

List of scientific papers in 2019 published by field science group in Graduate School of Agricultural Science, Tohoku University

The Forest-Andisols Group

- Baba, Y., Y. Matsuki, Y. Mori, S. Takizawa, Y. Suyama, C. Tada, Y. Fukuda, M. Saito and Y. Nakai (2019) Pretreatment of lignocellulosic biomass with cattle rumen fluid for methane production: fate of added rumen microbes and indigenous microbes of methane seed sludge. *Microbes and Environments*, 34(4): 421-428.
- Fujii, K., Y. Matsuura, H. Kanno, Y. Takata, S. Hiradate, K. Tamura, H. Hirai and T. Kosaki (2019) Updating of soil education in high school textbook of geography. *Pedologist*, 63: 73-81. (in Japanese with English summary)
- Fukasawa, Y., Y. Ando, Y. Oishi, K. Matsukura, K. Okano, Z. Song and D. Sakuma (2019) Effects of forest dieback on wood decay, saproxylic communities, and spruce seedling regeneration on coarse woody debris. *Fungal Ecology*, 41: 198-208.
- Fukasawa, Y., Y. Ando, Y. Oishi, Satoshi N. Suzuki, K. Matsukura, K. Okano and Z. Song (2019) Does typhoon disturbance in subalpine forest have long-lasting impacts on saproxylic fungi, bryophytes, and seedling regeneration on coarse woody debris? *Forest Ecology and Management*, 432: 309-318.
- Gaddy, L. L., T. H. Carter, B. Ely, S. Sakaguchi, A. Matsuo and Y. Suyama (2019) *Shortia brevistyla comb. et stat. nov.*, (Diaspensiaceae), A narrow endemic from the headwaters of the Catawba River in North Carolina, U. S. A. *Phytologia*, 101(2): 113-119.
- Hirano, T., T. Saito, Y. Tsunamoto, J. Koseki, B. Ye, Van Tu Do, O. Miura, Y. Suyama and S. Chiba (2019) Enigmatic incongruence between mtDNA and nDNA revealed by multi-locus phylogenomic analyses in freshwater snails. *Scientific Reports*, 9: 6223.
- Hirano, T., T. Saito, Y. Tsunamoto, J. Koseki, L. Prozorova, Van Tu Do, K. Matsuoka, K. Nakai, Y. Suyama and S. Chiba (2019) Role of ancient lakes in genetic and phenotypic diversification of freshwater snails. *Molecular Ecology*, 28(23): 5032-5051.
- Itou, T., M. Kanno, Y. Suyama, K. Inaba and M. N. Aoki (2019) Opening the black box: microspatial patterns of zoospore dispersal, parentage, and selfing in the kelp *Ecklonia cava* as revealed by microsatellite markers. *Journal of Applied Phycology*, 31(5): 3283-3294.
- Kanno, H. (2019) A study on sulfur fertility evaluation of paddy soil. *Fertilizer Science*, 41: 29-49. (in Japanese)
- Kanno, H. (2019) Sulfur fertility in paddy soils -Can it be explained by available sulfur alone?-. *Kikan Hiryo-Jiho*, 472: 5-32 (2019). (in Japanese)
- Kusuma, Y. W. C., S. R. Ariati, R. A. Risna, C. Mitsuyuki, Y. Suyama and Y. Isagi (2019) Seedling selection using molecular approach for ex situ conservation of critically endangered tree species (*Vatica bantamensis* (Hassk.) Benth. & Hook. ex Miq.) in Java, Indonesia. *Tropical Conservation Science*, 12: 1-12.
- Park, J. S., K. Takayama, Y. Suyama and B. H. Choi (2019) Distinct phylogeographic structure of the halophyte *Suaeda malacosperma* (Chenopodiaceae/ Amaranthaceae), endemic to Korea-Japan region, influenced by historical range shift dynamics. *Plant Systematics and Evolution*, 305(3): 193-203.
- Sugiura, S., Y. Fukasawa, R. Ogawa and S. Kawakami (2019) Cross-kingdom interactions between slime molds and arthropods: a spore dispersal mutualism hypothesis. *Ecology*, 100: e02702.
- Suyama, Y. (2019) Use of MIG-seq method in forest genetics and tree breeding research. *Forest Genetics and Tree Breeding*, 8(2): 85-89. (in Japanese)
- Takata, K., H. Taninaka, M. Nonaka, F. Iwase, T. Kikuchi, Y. Suyama, S. Nagai and N. Yasuda (2019) Multiplexed ISSR genotyping by sequencing distinguishes two precious coral species (Anthozoa: Octocorallia: Coralliidae) that share a mitochondrial haplotype. *PeerJ*, 7: e7769.
- Wee, A. K. S., G. M. Mori, C. F. Lira-Medeiros, J. Núñez-Farfán, K. Takayama, L. Faulks, S. Shi, Y. Tsuda, Y. Suyama, T. Yamamoto, T. Iwasaki, Y. Nagano, Z. Wang, S. Watanabe and T. Kajita (2019) The integration and application of genomic information in mangrove conservation. *Conservation Biology*, 33(1): 206-209.
- Yoshihara, Y., T. Sasaki, D. Nyambayar, Y. Matsuki, Y. Baba and Y. Suyama (2019) Testing the effects of plant species loss on multiple ecosystem functions based on extinction scenarios. *Basic and Applied Ecology*, 38: 13-22.

