

3. Research Achievements (Apr. 2011- Mar. 2012) 研究業績 (2011年4月~2012年3月)

3.1 Journal Articles/Books/Book Chapters / 論文・著書

Journal Article

- Abulaiti, A. and Kimura, R. (Nov. 2011): Characteristics of the sand drifting of Tottori sand dune in springtime. *Sand Dune Research*, 58, 31-40. [阿不来提阿不力提甫・木村玲二 (2011年11月) : 春季の鳥取砂丘における飛砂発生の特徴. *日本砂丘学会誌*, 58, 31-40.]
- Ailijiang, M., Iwanaga, F., Murata, N., Hara, N., Nishizawa, M., Matsuo, N., Qimen, Y. and Yamanaka, N. (Feb. 2012): Cation contents of five halophytes growing in saline soil around Aiding Lake in Turpan Basin, Xinjiang, China. *Sand Dune Research*, 58(3), 95-102.
- Ailijiang, M., Qimen, Y., Murata, N. and Yamanaka, N. (Feb. 2012): Photosynthetic performance and salinity tolerance of *Elaeagnus angustifolia* L. saplings. *Sand dune Research*, 58(3), 103-112.
- Andry, H., Inoue, M. and Moritani, S. (Apr. 2011): Effectiveness of wood waste material for improving infiltration and reducing interrill soil loss in clay-rich volcanic soil. *Journal of Soil and Water Conservation*, 66 (2), 97-103.
- Balana, B.B., Muys, B., Haregeweyn, N., Descheemaeker, K., Deckers, J., Poesen, J., Nyssen, J. and Mathijs, E. (Sep. 2012): Cost-benefit analysis of soil and water conservation measure: The case of exclosures in northern Ethiopia. *Forest Policy and Economics*, 15: 27-36.
- Bat-Oyun, T., Shinoda, M. and Tsubo, M. (Apr. 2011): Effect of water stress on radiation use efficiency in a Mongolian grassland. *Journal of Plant Interactions*, 17, 214-227.
- Cheng, Y., Tsubo, M., Ito, T.Y., Nishihara, E. and Shinoda, M. (May. 2011): Impact of rainfall variability on plant diversity in grazing land: a case study from Mongolia. *Journal of Arid Environments*, 75, 471-476.
- Cho, S.-W., Ishii, T., Matsumoto, N., Tanaka, H., Eltayeb, A.E. and Tsujimoto, H. (Jun. 2011): Effect of the cytidine analogue zebularine on mitotic chromosomes. *Chromosome Science*, 14, 23-28.
- Cho, S.-W., Moritama, Y., Ishii, T., Kishii, M., Tanaka, H., Eltayeb, A.E. and Tsujimoto, H. (Dec. 2011): Homology of two alien chromosomes during meiosis in wheat. *Chromosome Science*, 14, 45-52.
- Dou, Q.W., Zhang, T.L. and Tsujimoto, H. (Jul. 2011): Physical mapping of repetitive sequences and genome analysis in six *Elymus* species by in situ hybridization. *Journal of Systematics and Evolution*, 49, 347-352.
- Duan, H., Yan, C., Tsunekawa, A., Song, X., Li, S. and Xie, J.L. (Oct. 2011): Assessing vegetation dynamics in the Three-North Shelter Forest region of China using AVHRR NDVI data. *Environmental Earth Sciences*, 64(4), 1011-1020. DOI: 10.1007/s12665-011-0919-x.
- Eltayeb Habora, M.E., Eltayeb, M.E., Tsujimoto, H. and Tanaka, K. (Mar. 2011): Identification of osmotic stress-responsive genes from *Leymus mollis*, a wild relative of wheat (*Triticum aestivum* L.). *Breeding Science*, 62, 78-86.
- Han, L., Tsunekawa, A. and Tsubo, M. (Dec. 2011): Radar remote sensing of springtime near-surface soil thaw events at middle latitudes. *International Journal of Remote Sensing*, 32(23), 8555-8574.
- Han, L., Tsunekawa, A. and Tsubo, M. (Jun. 2011): Effect of frozen ground on dust outbreaks in spring on the eastern Mongolian Plateau. *Geomorphology*, 129, 412-416.
- Haregeweyn, N., Fikadu, G., Tsunekawa, A., Tsubo, M. and Meshesha, D. (Feb. 2012): The dynamics of urban expansion and its impacts on land use/land cover change and small-scale farmers living near the

