

List of scientific papers in 2016 published by field science group in Graduate School of Agricultural Science, Tohoku University

The Forest-Andisols Group

- Xia, Q., M. Ando and K. Seiwa (2016) Interaction of seed size with light quality and temperature regimes as germination cues in 10 temperate pioneer tree species. *Functional Ecology*, 30: 866-874.
- Bayandala, Y. Fukasawa and K. Seiwa (2016) Roles of pathogens on replacement of tree seedlings in heterogeneous light environments in a temperate forest: a reciprocal seed sowing experiment. *Journal of Ecology*, 104: 765-772.
- Ikezaki, Y., Y. Suyama, B. A. Middleton, Y. Tsumura, K. Teshima, H. Tachida and J. Kusumi (2016) Inference of population structure and demographic history in *Taxodium distichum*, a coniferous tree in North America, based on amplicon sequencing analysis. *American Journal of Botany*, 103: 11-13.
- Nakamura, K., T. Yano, Y. Suyama, O. Nishimura and K. Nakano (2016) Macrofauna in a full-scale vertical flow constructed wetland during vegetative growth stage. *Japanese Journal of Water Treatment Biology*, 52: 45-54.
- Sugai, K., S. Watanabe, T. Kuishi, S. Imura, K. Ishigaki, M. Yokota, S. Yanagawa and Y. Suyama (2016) Extremely low genetic diversity of the northern limit populations of *Nypa fruticans* (Arecaceae) on Iriomote Island, Japan. *Conservation Genetics*, 17: 221-228.
- Fukasawa, Y. (2016) Seedling regeneration on decayed pine logs after the deforestation events by pine wilt disease. *Annals of forest research* (in press)
- Fukasawa, Y., Y. Yoshihara and Y. Matsuki (2016) Aboveground-belowground linkages. Tokai University Press, Kanagawa (translated to Japanese from Bardgett and Wardle (2010) Aboveground-belowground linkages. Oxford University Press, Oxford).
- Fukasawa, Y. (2016) Biodiversity in deadwood. *Bulletin of the mountain naturalist club*, 15: 73-77.
- Takahashi, T. and R. A. Dahlgren (2016) Nature, properties and function of aluminum-humus complexes in volcanic soils. *Geoderma*, 263: 110-121.
- Matsui, T., T. Takahashi, H. Kanno and M. Nanzyo (2016) Inhibitory effect of amorphous aluminum

hydroxide gels on organic carbon decomposition in non-allophanic Andosols. *Pedologist*, 60(1): 4-13.

The Ruminant Production Group

- Chen, S., S. Ogura and S. Sato (2016) Effect of environmental enrichment on pituitary gland hormones and behavior of cattle. Abstract of the 14th International Symposium of Integrated Field Science, pp. 10–11 (invited).
- Futahashi, R., M. Yayota, N. Hatakeyama, T. Shishido and S. Ogura (2016) Application of a wearable camera to analyze ingestive behavior of grazing cattle. Abstract of the 14th International Symposium of Integrated Field Science, pp. 21.
- Hatakeyama, N., R. Futahashi, T. Shishido and S. Ogura (2016) Foraging behavior of cattle in a diverse, mountainous grazing land: Bite size estimation of plants by hand-plucking method. Abstract of the 14th International Symposium of Integrated Field Science, pp. 22.
- Jang, SY., S. Ogura, K. Kawamura, M. Yayota, YS. Yun, HJ. Seong, SH. Moon and BT. Jeon (2016) Seasonal changes in forage and animal productivity of Korean native goats grazed at different forage type. Abstract of the 14th International Symposium of Integrated Field Science, pp. 6 (invited).
- Kawamura, K., JH. Lim, M. Yayota, S. Ogura, SY. Jang and SH. Moon (2016) Spatial heterogeneity in grazing pasture from small unmanned aerial vehicle (sUAV) with structure from motion (SfM) photogrammetry. Abstract of the 14th International Symposium of Integrated Field Science, pp. 12 (invited).
- Lim, JH., K. Kawamura, R. Yoshitoshi, M. Yayota and S. Ogura (2016) Hyperspectral assessment for legume contents and forage nutrient status in pasture. Abstract of the 14th International Symposium of Integrated Field Science, pp. 13(invited).
- Ogura, S., S. Sato, S. Tanaka, T. Shimizu and A. Kodera (2016) Effect of cattle grazing in a wasted mulberry plantation on productivity of mulberry leaves and nutritional condition of cattle. *Japanese Journal of Grassland Science*, 61: 213-223 (in

