

List of scientific papers in 2023 published by field science group in Graduate School of Agricultural Science, Tohoku University

The Forest-Andisols Group

- Aktar, S., Mia, S., Makino, T., Rahman, M.M. and Rajapaksha, A.U. (2023) Arsenic removal from aqueous solution: A comprehensive synthesis with meta-data. *Sci. Total Environ.*, **862**: 160821-160835.
- Allekotte, H., Hiroya, T., Takahashi, D. and Suyama, Y. (2023) Phylogenetic origin of *Cryptomeria japonica* on Kinkasan island in Japan. *J. Integr. Field Sci.*, **20**: 27.
- Aoki, S., Li, P., Matsuo, A., Suyama, Y. and Ito, M. (2023) Molecular phylogeny and taxonomy of the genus *Nanocnide* (Urticaceae) with particular attention to the Ryukyu Islands endemic *N. lobata*. *Phytotaxa*, **607**: 23-40.
- Bell, K.L., Turo, K.J., Lowe, A., Nota, K., Keller, A., Encinas-Viso, F., Parducci, L., Richardson, R.T., Leggett, R.M., Brosi, B.J., Burgess, K.S., Suyama, Y. and de Vere, N. (2023) Plants, pollinators, and their interactions under global ecological change: the role of pollen DNA metabarcoding. *Mol. Ecol.*, **32**: 6345-6362.
- Ebihara, A., Tagane, S., Hirota, S.K., Suyama, Y., Nakato, N. and Kuo, L.-Y. (2023) Resurrection of *Spicantopsis hancockii* (Blechnaceae) as an endemic species to Taiwan -Reidentification of *Spicantopsis* in the Tokara Islands, Japan. *Taiwania*, **68**: 148-154.
- Fukasawa, Y. (2023) *Deadwood wonderland*, Tsukiji Shokan, Tokyo. (in Japanese)
- Fukasawa, Y., Akai, D., Ushio, M. and Takehi, T. (2023) Electrical conversation of ectomycorrhizal mushrooms after the rain. *Fungal Ecol.*, **63**: 101229.
- Fukasawa, Y. and Ishii, K. (2023) Foraging strategies of fungal mycelial networks: responses to quantity and distance of new resources. *Front. Cell Dev. Biol.*, **11**: 1244673.
- Hamabata, T., Kawata, M., Kondo, S., Matsuo, A., Suyama, Y., Suzuki, K. and Kameda, K. (2023) Twenty-year changes in the composition of a mixed stock of foraging green turtles in the Yaeyama Islands of Japan. *Mar. Ecol. Prog. Ser.*, **716**: 93-105.
- Hamatsu, K., Taguchi, H., Takahashi, D. and Suyama, Y. (2023) Development of plant environmental DNA analysis method for forest soil. *J. Integr. Field Sci.*, **20**: 25.