The Ruminant Production Group

- Adeyemi, O. S., Y. Murata, T. Sugi, Y. Han and K. Kato (corresponding author) (2019) Nanoparticles show

- potential to retard bradyzoites *in vitro* formation of *Toxoplasma gondii*. *Folia Parasitologica*, 66(1). piiP11: 2019.001.
- Baba, Y., Y. Matsui, Y. Mori, S. Takizawa, Y. Suyama, C. Tada, Y. Fukuda, M. Saito and Y. Nakai (2019) Pretreatment of lignocellulosic biomass with cattle rumen fluid for methane production: fate of added rumen microbes and indigenous microbes of methane seed sludge. *Microbes and Environments*, 34(4): 421-428.
- Bando, H., A. Pradipta, S. Iwanaga, T. Okamoto, D. Okuzaki, S. Tanaka, J. Vega-Rodríguez, Y. Lee, J. S. Ma, N. Sakaguchi, A. Soga, S. Fukumoto, M. Sasai, Y. Matsuura, M. Yuda, M. Jacobs-Lorena and M. Yamamoto (2019) CXCR4 regulates Plasmodium development in mouse and human hepatocytes. *Journal Experimental Medicine*, 216(8): 1733-1748.
- Bando, H., Y. Lee, N. Sakaguchi, A. Pradipta, R. Sakamoto, S. Tanaka, J. S. Ma, M. Sasai and M. Yamamoto (2019) Toxoplasma Effector GRA15-Dependent Suppression of IFN- γ -Induced Antiparasitic Response in Human Neurons. *Frontiers in Cellular and Infection Microbiology*, 9: 140.
- Bochimoto, H., D. Kondoh, Y. Ishihara, M. H. B. Kabir and K. Kato (corresponding author) (2019) Three-dimensional fine structure of feeder organelle in *Cryptosporidium parvum*. *Parasitology International*, 73: 101958.
- Feng, M., Y. Fukuda and C. Tada (2019) Control of Bacterial Wilt Disease by Anaerobic Digester Effluent of Cattle Manure. Water and Environment Technology Conference 2019. (poster)
- Feng, M., Y. Fukuda and C. Tada (2019) Elucidation of the inhibitory effect of anaerobic digester effluent on bacterial plant diseases. 16th World Conference on Anaerobic Digestion 2019. (poster)
- Fisch, D., B. Clough, M. C. Domart, H. Bando, T. Masonou, L. M. Collinson, M. Yamamoto, A. R. Shenoy and E. M. Frickel (2019) Differential spatiotemporal targeting of *Toxoplasma* and Salmonella by GBP1 assembles caspase signalling platforms. *bioRxiv*, 792804.
- Fisch, D., H. Bando, B. Clough, V. Hornung, M. Yamamoto, A. Shenoy and E. M. Frickel (2019) Human GBP1 is a microbe-specific gatekeeper of macrophage apoptosis and pyroptosis. *THE EMBO JOURNAL*, 38(13): e100926.
- Fukasawa, M., T. Komatsu and Y. Higashiyama (2019) Sleep and lying behavior of milking Holstein cows at commercial tie-stall dairy farms. *Animal Science Journal*, 90: 1313-1319.