- Japanese with English summary).
- Ogura, S. and S. Tanaka (2016) Pasture establishment in a wasted mulberry plantation under cattle grazing: Effect of seeding rate and bare area size on the establishment of sown species. *Japanese Journal of Grassland Science*, 62(2), 70-74 (in Japanese with English summary).
- Ogura, S., H. Mizuno, S. Takamizawa, M. Yayota and K. Kawamura (2016) Nutritional characteristics of forbs and tree leaves and their contribution to animal production in species-rich vegetation. Abstract of the 14th International Symposium of Integrated Field Science, pp. 5 (invited).
- Takamizawa, S., T. Shishido and S. Ogura (2016) Diet composition and nutrient uptake of cattle in a pasture-forest combining grazing area of northeast Japan. *Proceedings of 10th International Rangeland Congress*, pp. 1171-1173.
- Takamizawa, S., T. Shishido and S. Ogura (2016) Effect of native grasses, forbs and trees on nutrient uptake of grazing cattle in a temperate region of Japan. *Proceedings of 10th International Rangeland Congress*, pp. 1174-1176.
- Tamiya, S., K. Doi, N. Nakajima, S. Ogura and M. Yayota (2016) Effect of plant diversity on ruminal degradability of goats grazing in a semi-natural pasture. Abstract of the 14th International Symposium of Integrated Field Science, pp. 19.
- Takamizawa, S., T. Shishido and S. Ogura (2016) Does species richness of diet affect ruminal digestion characteristics of plants? -A preliminary study. Abstract of the 14th International Symposium of Integrated Field Science, pp. 20.
- Tozawa, A. (2016) Contribution of rearing at pasture on improvement of animal welfare in fattening pigs. Abstract of the 14th International Symposium of Integrated Field Science, pp. 9 (invited).
- Tozawa, A., T. Takahashi and S. Sato (2016) Effects of pasturing system on behaviour, lung disease, enteric bacteria and back fat skatole in fattening pigs. *Tohoku Journal of Animal Science and Technology*, 66(1), 23-32 (in Japanese with English summary).
- Tozawa, A. and K. Takeda (2016) The use of artificial grass to attract wild sika deer. *Proceedings of the 50th Congress of the International Society for Applied Ethology*, pp. 237.
- Yonezawa, C., S. Ogura and M. Saito (2016) Monitoring for the spatial distribution of radiation dose by paramotor observation. *Journal of the Japanese Agricultural Systems Society*, 32(3), 95-102 (in Japanese with English summary).
- Yonezawa, C., S. Ogura and M. Saito (2016) Aerial measurement of radiation dose distribution on grassland area in Kawatabi Field Science Center. *Journal of Integrated Field Science*, 13, pp.45 (Abstract of the 13th International Symposium of Integrated Field Science).
- Yonezawa, C., S. Ogura and M. Saito (2016) Monitoring temporal vegetation changes on ungrazed grassland by satellite and paramotor remote sensing. Abstract of the 14th International Symposium of Integrated Field Science, pp. 24.
- Ogura, S. (2016) A long-term ecological research in a *Miscanthus* grassland, Kawatabi area. *Japanese Journal of Grassland Science*, 62(2), 87-90 (in Japanese).
- Tozawa, A. (2016) The advantages of fattening pigs rearing at pasture. *Japanese Journal of Grassland Science*, 62(1), 33-37 (in Japanese).
- Tozawa, A. (2016) Behavioural and physiological responses of fattening pigs rearing at pasture. *Proceedings of Japanese Society for Animal Nutrition and Metabolism*, 60(1), 45-51 (in Japanese).
- Tozawa, A. (2016) Behavioural expressions and the effects of fattening pigs rearing at pasture. *Yotonno Tomo* Nov.2016, 13-15 (in Japanese).
- Nguyen, S.T., Y. Fukuda, D.T. Nguyen, C. Tada and Y. Nakai (2016) Prevalence and first genotyping of *Giardia duodenalis* in beef calves in Vietnam. *Tropical Animal Health and Production*, 48: 837-841.
- Yoshihara, Y., C. Tada, M. Takada, N. O. Purevdorj, K. Chimedtseren and Y. Nakai (2016) Effects of water source on health and performance of Mongolian free-grazing lambs. *Small Ruminant Research*, 137: 81-84.
- Baba, Y., Y. Matsuki, Y. Mori, Y. Suyama, C. Tada, Y. Fukuda, M. Saito, and Y. Nakai (2016) Pretreatment of lignocellulosic biomass by cattle rumen fluid for methane production. Bacterial flora and enzyme activity analysis. *Journal of Bioscience and Bioengineering* (in press).
- Nakamura, K., R. Hatakeyama, N. Tanaka, K. Takisawa, C. Tada, and K. Nakano (2016) A novel design for a compact constructed wetland introducing multi-filtration layers coupled with subsurface superficial space. *Ecological Engineering* (in press).