- urban fringe: a case study of Bahir Dar, Ethiopia. *Journal of Landscape and Urban Planning*, DOI: 10.1016/j.landurbplan.2012.02.016.
- Haregeweyn, N., Melesse, B., Tsunekawa, A., Tsubo, M., Meshesha, D. and Balana, B.B. (Feb. 2012): Reservoir sedimentation and its mitigating strategies: a case study of Angereb reservoir (NW Ethiopia). *Journal of Soils and Sediments*, 12, 291-305.
- Imada, S., Acharya, K., Iwanaga, F. and Yamanaka, N. (Aug. 2011): Effects of salinity on sodium dynamics of a halophytic shrub, *Tamarix ramosissima*. *Journal of the Japanese Society of Revegetation Technology*, Tech, 37, 50-54. [今田省吾・ACHARYA Kumud・岩永史子・山中典和 (2011年8月): 異なる塩水灌漑条件下における塩生植物 *Tamarix ramosissima* Ledeb の Na⁺動態. 日本緑化工学会誌 37 (1) 、50-54.]
- Inoue, M. (Jan. 2012): Review, Present situation of salinization and technology of desalinization. *Journal of the Japanese Geotechnical Society*, 60(1), 12-15. [井上光弘 (2012年1月) : 論説, 塩類化の現状と除塩技術. 地盤工学会誌, 60(1), 12-15.]
- Inoue, M., Morii, T., Saito, H. and Fujimaki, H. (Feb. 2012): Enhancing soil water holding capacity in root zone and interception of upward saline water flow from ground water using capillary barrier. *Proceedings of the Soil Moisture Workshop 2011*, 82-89. [井上光弘・森井俊広・斉藤広隆・藤巻晴行 (2012年2月) : キャピラリバリアによる根群域の保水性向上と地下水からの塩水侵入阻止, 2011 土壌水分ワークショップ論文集, 82-89.]
- Inthavong, T., Fukai, S. and Tsubo, M. (Apr. 2011): Spatial variations in water availability, soil fertility and grain yield in rainfed lowland rice: a case study from Savannakhet province, Lao PDR. *Plant Production Science*, 14, 184-195.
- Irshad, M., Inoue, M., Shezadi, M., Khan, T. and Faridullah. (Apr. 2011): Investigating ammonium, phosphorus and potassium release from animal manure during composting. *Journal of Food, Agriculture & Environment*, 9(2), 629-631.
- Irshad, M., Khan, A., Inoue, M., Ashraf, M. and Sher, H. (Jun. 2011): Identifying factors affecting agroforestry system in Swat, Pakistan. *African Journal of Agricultural Research*, 6(11), 2586-2593.
- Jiranapapan, J., Kikuchi, S., Manochai, B., Taychasinpitak, T., Tanaka, H. and Tsujimoto, H. (Jun. 2011): A simple method of chromosome doubling using colchicine in *Torenia* (Linderniaceae), and the behavior of meiotic chromosomes in amphidiploids. *Chromosome Science*, 14, 29-32.
- Jugder, D., Shinoda, M., Sugimoto, N., Matsui, I., Nishikawa, M., Park, S.-U., Chun, Y.-S. and Park, M.-S. (Jul. 2011): Spatial and temporal variations of dust concentrations in the Gobi Desert of Mongolia. *Journal of Global and Planetary Change*, 78, 14-22.
- Kimura, R. (Jun. 2011): Relationships between NDVI, rainfall, and soil water content of the natural grassland in the Liudaogou river basin of the Loess Plateau. *Journal of Arid Land Studies*, 21, 1-6. [木村玲二 (2011年6月) : 黄土高原六道溝流域の自然草地における NDVI と降水量、土壌水分との関係. 沙漠研究, 21-1.]
- Kimura, R. and Shinoda, M. (Jul. 2011): Estimation of surface soil water content from surface temperatures during dust outbreak seasons of northeast Asia. *Environmental Earth Sciences*, DOI:10.1007/s12665-011-1167-9.
- Kimura, R. and Shinoda, M. (Mar. 2012): Estimation of surface soil water content from surface temperatures in dust source regions of Mongolia and China. *Environmental Earth Sciences*, 65, 1847-1853.
- Koike, T. and Shinoda, M. (Sep. 2011): Temperature changes before and after precipitation in Mongolia.