- Hirata, M., Higuchi, Y., Matsuo, A., Sato, M.P., Suyama, Y., Takako, K., Konuma, A., Tominaga, T. and Shimono, Y. (2023) Introduction pathways and evolutionary mechanisms of alien species of *Lolium* spreading across sandy coasts in Japan. *J. Eco.*, **111**: 2583-2596.
- Hoson, T., Ito, T., Fujii, S., Takahashi, D., Matsuo, A., Suyama, Y. and Maki, M. (2023) Molecular phylogenetic analyses of geographical and ecological speciation of *Anaphalis margaritacea*. *J. Integr. Field Sci.*, **20**: 28.
- Imanishi, J., Imanishi, A., Suyama, Y. and Isagi, Y. (2023) Geographical genetic structure of *Lespedeza cuneata* var. *cuneata* in Japan: Necessity of genetic considerations in slope revegetation. *Landscape Ecol. Eng.*, **19**: 583-596.
- Isagi, Y., Suyama, Y. and Makino, T. (2023) Tailor-made Biological Conservation of Endangered Plant Species with Genomic Information. *J. Integr. Field Sci.*, **20**: 15.
- Ishii, K. and Fukasawa, Y. (2023) Effects of the resource distance on the decisions of mycelial behavior. *J. Integr. Field Sci.*, **20**: 24.
- Itani, A., Masuo, S., Yamamoto, R., Serizawa, T., Fukasawa, Y., Takaya, N., Toyota, M., Betsuyaku, S. and Takeshita, N. (2023) Local calcium signal transmission in mycelial network exhibits decentralized stress responses. *PNAS Nexus*, **2**: 1-10.
- Kagawa, O., Hirota, S.K., Saito, T., Uchida, S., Watanabe, H., Miyazoe, R., Yamaguchi, T., Matsuno, T., Araki, K., Wakasugi, H., Suzuki, S., Kobayashi, G., Miyazaki, H., Suyama, Y., Hanyuda, T. and Chiba, S. (2023) Host-shift speciation proceeded with gene flow in algae covering shells. *Am. Nat.*, **202**: 721-732.
- Kawasaki, Y., Matsuoka, S., Sato, H., Pouska, V., Nordén, J., Orman, O., Bače, R., Panayotov, M., Tsvetanov, N., Mikoláš, M., Zíbarová, L., Papadimitriou, A., Polemis, E., Král, K., Svoboda, M. and Fukasawa, Y. (2023) Decay Types and Fungal Communities of Norway Spruce Dead Wood in Europe. *J. Integr. Field Sci.*, **20**: 22.
- Kikkawa, H.S., Sato, M.P., Matsuo, A., Sasaki, T., Suyama, Y. and Tsuge, K. (2023) Discrimination of *Camellia* cultivars using iD-NA analysis. *Sci. Rep.*, **13**: 17674.