- Iwamoto, M., Y. Fukuda, H. sakada, C. Mori, Y. Hiraoka and T. Haraguchi (2019) Identification of the evolutionarily conserved nuclear envelope proteins Lem2 and MicLem2 in *Tetrahymena thermophila*. *Gene: X*, 1. DOI: 10.1016/j.gene.2019.100006
- Kakihara, H. and S. Ogura (2019) The effect of soil exchangeable aluminum on persistency of grass pasture. 2018 Annual Report of the Project of Integrated Compost Science (PICS), pp. 49-54.
- Komissarov, M. and S. Ogura (2019) Siltation and radiocesium pollution of small lakes in different catchment types far from the Fukushima Daiichi nuclear power plant accident site. *International Soil and Water Conservation Research*, 8(1): 56-65.
- Ogura, S. (2019) Human resource development for reconstruction and advancement of Tohoku region – Activity of Tohoku Agricultural Science Center for Reconstruction –. *Manabi no Mori*, 87: 1.
- Ogura, S. (2019) Nutritional characteristics of forage plants and foraging behavior of grazing animals in species-rich vegetation. Abstract of the International Symposium on New Insights on Animal Nutrition, Breeding and Reproduction, Yangzhou, China, p4. (26-27 Sep.) (invited)
- Sarwono, A. E. Y., S. Mitsuhashi, M. H. B. Kabir, K. Shigetomi, T. Okada, F. Osaka, S. Otsuguro, S. Ichikawa, K. Maenaka, N. Inoue, M. Igarashi, K. Kato and M. Ubukata (2019) Repurposing Existing Drugs: Identification of Irreversible IMPDH Inhibitors by High-Throughput Screening. *Journal of Enzyme Inhibition and Medicinal Chemistry*, 34 (1): 171-178.
- Takano, R., H. Kozuka-Hata, D. Kondoh, H. Bochimoto, M. Oyama and K. Kato (corresponding author) (2019) A High-Resolution Map of SBP1 Interactomes in Plasmodium falciparum-infected Erythrocytes. *iScience (Cell press)*, 19: 703-714.
- Takizawa, S., Y. Baba, C. Tada, Y. Fukuda and Y. Nakai (2019) Preservation of rumen fluid for the pretreatment of waste paper to improve methane production. *Waste Management*, 87: 672-678.
- Takizawa, S., Y. Fukuda, C. Tada and Y. Nakai (2019) Fibrolytic Enzyme Activity During Pretreatment using Rumen Fluid for the Anaerobic Digestion of Lignocellulose. 16th International Water Association World Conference on Anaerobic Digestion. (poster)
- Tanaka, S., S. Sato and S. Ogura (2019) The effect of transplantation on cattle dung pats and bare areas created by hoofs of cattle on the establishment seedlings of Japanese lawn grass (*Zoysia japonica* Steud.) at a mountainous pasture in Tohoku region. *Tohoku Journal of Animal Science Technology*, 68: 33-36. (in Japanese)

