211 |
| Sean T. CARVER, Michael A. ARNOLD, David H. BYRNE, Anna R. ARMITAGE, R. Daniel LINEBERGER, Andrew R. KING: “Effects of Saline Irrigation on Four Native Texas Plant Species with Ornamental Potential for Coastal and Arid Climate Landscapes” | 213 - 221 |
| Geoffrey C. DENNY, Michael A. ARNOLD: “Evaluation of Drought Tolerance of Selected Provenances of <i>Taxodium</i> ” | 223 - 230 |
| Natalya AKINSHINA, Kristina TODERICH, Azamat AZIZOV, Laurel SAITO, Shoaib ISHMAIL: “Halophyte Biomass -A Promising Source of Renewable Energy-” | 231 - 235 |
| Xuncheng XIA, Yuanjie ZHAO: “Research Progresses in Morphological Features of the Area with “Big Ear” Image in Lop Nor Region and Its Environmental Significance” | 237 - 240 |
| Yuanjie ZHAO, Xuncheng XIA: “Study of the Response of <i>Tamarix</i> Cone Sedimentary Veins to Climatic and Environmental Elements in Arid Zones” | 241 - 244 |
| Takayuki KAWAI, Yasuyuki TADA, Masato SHINODA, Ryota TSUCHIYA, Toshihiro MORII, Tetsuya SUZUKI, Khuut TSEEDULAM: “Simple Method of Shallow Groundwater Exploration by Groundwater Aeration Sound in Semi-Arid Grassland” | 245 - 248 |
| Susan M. COOPER, Maretha VAN DER MERWE: “Game Ranching for Meat Production in Marginal African Agricultural Lands” | 249 - 252 |

| | |
|--|-----------|
| Hiromichi TOYODA, Sawahiko SHIMADA, Tatsuya HIROKANE, Tabarek M. ISMAEL, Tomoki HOTTA, Michimasa MENJO: “A Study on Effective Use of Surface Runoff for Irrigation in Djibouti -Watershed Analysis using GIS and Trial on Runoff Parameters Estimation-” | 253 - 256 |
| Modi M. AHMED, Ali M. AL-DOUSARI: “Application of Water Harvesting System for Rehabilitation of Degraded Land in Liyah in Northern Kuwait” | 257 - 260 |
| Nejla TURKI, Tariq SHEHZAD, Moncef HARRABI, Moktar TARCHI, Kazutoshi OKUNO: “Variation in Response to Salt Stress at Seedling and Maturity Stages among Durum Wheat Varieties” | 261 - 264 |
| Habibullo F. SHOMURODOV, Shakhnoza SARIBAEVA: “Effect of Gas Extraction on the State of <i>Euphorbia sclerocyathium</i> Korov.et M.Pop. Population” | 265 - 268 |