- Kimura, S., Fukasawa, Y., Kominami, Y., Takagi, M., Matsukura, K., Ushio, M., Makoto, K., Suzuki, S., Takemoto, S., Tanaka, N., Jomura, M., Kadowaki, K., Kinuura, H. and Yamashita, S. (2023) Effects of oak wilt disease on fungal community composition and wood decomposition in dead *Quercus serrata* trunks. *J. Integr. Field Sci.*, **20**: 26.
- Motomiya, M., Takahashi, D., Tagane, S., Naiki, A., Watanabe, K., Ito, T. and Suyama, Y. (2023) Population genetic structure of a bamboo taxon, *Pleioblastus* Sect. *Pleioblastus*, in the Ryukyu Islands formed by geohistory and human activity. *J. Integr. Field Sci.*, **20**: 23.
- Murakami, S., Ito, T., Uemachi, T., Fujii, S., Matsuo, A., Suyama, Y. and Maki, M. (2023) Phylogeography of infraspecific differentiation of *Hydrangea serrata* (Hydrangeaceae), a widespread shrub species in the Japanese Archipelago. *J. Integr. Field Sci.*, **20**: 18.
- Nagatani, K., Inagawa, H., Takada, J., Nishikawa, Y., Shimamura, T., Suyama, Y., Mizunaga, Y. and Nakamura, K. (2023) Achievements of 10 years (2011-2020) of Ex-situ conservation of *Callianthemum miyabeanum* at Botanic Garden, Hokkaido University. *Bull. Jpn. Assoc. Bot. Gard.*, **57**: 66-71. (in Japanese)
- Nakajima, S., Suzuki, H., Nakatsugawa, M., Matsuo, A., Hirota, S.K., Suyama, Y. and Nakamura, F. (2023) Inferring future changes in gene flow under climate change in riverscapes: a pilot case study in fluvial sculpin. *Landscape Ecol.*, **38**: 1351-1362.
- Sakaba, T., Soejima, A., Fujii, S., Ikeda, H., Iwasaki, T., Saito, H., Suyama, Y., Matsuo, A., Kozhevnikov, A.E., Kozhevnikova, Z.V., Wang, H., Wang, S., Pak, J.-H. and Fujii, N. (2023) Phylogeography of the temperate grassland plant *Tephrosieris kirilowii* (Asteraceae) inferred from multiplexed inter-simple sequence repeat genotyping by sequencing (MIG-seq) data. *J. Plant Res.*, **136**: 437-452.
- Sato, M.P., Matsuo, A., Otsuka, K., Takano, K.T., Maki, M., Okano, K., Suyama, Y. and Ito-Inaba, Y. (2023) Potential contribution of floral thermogenesis to cold adaptation, distribution pattern, and population structure in skunk cabbage. *Ecol. Evol.*, **13**: e10319.
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- Suetsugu, K., Hirota, S.K., Hayakawa, H., Fujimori, S., Ishibashi, M., Hsu, T.C. and Suyama, Y. (2023) *Spiranthes hachijoensis* (Orchidaceae), a new species within the *S. sinensis* species complex in Japan, based on morphological, phylogenetic, and ecological evidence. *J. Plant Res.*, **136**: 333-348.
- Suetsugu, K., Hirota, S.K., Hsu, T.-C., Kurogi, S., Imamura, A. and Suyama, Y. (2023) *Monotropastrum kirishimense* (Ericaceae), a new mycoheterotrophic plant from Japan based on multifaceted evidence. *J. Plant Res.*, **136**: 3-18.
- Suetsugu, K., Hirota, S.K., Yonekura, K., Abe, A., Suyama, Y. and Hsu, T.-C. (2023) First record of *Thrixspermum annamense* (Orchidaceae) from Iriomote Island, Ryukyu Islands, Japan, with discussions on its intraspecific taxonomy. *Acta Phytotaxon. Geobot.*, **74**: 1-9.
- Suetsugu, K., Nozaki, T., Hirota, S.K., Funaki, S., Ito, K., Kurita, K., Isagi, Y., Suyama, Y. and Kaneko, S. (2023) Phylogeographical evidence for historical long-distance dispersal in the flightless stick insect *Ramulus mikado*. *Proc. R. Soc. B*, **290**: 20231708.
- Suyama, Y. (2023) Forest genetic studies using genome-wide SNP data by MIG-seq analysis. *For. Genet. Tree Breed.*, **12**: 63-67. (in Japanese)
- Suyama, Y. (2023) Preface to the 20th International Symposium on Integrated Field Science "Biodiversity and Phylogeography". *J. Integr. Field Sci.*, **20**: 1.
- Taguchi, H., Takahashi, D., Ito, T., Tagane, S., Sugawara, R., Oguri, E., Abe, H. and Suyama, Y. (2023) Phylogeography of *Juniperus* species (Cupressaceae) with a disjunct distribution in the island areas of Japan. *J. Integr. Field Sci.*, **20**: 21.
- Takahashi, D. and Suyama, Y. (2023) Demographic history and conservation aspects of two relict shrubs (*Daphnimorpha* spp., Thymelaeaceae) showing disjunct and restricted distribution in the southern part of Japan. *Tree Genet. Genomes*, **19**: 43.