- Nakai, Y. and Y. Fukuda (2016) Cryptosporidiosis. Zoonosis, Third Ed, Eds: Kimura, T. et al., pp.420–424 (in Japanese).
- Nakai, Y. (2016) Introduction of Advances of Tohoku University Rapeseed Project, Eds: Nakai, Y. et al., Tohoku University Press (in press), (in Japanese).
- Nakai, Y. (2016) Renewable energy and rapeseed, Advances of Tohoku University Rapeseed Project, Eds: Nakai, Y. et al., Tohoku University Press (in press), (in Japanese).
- Nakai, Y. (2016) Future of Tohoku University Rapeseed Project, Advances of Tohoku University Rapeseed Project, Eds: Nakai, Y. et al., Tohoku University Press (in press), (in Japanese).
- Nakai, Y. (2016) concluding remarks of Advances of Tohoku University Rapeseed Project, Eds: Nakai, Y. et al., Tohoku University Press (in press), (in Japanese).
- Nakai, Y., T.Nishio, H. Kitashiba, M. Nanzyo, M. Saito, T. Ito, M. Ohmura and Y. Kanayama (2016) Tohoku University rapeseed project for restoring tsunami-salt-damaged farmland -Was the wisdom of agricultural science utilized for the restoration?- Springer (in press).
- Nakai, Y. (2016) Environmental preservation and laws and regulations, Animal Rearing Management, Eds: Kamata, T. et al., Buneido Press (in press).
- Nakai, Y. (2016) Amount and characteristics of animal manure, Animal Rearing Management, Eds: Kamata, T. et al., Buneido Press (in press).
- Nakai, Y. (2016) Animal manure treatment by microbial systems, Dictionary of food and microbes, Eds: Saito, K. et al., Asakura Publishing (in press).
- Tada, C., T. Kotogaoka, M. Takada and Y. Nakai (2016) Monitoring of microbial pathogens in pasturing livestock around Tuul river in Mongolia, Journal of Miyagi Prefectural Veterinary Medical Association (in press), (in Japanese).
- Nakai, Y. (2016) Animal environment HACCP and plant factories, Sustainable livestock production and human welfare, 70(12), 919-932 (in Japanese).
- Nakai, Y. (2016) Issues in the animal environment and future, Livestock Industry's Environmental Information, 65, 1-6 (in Japanese).
- Nakai, Y. et al. (2016) Growth of production by compost: Composting suitable for farming and distribution, Livestock Industry's Environmental Information, 66, 13-18 (in Japanese).
- Nakai, Y. (2016) Reconstruction of farmlands, food, agriculture and villages, Governance, Gyosei, Maruch issue, No.179, 27-29 (in Japanese).
- Nakai, Y. (2015) Sound human in sound environment, Sustainable livestock production and human welfare, 69(12), 1010-1020 (in Japanese).
- Nakai, Y., T. Nishio, H. Kitashiba, M. Nanzyo, M. Saito, T. Ito, M. Ohmura, M. Abe and Y. Ogushi (2015) The Agri-Reconstruction Project and Rapeseed Project for Restoring Tsunami-Salt-Damaged Farmland after the GEJE – An institutional effort, Post-Tsunami Hazard: Restoration and Reconstruction. In: Advances in Natural and Technological Hazards Research, 44, pp.293-310, Springer.
- Nakai, Y. (2015) Sound human in sound environment, Sustainable livestock production and human welfare, 69(12), 1010-1020 (in Japanese).

The Rice Production Group

- Asagi, N., K. Minamide, T. Uno, M. Saito and T. Ito (2016) Acidulocompost, a food waste compost with thermophilic lactic acid fermentation: its effects on potato production and weed growth. Plant Production Science, 19: 132-144.
- Gao, X., T. Ito, H. Nasukawa and S. Kitamura (2016) Application of Fertilizer Made of Steelmaking Slag in the Recovery of Paddy Fields Damaged by the Tsunami of 2011. ISIJ International, 56: 1103-1110.
- Hara, S. and M. Saito (2016) Isolation of inositol hexaphosphate (IHP) degrading bacteria from arbuscular mycorrhizal fungal hyphal compartments using a modified baiting method involving alginate beads containing IHP. Microbes and Environment, 31: 234-243.
- Nira, R. and T. Ito (2016) Formulation of a basic guideline to reduce phosphate fertilizer for paddy rice. Japanese Journal of Soil Science and Plant Nutrition, 87: 462-466 (in Japanese).
- Kato, Y., R. Tajima, A. Toriumi, K. Homma, N. Moritsuka, T. Shiraiwa, J. Yamagishi, P. Mekwatanakern, V. Chamarerck and B. Jongdee. (2016) Grain yield and phosphorus uptake of rain-fed lowland rice under unsubmerged soil stress. Field Crops Research, 190: 54–59.
- Yamaguchi, N., I. Taniyama, T. Kimura, K. Yoshioka and M. Saito (2016) Contamination of agricultural products and soils with radiocesium derived from