- Journal of Agricultural Meteorology, 67, 139-150.
- Kurosaki, Y., Shinoda, M., Mikami, M. and Nandintsetseg, B. (Jul. 2011): Effects of soil and land surface conditions in summer on dust outbreaks in the following spring in a Mongolian Grassland. SOLA, 7, 69-72.
- Kurosaki, Y., Shinoda, M. and Mikami, M. (Jun. 2012): What caused a recent increase in dust outbreaks over East Asia? Geophysical Research Letters, 38, L11702, DOI:10.1029/2011GL047494.
- Larson, S., Kishii, M., Tsujimoto, H., Qi, L.L., Chen, P.D., Lazo, G.R., Jensen, K.B. and Wang, R. R.C. (Jan. 2012): Leymus EST linkage maps identify 4NsL-5NsL reciprocal translocation, wheat-Leymus chromosome introgressions, and functionally important gene loci. Theoretical and Applied Genetics, 124, 189-206.
- Matsushima, D., Kimura, R. and Shinoda, M. (Feb. 2012): A method for estimating threshold wind speed of dust emission using thermal inertia over a non-vegetated surface. Japan Society of Civil Engineers, 68, 1789-1794. [松島大・木村玲二・篠田雅人(2012年2月) : 熱慣性を用いた裸地面上におけるダスト発生臨界風速の推定法. 水工学論文集, 68(4), 1789-1794.]
- Meshesha, D.T., Tsunekawa, A. and Tsubo, M. (Mar.-Apr. 2012): Continuing land degradation: cause-effect in Ethiopia's Central Rift Valley. Land Degradation & Development, 23, 130-143.
- Meshesha, D.T., Tsunekawa, A., Tsubo, M. and Haregeweyn, N. (Jun-Oct 2011): Spatial analysis and semi-quantitative modeling of specific sediment yield in six catchments of the central rift valley of Ethiopia. Journal of Food, Agriculture & Environment, 9(3&4), 784-792.
- Meshesha, D.T., Tsunekawa, A., Tsubo, M. and Haregeweyn, N. (Mar. 2012): Dynamics and hotspots of soil erosion and management scenarios of the Central Rift Valley of Ethiopia. International Journal of Sediment Research, 27: 84-99.
- Mori, M., Inagaki, M.N., Inoue, T. and Nachit, M.M. (Dec. 2011): Association of root water-uptake ability with drought adaptation in wheat. Cereal Research Communication, 39, 551-559.
- Mu, H., Battsetseg, B., Ito, T.Y., Otani, S., Onishi, K. and Kurozawa, Y. (Apr. 2011): Health effects of dust storms: subjective eye and respiratory system symptoms in inhabitants in Mongolia. Journal of Environmental Health, 73(8), 18-20.
- Nandintsetseg, B. and Shinoda, M. (Aug. 2011): Soil moisture characteristics in the Mongolian steppe: Its seasonal, interannual changes and memory. Papers in Meteorology, 32, 99-107.
- Ojha, C.S.P., Yasuda, H., Mohamed A., M.A.E. and Kumar, M. (Nov. 2011): Evaporation in Relation to CO₂ Concentration: Analysis of Mass Transfer Coefficient. Atmospheric Environment 45, 6291-6298.
- Okamoto, H., Ishii, K. and An, P. (Dec. 2011): Effects of soil moisture deficit and subsequent watering on the growth of four temperate grasses. Grassland Science, 57 (4), 192-197.
- Onishi, K., Kurosaki, Y., Otani, S., Yoshida, A., Sugimoto, N. and Kurozawa, Y. (Mar. 2012): Atmospheric transport route determines components of Asian dust and health effects in Japan. Atmospheric Environment, 49, 94-102.
- Peng, F., Tsuji, W., Wang, T. and Tsunekawa, A. (Feb. 2012): Effects of sand burial and water regimes on seed germination and seedling emergence of two desert species. Advanced Materials Research Vols. 356-360, 2465-2472. DOI:10.4028/www.scientific.net/AMR.356-360.2465.
- Saylan, L., Kimura, R., Munkhtsetseg, E. and Kamichika, M. (Jul. 2011): Seasonal variation of carbon dioxide fluxes over irrigated soybean (*Glycine max.* L.). Theoretical and Applied Climatology, 105, 277-286.
- Schubert, V., Meister, A., Tsujimoto, H., Endo, T.R. and Houben, A. (Jul. 2011): Similar rye A and B