- Umetsu, M., Y. Fukuda, H. Takahashi and C. Tada (2019) Power generation with a batch type Microbial Fuel Cell using a hydrogenotrophic methanogen as cathodic catalyst. 16th World Conference on Anaerobic Digestion 2019. (poster)
- Umetsu, M., Y. Fukuda, H. Takahashi and C. Tada (2019) Simultaneous Power Generation and Methane Production by a Methanogenic Cathode Microbial Fuel Cell. Water and Environment Technology Conference 2019. (poster)
- Yamamoto-Sato, R., A. Tozawa, M. Tannai and S. Ogura (2019) The change of stress level in dairy cows associated with milking training of students. Bulletin of Integrated Field Science Center, 34: 1-6. (in Japanese)
- The Rice Production Group**
- Akyol, T. Y., R. Niwa, H. Hirakawa, H. Maruyama, T. Sato, T. Suzuki, A. Fukunaga, T. Sato, S. Yoshida, K. Tawaraya, M. Saito, T. Ezawa and S. Sato (2019) Impact of Introduction of Arbuscular Mycorrhizal Fungi on the Root Microbial Community in Agricultural Fields. Microbes and Environment, 34(1): 23-32.
- Naruse, T., Y. Ban, T. Yoshida, T. Kato, M. Namikawa, T. Takahashi, M. Nishida, S. Asakawa and T. Watanabe (2019) Community structure of microaerophilic iron-oxidizing bacteria in Japanese paddy field soils. Soil Science and Plant Nutrition, 65: 460-470.
- Nasukawa, H., R. Tajima, B. I. J. Muacha, M. C. F. Pereira, K. Naruo, S. Nakamura, M. Fukuda, T. Ito and K. Homma (2019) Analyzing soil-available phosphorus by the Mehlich-3 extraction method to recommend a phosphorus fertilizer application rate for maize production in northern Mozambique. Plant Production Science, 22: 211-214.
- Nishida, M., F. Takakai, T. Sato, Y. Kaneta, K. Tsuchiya and T. Takahashi (2019) Compost nitrogen applied to paddy fields can be utilized as a decade-long source of the nitrogen for rice plants. 14th International Conference of the East and Southeast Asia Federation of Soil Science Societies, Taipei, 4-5 November, 2019.
- Ohshima, K., T. Suzuki, T. Uno, R. Tajima, T. Ito and M. Saito (2019) Development of growth media for seedling production in arbuscular mycorrhizal fungi-based cultivation of Welsh onion. Soil Microorganisms, 73(2): 79-85. (in Japanese)
- Sawadogo, J. B., M. S. Alam, C. Suekuni, D. Liu, H. Ishikawa, M. Nishida, K. Tsuchiya, T. Takahashi and S. Asakawa (2019) Effect of paddy-upland rotation on the abundance of methane-oxidizing and ammonia-oxidizing microbial communities in paddy field soil. 14th International Conference of the East and Southeast Asia Federation of Soil Science Societies, Taipei, 4-5 November, 2019.
- Takakai, F., K. Hatakeyama, M. Nishida, O. Nagata, T. Sato and Y. Kaneta (2019) Effect of the long-term application of organic matter on soil carbon accumulation and GHG emissions from a rice paddy field in a cool-temperate region, Japan-II. Effect of different compost applications-. Soil Science and Plant Nutrition, 66: 96-105.
- Takakai, F., M. Toda, H. Watanabe, T. Takahashi, K. Togami, A. Takamoto, M. Nishida, T. Sato and Y. Kaneta (2019) Effect of continuous application of livestock manure compost on soil carbon accumulation and GHG emissions from a rice paddy field in a cool-temperate region, Japan. 14th International Conference of the East and Southeast Asia Federation of Soil Science Societies, Taipei, 4-5 November, 2019.
- Marine Bio-Production Group**
- Chow, S., T. Yanagimoto, K. Konishi, T. Ichikawa, N. Komatsu, T. Maruyama, M. Ikeda, K. Nohara, T. Oonuki and T. Imai (2019) Genetic diversity in type B of *Palaemon paucidens*. Aquatic animals, December 1, 2019.
- Ellrich, A. E., T. Yorisue and K. Momota (2019) Mechanisms underlying predator-driven biotic resistance against introduced barnacles on the Pacific coast of Hokkaido, Japan. 54th European Marine Biology Symposium, University College Dublin, Dublin, Aug. 25-29. (Poster)
- Ellrich, A. E., T. Yorisue and K. Momota (2019) Mechanisms underlying predator-driven biotic resistance against introduced barnacles on the Pacific coast of Hokkaido, Japan. 54th International Conference for Young Marine Researchers, University of Bremen, Bremen, Sep. 24-27. (Poster)
- Eguia, M. R. R., C. A. Lagman, Z. U. Basiao and M. Ikeda (2019) Genetic research initiatives for sustainable aquaculture production in the Philippines. Journal of Integrated Field Science, 16: 4-7.
- Hirase, S., M. Sekino, M. Ikeda, M. Hara and K. Kikuchi (2019) Population genomics of Pacific abalone species complex in early phase of marine speciation. Evolution 2019, Providence, RI, June 21-25. (Poster)
- Iguchi, A., M. Mizuyama, T. Yorisue and Y. Fujita (2019) Current situation and future issues of DNA studies of submarine caves of the Ryukyu Islands.