the accident at Fukushima Daiichi Nuclear Power Station: Monitoring, case studies and countermeasures. *Soil Science and Plant Nutrition*, 62: 303-314.

Yonezawa, C., S. Ogura and M. Saito (2016) Monitoring for the special distribution of radiation dose by paramotor observation. *Journal of the Japanese Agricultural Systems Society*, 32: 95-102 (in Japanese).

Asakawa, S., K. Suekuni, D. Liu, K. Akita, T. Uno, R. Tajima, T. Ito and M. Saito (2016) Effect of winter-flooding on methanogenic archaeal community structure in paddy field under organic farming. *Agriculture and Horticulture*, 91: 129-139 (in Japanese).

Ito, T. and K. Akita (2016) Effect of winter-flooding on soil nutrient dynamics and methane emission in organically managed paddy fields. *Agriculture and Horticulture*, 91: 167-172 (in Japanese).

Saito, M. (2016) Future perspectives on LCA in agriculture: Lessons from the research in Japan, Seminar at PhilRICE (17-18/Feb/2016).

Saito, M., R. Tajima and S. Uchida (2016) Possibility of non-nodulating soybean cultivation from the viewpoint of phosphorus resource scarcity, Ecobalance 2016 International Conference, Kyoto.

Tajima, R., K. Takahashi, T. Umetsu, T. Ito and M. Saito. (2016) Predicting yield, flowering and harvesting dates of highbush blueberry using temperature data: a case study in Field Science Center of Tohoku University. The 13th International Symposium on Integrated Field Science. Sendai.

Yonezawa, C., S. Ogura and M. Saito (2016) Spatial distribution of radiation dose in grassland area on Kawatabi Field Science Center, 13th International Symposium on Integrated Field Science, Sendai.

Yonezawa, C., S. Ogura and M. Saito (2016) Monitoring Temporal Vegetation Changes on Ungrazed Grassland by Satellite and Paramotor Remote Sensing, 13th International Symposium on Integrated Field Science, Sendai.

Marine Bio-Production Group

Hirase, S., M. Ikeda, S. Hayasaka, W. Iwasaki and A. Kijima (2016) Stability of genetic diversity in an intertidal goby population after exposure to tsunami disturbance. *Marine Ecology*, 37: 1161-1167.

Ando, D., M. Ikeda, M. Sekino, T. Sugaya, D.

Katamachi, K. Yoseda and A. Kijima. (2016) Improvement of mitochondrial DNA haplotyping in Japanese flounder populations using the sequences of control region and ND2 gene. *Nippon Suisan Gakkaishi*, 82: 712-719. (in Japanese with English abstract)

Hasegawa, M., M. Ikeda and Y. Fujimoto (2016) Distribution of the exotic freshwater shrimp *Neocaridina spp.* in Miyagi Prefecture and influence on the habitat of native shrimp *Paratya compressa improvisa*. *Izunuma-Uchinuma Wetland Researches*, 9: 47-56. (in Japanese with English abstract)

Kurita, Y., N. Hashimoto and W. Hiroshi (2016) Evolution of the molluscan body plan: the case of the anterior adductor muscle in bivalves. *Biological Journal of the Linnean Society*, 119: 420-429.

Okawa, T., Y. Kurita, K. Kanno, A. Koyama and N. Onikura (2016) Molecular analysis of the distributions of the invasive Asian clam, *Corbicula fluminea* (O.F. Müller, 1774), and threatened native clam, *C. leana* Prime, 1867, on Kyushu Island, Japan. *Bioinvasions Records*, 5: 25-29.

Kurita, Y. and N. Onikura (2016) Phenotypic shift of an alien piscivorous chub following translocation from a large lake to small irrigation ditches. *Ecological Research*, 31: 731-738.

Integrated Field Control Group

Morita, K. (2016) Consideration of Business Organizations of Family Farm, A Result Paper for Grants-in-Aid for Scientific Research of JSPS, pp.13-22 (in Japanese).

Morita, K. and M. Takahashi (2016) World Food Problems, *Food Economics* 5th ed., pp.158-179 (in Japanese).