- Tamaki, I., Mizuno, M., Ohtsuki, T., Shutoh, K., Tabata, R., Tsunamoto, Y., Suyama, Y., Nakajima, Y., Kubo, N., Ito, T., Noma, N. and Harada, E. (2023) Phylogenetic, population structure, and population demographic analyses reveal that *Vicia sepium* in Japan is native and not introduced. *Sci. Rep.*, **13**: 20746.
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- Uchiyama, K., Fujii, S., Tsuyama, I., Tanaka, N., Setsuko, S., Kimura, M.K., Suyama, Y. and Tsumura, Y. (2023) Range shift and introgression of three Japanese *Abies* species: insights from population genetic data and species distribution modeling. *Tree Genet. Genomes*, **19**: 41.
- Yahara, T., Hirota, S., Fujii, S., Kokami, Y., Fuse, K., Sato, H., Tagane, S. and Suyama, Y. (2023) Molecular phylogeny and taxonomy of *Hosta* (Asparagaceae), including five new species, *H. kagamiriparia*, *H. longipedicellata*, *H. minazukiflora*, *H. samukazemontana*, and *H. takiminazukiflora*, on Shikoku Island, Japan. *PhytoKeys*, **235**: 137-187.
- Ye, R., Tajima, R., Sadaike, A., Saito, D., Ogawa, M., Kawamura, I., Ishimori, S., Nakajima, T., Uno, T., Kano, K., Ito, T., Suyama, Y., Kato, S., Kikuchi, A. and Homma, K. (2023) Mixed cropping of determinate and indeterminate soybean lines enhances productivity. *Field Crops Res.*, **291**: 108785.
- The Ruminant Production Group**
- Adeyemi, O.S., Ishii, K. and Kato, K. (2023) L-tryptophan-titanium oxide nanoparticles showed selective anti-Toxoplasma gondii activity and improved host biocompatibility. *Biomed. Pharmacother.*, **162**: 114597.
- Adeyemi, O.S., Ishii, K. and Kato, K. (2023) The *In Vitro* Anti-Parasitic Activities of Emodin toward *Toxoplasma gondii*. *Pharmaceuticals*. **16**: 447.
- Dan, S., Kakihara, H. and Fukasawa, M. (2023) Effects of bed cleanliness on tucked and extended sleep-related lying postures of Japanese Black fattening cattle. *Anim. Biosci.*, **36**: 1769-1774. DOI: 10.5713/ab.23.0137
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- Jeje, T.O., Bando, H., Azad, M.T.A., Fukuda, Y., Ibukun, E.O. and Kato, K. (2023) Antiplasmodial and Interferon-gamma-modulating Activities of the Aqueous Extract of Stone Breaker (*Phyllanthus niruri* Linn.) in Malaria Infection. *Parasitol. Int.*, **97**: 102789.
- Molefe-Nyembe, N.I., Adeyemi, O.S., Kondoh, D., Kato, K., Inoue, N. and Suganuma, K. (2023) *In Vivo* Efficacy of Curcumin and Curcumin Nanoparticle in *Trypanosoma congolense*, Broden 1904 (Kinetoplastea: Trypanosomatidae)-Infected Mice. *Pathog.*, **12**: 1227.
- Nakano, H., Nakayasu, Y., Umetsu, M. and Tada, C. (2023) Semi-wet methanogen cathode composed of oak white charcoal for developing sustainable microbial fuel cells. *J. Biosci. Bioeng.*, **135**(6): 480-486.
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- Qianrige, Roh, S., Kim, D.H., Shishido, T. and Ogura, S. (2023) Effects of rumen fermentation characteristics on stress-related hormones and behavior in sheep. *Animals*, **13**: 3701. DOI: 10.3390/ani13233701
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- Sakurai, R., Yokoyama, Y., Fukuda, Y. and Tada, C. (2023) Quantification of free and esterified long-chain fatty acids without extraction by high-performance liquid chromatography in anaerobic digestion sludge, *J. Mater. Cycles Waste Manage.*, **25**(2): 810-815.
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- Umetsu, M., Watanabe, Y., Ueno, M., Kobayashi, T., Furukawa, H. and Tada, C. (2023) 3D-Printed Methane-Producing Electrodes for Microbial Fuel Cells Developed Using Biogel Ink Containing Live Methanogens and White Charcoal. *Macromol. Mater. Eng.*, **308**(12): 2300215.
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The Rice Production Group