- Proceeding of the Japanese Society of Systematic Zoology, 16: 28-33.
- Ikeda, M. (2019) Future of Marine Aquaculture: Finding Solutions to Challenges. The 16th International Symposium on Integrated Field Science, "Future of Marine Aquaculture: Finding Solutions to Challenges", Tohoku University, Sendai, March 22.
- Yamada, Y., T. Ujibe, T. Shimizu, Y. Sato, Y. Tashiro, J. Sato, M. Ikeda and M. Takagi (2019) Genetic disturbance of the endangered Japanese aucha perch, *Coreoperca kawamebari*, in Tokushima Prefecture. Japanese Journal of Conservation Ecology. DOI: 10.18960/hozen.1901
- Yorisue, T., A. E. Ellrich and K. Momota (2019) Predator nonconsumptive limitation of prey recruitment contributes to predator-driven biotic resistance against introduced prey. Open International Symposium: Reproductive Biology of Barnacles, Carcinological Society of Japan, Tokyo University of Marine Science and Technology, Tokyo, Oct. 20. (Poster)
- Yorisue, T., A. Ido and K. Tsurumi (2019) Recent Challenges for Developing Barnacle Aquaculture Techniques in Japan. Journal of Integrated Field Science, 16: 13-15.
- Yorisue, T., A. Iguchi, R. Miwa, N. Iwasaki, Y. Tanaka, H. Sugishima, S. Kato, J. Minatoya, Y. Igarashi, N. Okamoto and A. Suzuki (2019) Habitat mapping for the deep-sea megafauna around cobalt-rich ferromanganese crusts in the Xufu Guyot of the northwestern Pacific. AGU Fall Meeting 2019, Moscone Center, San Francisco, Dec. 9-13. (Poster)
- Yorisue, T. and B. K. K. Chan (2019) Latitudinal gradient of cold temperature tolerance in an introduced barnacle (*Balanus glandula*) in Japan. The Fourth Asian Marine Biology Symposium, Howard Civil Service International House, Taipei, Nov. 4-6. (Poster)
- Yorisue, T., J. A. Ellrich and K. Momota (2019) Mechanisms underlying predator-driven biotic resistance against introduced barnacles on the Pacific coast of Hokkaido, Japan. Biological Invasions, 21(7): 2345-2356.
- Watanabe, H. K., C. Chen, T. Yorisue, B. K. K. Chan and V. Tunnicliffe (2019) Biogeography and taxonomy of deep-sea hydrothermal vent barnacles. The Crustacean Society Mid-Year Meeting, The Chinese University of Hong Kong, Hong Kong, May 26-30.
- Integrated Field Control Group**
- Fujii, T., K. Kaneko, H. Murata, C. Yonezawa, A. Katayama, M. Kuraishi, Y. Nakamura, D. Takahashi, Y. Gomi, H. Abe and A. Kijima (2019) Spatio-temporal dynamics of benthic macrofaunal communities in relation to the recovery of coastal aquaculture operations following the 2011 Great East Japan Earthquake and tsunami. Frontiers in Marine Science, 15: 535.
- Fujii, Y., T. Sumita, K. Nakamura, K. Yamamoto (2019) Consideration about Employment Awareness of the Agricultural Companies : A Case Study of the Large-scale Paddy Field Farms. Journal of rural society and economics, 37(1): 66-72.
- Inoue, S. and C. Yonezawa (2019) Extraction of flooding paddy field in the Japanese islands using Sentinel-1A data. Proceedings of the 2019 Spring conference of the Japanese Agricultural Systems Society, 19-20. (in Japanese)
- Miura, Y. and C. Yonezawa (2019) Forest Extraction on Semimountainous Rural Area with a Combination of Full Polarimetric SAR Image and LiDAR DATA. Proceeding of IGARSS 2019 - 2019 IEEE International Geoscience and Remote Sensing Symposium, pp.6736-6739.
- Murata, H., S. Sawayama, T. Komatsu and C. Yonezawa (2019) Analysis of Coastal Aquaculture Areas Using Alos-2 Palsar-2 Full Polarimetric Data: A Study Case in Hirota Bay, Iwate, Japan. Proceeding of IGARSS 2019 - 2019 IEEE International Geoscience and Remote Sensing Symposium, pp.3273-3276.
- Murata, H., T. Komatsu and C. Yonezawa (2019) Detection and discrimination of aquacultural facilities in Matsushima Bay, Japan, using full polarimetric L-band airborne synthetic aperture radar for integrated coastal zone management and marine spatial planning, International Journal of Remote Sensing, 40: 5141-5157.
- Saito, G., K. Uto, C. Yonezawa, Y. Sasaki, K. Yoshino, K. Oda, J. Sato, K. Oyoshi and Y. Mizukami (2019) Determination of planting crops using satellite data at Shonai Plain in Japan. IOP Conference Series: Earth and Environmental Science, 284.
- Yonezawa, C. (2019) An Attempt to Extract Paddy Fields Using Polarimetric Decomposition of PALSAR-2 Data. Proceeding of IGARSS 2019 - 2019 IEEE International Geoscience and Remote Sensing Symposium, pp.7172-7175.
- Yonezawa, C. and M. Watanabe (2019) Analysis of the applicability of multi-temporal full polarimetric airborne L-band SAR scattering to paddy rice field

mapping. *International Journal of Remote Sensing*, 41(7): 2500-2516.

Yonezawa, C. and T. Matsunami (2019) Drainage performance estimation and growth monitoring on soybean field using Sentinel-2 data. *Proceedings of the 67th Spring meeting of the remote sensing society of Japan*, pp.255-256. (in Japanese with English abstract)

Yonezawa, C. and T. Matsunami (2019) Observation of direct-seeding rice in well-drained paddy field by high resolution optical satellite imagery. *Proceedings of the 66th Spring meeting of the remote sensing society of Japan*, pp.51-52. (in Japanese with English abstract)