- chromosome organization in meristematic and differentiated interphase nuclei. *Chromosome Research*, 19, 645-655.
- Shi, W., Tateno, R., Zhang, W., Wang, Y., Yamanaka, N. and Du, S. (Jul. 2011): Response of soil respiration to precipitation during the dry season in two typical forest stands in the forest-grassland transition zone of the Loess Plateau. *Agricultural and Forest Meteorology*, 151 (7), 854-863.
- Shinoda, M. and Nandintsetseg, B. (Nov. 2011): Soil moisture and vegetation memories in a cold, arid climate. *Global and Planetary Change*, 79, 110-117.
- Shinoda, M., Gillies, J., Mikami, M. and Shao, Y. (Dec. 2011): Temperate grasslands as a dust source: Knowledge, uncertainties, and challenges. *Aeolian Research*, 3, 271-293.
- Sohail, Q., Inoue, T., Tanaka, H., Eltayeb, A.E., Matsuoka, Y. and Tsujimoto, H. (Dec. 2011): Applicability of *Aegilops tauschii* drought tolerance traits to breeding of hexaploid wheat. *Breeding Science*, 61, 347-357.
- Sohail, Q., Shehzad, T., Kilian, A., Eltayeb, A.E., Tanaka, H. and Tsujimoto, H. (Mar. 2011): Development of diversity array technology (DARt) markers for assessment of population structure and diversity in *Aegilops tauschii*. *Breeding Science*, 62, 38-45.
- Tachiiri, K. and Shinoda, M. (Dec. 2011): Quantitative risk assessment for future meteorological disasters: Reduced frequency of snow disasters in Mongolia. *Climatic Change*, DOI:10.1007/s10584-011-0365-5.
- Taniguchi, T. (Nov. 2011): <Feature>Roles of fungi and herbivore in creating species-diversity in forests. Interactions between plants and mycorrhizal fungi associate with plant diversity in forests. *Japanese Journal of Ecology*, 61, 311-318. [谷口武士 (2011年11月) : 特集 : 菌類・植食者との相互作用が作り出す森林の種多様性. 地下部における菌類との相互作用が作り出す森林の種多様性, 日本生態学会誌 61, 311-318.]
- Tsubo, M., Nishihara, E., Nakamatsu, T., Cheng, Y. and Shinoda, M. (Feb. 2012): Plant volatiles inhibit restoration of plant species communities in dry grassland. *Basic and Applied Ecology*, 13, 76-84.
- Ura, S., Osada, K., Kagawa, M., Mikami, M., Matoba, S., Aoki, K., Shinoda, M., Kurosaki, Y., Hayashi, M., Shimizu, A. and Uematsu, M. (Sep. 2011): Estimation of Mineral Dust Amount Using Fe Content in Water-Insoluble Residue of Atmospheric Deposition Samples. *Erozoru Kenkyu*, 26, 234-241. [浦幸帆・長田和雄・香川雅子・三上正男・的場澄人・青木一真・篠田雅人・黒崎泰典・林政彦・清水厚・植松光夫 (2011年9月): 非水溶性大気沈着物中の Fe 含有量を用いた鉱物質ダスト量の推定. エアロゾル研究, 26, 234-241.]
- Uzoma, K.C., Inoue, M., Andry, H., Fujimaki, H., Zahour, A. and Nishihara, E. (Jun. 2011): Effect of cow manure biochar on maize productivity under sandy soil condition. *Soil Use and Management*, 27, 205-212.
- Uzoma, K.C., Inoue, M., Andry, H., Zahour, A. and Nishihara, E. (Jul.-Oct. 2011): Influence of biochar application on sandy soil hydraulic properties and nutrient retention. *Journal of Food, Agriculture & Environment*, 9(3&4), 1137-1143.
- Wang, S., Yin, L., Tanaka, H., Tanaka, K. and Tsujimoto, H. (Jun. 2011): Wheat-*Aegilops* chromosome addition lines showing high iron and zinc contents in grains. *Breeding Science*, 61, 189-195.
- Zahoor, A., Mohamed A., M.A.E., Inoue, M., Yasuda, H., Honna, T. and Yamamoto, S. (Mar. 2012): Use of two industrial wastes as soil amendments. Effect on dissolved reactive phosphorus in runoff. *Soil and Sediment Contamination*, 21, 207-226.
- Zhang, J., Kume, T., Otsuki, K., Yamanaka, N. and Du, S. (Apr. 2011): Sap flow dynamics of dominant

trees of *Quercus liaotungensis* Forest in the semiarid Loess Plateau Region. *Scientia Silva Sinicae*, 47(4), 63-69. (in Chinese with English summary)