- Jung, H., Tajima, R., Ye, R., Hashimoto, N., Yang, Y., Yamamoto, S. and Homma, K. (2023) Utilization of UAV Remote Sensing in Plant-Based Field Experiments: A Case Study of the Evaluation of LAI in a Small-Scale Sweetcorn. *Exp. Agric.* **13**: 561.
- Nasukawa, H., Tajima, R., Pereira, M.C.F., Nakamura, S., Fukuda, M., Naruo, K., Egami, T., Oya, T. and Ito, T. (2023) Comparative verification of Mehlich 3 soil analysis methods in Northern Mozambique using microwave plasma-atomic emission spectrometry. *Soil Sci. Plant Nutr.*, **69**(5-6): 327-336.
- Rongling, Y., Tajima, R., Sadaike, A., Saito, D., Ogawa, M., Kawamura, I., Ishimori, S., Nakajima, T., Uno, T., Kano, K., Ito, T., Suyama, Y., Kato, S., Kikuchi, A. and Homma, K. (2023) Mixed cropping of determinate and indeterminate soybean lines enhances productivity. *Field Crops Res.*, **291**: 108785.

Marine Bio-Production Group

- Fujii, T., Pondella, D. J., Todd, V.L.G. and Guerin, A. J. (2023) Editorial: Seafloor heterogeneity: Artificial structures and marine ecosystem dynamics - recent advances. *Front. Mar. Sci.*, **10**: 1181568.
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- Murata, H., Fujii, T. and Yonezawa, C. (2023) Evaluating the effect of the incidence angle of ALOS-2 PALSAR-2 on detecting aquaculture facilities for sustainable use of coastal space and resources. *PeerJ*, **11**: e14649. DOI: 10.7717/peerj.14649
- Takeda, M. and Ikeda, M. (2023) Distribution of *Palaemon paucidens* C type in Amami-Oshima and Kakeroma Islands with the data for the genetic characteristics and seawater requirement of the larvae. *Aquat. Anim.*, **2022**: 1-20. (in Japanese)
- Takeda, M. and Ikeda, M. (2023) Three types of *Palaemon paucidens* (sensu lato) including the C type endemic to Amami-Oshima Island. *Sea Slug News*, **120**: 5-7. (in Japanese)

Integrated Field Control Group

- Murata, H., Fujii, T. and Yonezawa, C. (2023) Evaluating the effect of the incidence angle of ALOS-2 PALSAR-2 on detecting aquaculture facilities for sustainable use of coastal space and resources. *PeerJ*, **11**: e14649. DOI: 10.7717/peerj.14649
- Muxiye and Yonezawa, C. (2023) Multi-Temporal and Multiscale Satellite Remote Sensing Imagery Analysis for Detecting Pasture Area Changes after Grazing Cessation Due to the Fukushima Daiichi Nuclear Disaste. *Remote Sens.*, **15**(22): 5416. DOI: 10.3390/rs15225416
- Muxiye and Yonezawa, C. (2023) Observation of Spatio-Temporal Changes in Pasturelands Abstained from Grazing. *Proc. 75th Autumn Conf. Remote Sens. Soc. Jpn.*, pp. 53-54.
- Narisawa, T. and Yonezawa, C. (2023) Monitoring of bamboo expansion using high-resolution satellite imagery after the Great East Japan Earthquake – A case study of Kitakami area, Ishinomaki City, Miyagi Prefecture –. *J. Jpn. agric. Syst. Soc.*, **38**(4): 59-66.

- Van Nguyen, T.C., Magezi, E.F. and Sumita, T. (2023) Inclusion of Smallholders in Staple Food Contract Farming: A case of Firm-Cooperative-Farmer Coordination in Thai Binh Province, Vietnam. *Jpn. J. Agric. Econ.*, **25**: 23-28.
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- Yonezawa, C. and Narisawa, T. (2023) Classification of Bamboo and Evergreen Japanese Bay Trees From Coastal Sanriku Forests of Northern Japan. *Proc. Int. Geosci. Remote Sens. Symp.2023*, pp. 3062-3065.
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