Morita, K. and Y. Ohya (2016) Food Policy in Japan, *Food Economics* 5th ed., pp.180-196 (in Japanese).

Omura, M., H. Kihara, H. Hara and H. Bannai (2016) Current Situation and Challenging Issues in Restoration after 5 Years since the 2011 GEJE. Report on the Reconstruction Support in Higashi Matsushima, Rural Finance Research Institute: 1

Yonezawa, C., S. Ogura and M. Saito (2016) Aerial Measurement of Radiation Dose Distribution on Grassland Area in Kawatabi Field Science Center, *BJournal of Integrated Field Science*, 13, 45 (abstract).

Yonezawa, C., S. Ogura and M. Saito (2016) Extrac-

- tion of vegetation change on the grass land using paramotor-acquired imagery, Proceedings of the 60th Spring conference of the remote sensing society of Japan: 137-138 (in Japanese with English abstract).
- Yonezawa, C. and M. Watanabe (2016) MONITORING OF VARIABILITY IN CROP GROWTH ON RECONSTRUCTED AGRICULTURAL LAND AFTER THE 2011 GREAT EAST JAPAN EARTHQUAKE, Proceedings of International Geoscience and Remote Sensing Symposium 2016, 6308-6311, DOI: 10.1109/IGARSS.2016.7730649.
- Yonezawa, C. (2016) Observation of agricultural area on semi-mountainous area using Pi-SAR-L2, Proceedings of the 2016 Fall conference of the Japanese Agricultural Systems Society, 35-36 (in Japanese).
- Sekizawa, A., C. Yonezawa, D. Takahashi, K. Nagasawa and M. Osada (2016) Estimation of chlorophyll alpha contents using remote sensing data, Proceedings of the 2016 Fall conference of the Japanese Agricultural Systems Society, 27-28 (in Japanese).
- Yonezawa, C. (2016) Comparison of an ALOS-2 / PALSAR-2 decomposition image with a SPOT image for crop type classification, Proceedings of the 61th Fall conference of the remote sensing society of Japan: 143-144 (in Japanese with English abstract).
- Yonezawa, C., S. Ogura and M. Saito (2016) Monitoring temporal vegetation changes on ungrazed grassland by satellite and paramotor remote sensing, The 14th International Symposium on Integrated Field Science –International Symposium on Integrated Field Science - (oral presentation).
- Yonezawa, C., S. Ogura and M. Saito (2016) Aerial measurement of radiation dose distribution on grassland area in Kawatabi Field Science Center, The 13th International Symposium on Integrated Field Science – Conservation and Utilization of Biodiversity- (oral presentation).
- Yonezawa, C. (2016) An experimental study for agricultural field classification using air-borne synthetic aperture radar in Kawasaki-cho, Miyagi-ken, Research meeting of GIS association of Japan, Tohoku branch (oral presentation).
- Yonezawa, C., S. Ogura and M. Saito (2016) Monitoring for the spatial distribution of radiation dose by paramotor observation, Journal of the Japanese Agricultural Systems Society, 32,3: 95-102 (in Japanese with English abstract).
- Watanabe, M., C. Yonezawa, J. Sonoda, and M. Shimada (2016) Detection of damaged urban areas using interferometric SAR coherence change with PALSAR-2, Earth, planets and space, 68, 131: 33-34 DOI 10.1186/s40623-016-0513-2.
- Sonoda, J., M. Watanabe, C. Yonezawa, Y. Kanazawa, T. Goukon, S. Igarashi and A. Mitsutome (2016) Development of missing persons searching system using ground-penetrating and air-borne radars for large-scale natural disaster and its application to the victims by the Tohoku earthquake on 2011. Proceedings of 18th conference for Japan society for disaster information studies (poster presentation), (original title in Japanese).
- Sonoda, J., M. Watanabe, C. Yonezawa and Y. Kanazawa (2016) Experiment of Underground object Detection Using L-band Airborne Radar and UAV-SfM, Proceedings of the 2016 IEICE Society Conference.
- Watanabe, M., C. Yonezawa, J. Sonoda and M. Shimada (2016) Trial of detection for damaged urban area and landslide area from wide range of image obtained by L-ban SAR (PALSAR-2), the 60th Spring conference of the remote sensing society of Japan (poster presentation).
- Yonezawa, C. (2016) Development of Database for Kawatabi Field Center, Bulletin of Integrated Field Science Center, 31: 1-7 (in Japanese).
- Yonezawa, C. (2016) GIS data conversion of crops temporal change map on Field Science Center, Bulletin of Integrated Field Science Center, 31: 77-101 (in Japanese).