Zhang, Q.T., Wang, S.P., Inoue, M., Moritani, S., Tsuiji, W., Geng, S., Qiu, G.Y. and Xie, Q. (Jan. 2012): A new methodology for determining irrigation schedule of grapevines using photogrammetric measurement of berry diameter. *Journal of Food, Agriculture & Environment*, 10(1), 582-587.

Books/Book Chapters

Haregeweyn, N., Gebrekiros, A., Tsunekawa, A., Tsubo, M., Meshesha, D. and Yazew, E. (Dec. 2011): Performance assessment and adoption status of family drip irrigation system in Tigray State, Northern Ethiopia. In Jha MJ (Ed.), *Water Conservation*. In Tech Rijeka (Croatia), pp. 31-46. ISBN: 978-953-307-960-8.

Mohamed A., M.A.E., Yasuda, H., Salmi, H. and Ahmed, Z. (Nov. 2011): Impact of rainfall microstructure on erosivity and splash soil erosion under simulated rainfall. In *Soil erosion Studies*. eds. Danilo Godone & Silvia Stanchi. InTech, Rijeka Croatia, pp. 167-179, (ISBN 979-953-307-243-1)

Morii, T., Inoue, M., Komatsu, G., Kadoguchi, R. and Takeshita, Y. (Mar. 2012): Effective water harvesting using capillary barrier of unsaturated soils. In *Unsaturated Soils, Theory and Practice 2011*, ed. Jotisankasa, Sawangsuriya, Sorolump and Mairaing. Kasetsart University, Thailand, 857-860. (ISBN978-616-7522-77-7)

Moritani, S., Yamamoto, T., Andry, H., Inoue, M., Nishimura, T., Fujimaki, H., Kimura, R. and Saito, H. (Jul. 2011): Monitoring of soil surface under wind and water erosion by photogrammetry. In *Wind tunnels and experimental fluid dynamics research*, ed. Jorge Colman Lerner and Ulfilas Boldes. INTECH, Croatia, Chapter 21, 447-462. (ISBN978-953-307-623-2)

Nakano, T. and Shinoda, M. (Dec. 2011): Modeling of the interannual variation in ecosystem respiration of a semiarid grassland, In Ozkaraova Gungor, E.B. ed. *Principles, application and assessment in soil science*, InTech Open Access Publisher, Rijeka Croatia, 167-178. (ISBN978-953-307-740-6)

Shinoda, M. (Jan. 2012): Land: Proactive management of drought and its derived disasters. In Shaw, R. and Phong, T. eds. *Environment disaster linkages. Community, Environment and Disaster Risk Management*, Vol. 9, Emerald Publishers, Bingley, UK, 61-78. (ISBN978-085-724-865-7)

Yamanaka, N. (Jun. 2011): Arid areas of China, Plant responses to salt stress, In Yoshikawa, K., Yamanaka, N. Yoshizaki, S. and Ohte, N. ed. *Desertification and its combating measures in China - Japanese contribution to rehabilitation of degraded lands-*. Gakuhosya, Tokyo, 3-16, 30-34. (ISBN 978-4-904079-10-2) [山中典和(2011年6月) 乾燥地とはどういうところか、塩ストレスへの対応、吉川賢・山中典和・吉崎真司・三木直子編、「風に追われ水が蝕む中国の大地—緑の再生に向けた取り組み—」.学報社、東京、3-16、30-34]

Taniguchi, T. (Jun. 2011): Plants and the mycorrhizal fungi, In Yoshikawa, K., Yamanaka, N. Yoshizaki, S. and Ohte, N. ed. *Desertification and its combating measures in China - Japanese contribution to rehabilitation of degraded lands-*. Gakuhosya, Tokyo, pp. 35-40.(ISBN 978-4904079102) [谷口武士: 植物と菌根菌. 風に追われ水が蝕む中国の大地 (吉川賢ら編, ISBN 978-4904079102), 学報社、東京、pp. 35-40]