

List of scientific papers in 2003 published by field science group in Graduate School of Agricultural Science, Tohoku University

The Forest-Andisols Group

- Inoue, H., T. Ito and M. Saigusa (2003) No-tillage cultivation of corn using controlled release fertilizer. 12th International World Fertilizer Congress "Fertilization in the Third Millennium -Fertilizer, Food Security and Environmental Protection" Proceedings, 2 : 1028-1034.
- Kimura, M., K. Seiwa, Y. Suyama and N. Ueno (2003) Flowering system of heterodichogamous *Juglans ailanthifolia*. *Plant Species Biology*, 18(2-3) : 75-84.
- Mizuno, N., K. Nizamidin, M. Nanzyo, H. Yoshida and Y. Amano (2003) Judging conducive soils from clay mineralogical properties and soil chemical method to suppress fro potato common scap. *Soil Microorganisms*, 58(2) : 97-103. (In Japanese)
- Morikawa, C. K. and M. Saigusa (2003) Effect of continuous applications of low-acidulent fertilizer on acidification of an andisol and plant growth. *Comm. Soil Sci. Plant Anl.*, 34(5-6) : 619-628.
- Nanzyo, M., Y. Ebuchi and H. Kanno (2003) Apatite in the pyroclastic flow deposits (1990-1995) of the Unzen volcano, Japan, and its utilization by buckwheat. *Phosphorus Research Bulletin*, 16 : 1-10.
- Nizamidin, K., M. Nanzyo, Y. Amano and N. Mizuno (2003) Soil factors affecting 0.1 M HCl-soluble Cu of Andosols in Hokkaido, Japan. *Jpn. J. Soil Sci. Plant Nutr.*, 74 (6) : 801-804. (In Japanese)
- Nizamidin, K., M. Nanzyo, Y. Amano, T. Mizuno, H. Yoshida and N. Mizuno (2003) Clay mineralogical properties of volcanic ash soils in Hokkaido, Japan. *J. Rakuno Gakuen Univ.*, 28(1) : 7-45. (In Japanese)
- Satoh, M., K. Hikosaka, T. Sasaki, Y. Suyama, T. Yanai, M. Ohta and Y. Nakai (2003) Characteristics of a Novel Type of Bovine *Cryptosporidium andersoni*. *Applied and Environmental Microbiology*, 69(1) : 691-692.
- Seiwa, K. (2003) Seeds. *Encyclopedia of Ecology* eds. Y. Iwasa, T. Matsumoto, and K. Kikuzawa, pp. 238-239, Kyoritu Shuppan, Tokyo
- Takahashi, T. (2003) Soil clay and environmental conservation. *J. Clay Sci. Soc. Jpn.*, 42(3) : 154-157. (In Japanese)
- Takahashi, T. (2003) Acidity characteristics and edaphology of Kuroboku soils (Andosols). *Pedologist*, 47(2) : 122-128. (In Japanese)
- Takahashi, T., T. Sato, A. Sato and M. Nanzyo (2003) Relationship between 1 M KCl-extractable aluminum and pyrophosphate-extractable aluminum in A horizons of non-allophanic Andosols. *Soil Science and Plant Nutrition*, 49(6) : 729-733.
- Tian, X. and M. Saigusa (2003) Response of dent corn and sweet corn to two different forms of *co-situs* application methods of controlled release fertilizer in upland field of a volcanic ash soil. *Tohoku J. of Agr. Res.*, 54(1-2) : 1-15.
- Ueno, N. and K. Seiwa (2003) Gender-specific shoot structure and functions in relation to habitat conditions in a dioecious tree, *Salix sachalinensis*. *Journal of Forest Research*, 8(1) : 9-16.

The Ruminant Production Group

- Asai K., T. Yamaguchi, T. Kuroishi, Y. Komine, K. Kai, K. Komine and K. Kumagai (2003) Differential gene expression of cytokine and cell surface molecules in T cell subpopulation derived from mammary gland secretion of cows. *Am. J. Reprod. Immunol.*, 50(6) : 453-462.
- Deguchi, Y., S. Sato and K. Sugawara (2003) The situation of crop damage by wild large mammals and conservation of the mammals in Tohoku region. *Tohoku Journal of Animal Science and Technology*, 52 : 61-64.
- Deguchi, Y., S. Sato and K. Sugawara (2003) Estimating the ratio of the forage corn damage by Asiatic black bear (*Ursus thibetanus*) . *Tohoku Journal of Animal Science and Technology*, 53 : 9-12.
- Hashiba, T. and T. Yamaguchi eds. (2003) Textbook of biology for life science, 2nd ed., Baihukan, Tokyo. (Book : in Japanese)
- Hirata, M., S. Ogura (2003) Spatiotemporal variation in herbage mass in a grazed pasture : an approach at a feeding station scale. *Grassland Science*, 49 :

- 280–285 (special issue).
- Kamada, H., I. Konaka, S. Masaki, Y. Takayama, M. Amari, T. Takezawa, H. Ikumo and Y. Obara (2003) Effects of sodium selenite supplementation on reproductive performance and body fluid properties in pregnant Holstein heifers. *Anim. Sci. J.*, 74 : 363–368.
- Kitade, K., T. Nishita, M. Yamato, K. Sakamoto, A. Hagino, K. Katoh, and Y. Obara, Expression and localization of carbonic anhydrase in bovine mammary gland and secretion in milk. *Comp. Biochem. Physiol.*, 134A : 349–354.
- Kuroishi, T., K. Komine, K. Asai, J. Kobayashi, K. Watanabe, T. Yamaguchi, S. Kamata and K. Kumagai (2003) Inflammatory Responses of Bovine Polymorphonuclear Neutrophils Induced by Staphylococcal Enterotoxin C via Stimulation of Mononuclear Cells. *Clin. Diagn. Lab. Immunol.*, 10(6) : 1011–1018.
- Kushibiki, S., K. Hodate, H. Shingu, Y. Obara, E. Touno, M. Shinoda and Y. Yokomizo, (2003) Metabolic and lactational responses during recombinant bovine tumor necrosis factor- α treatment in lactating cows. *J. Dairy Sci.*, 86 : 819–827.
- Matsuzaki, M., T. Sato, K. Watanabe, N. Shiba, E. Tsuneishi and T. Yamaguchi (2003) Immunohistochemical detection of pituitary transcription factor-1 in paraffin sections of bovine adenohypophysis after wet heat-induced antigen retrieval. *Anim. Sci. J.*, 74(2) : 137–143.
- Nakai, Y. (2003) Harmonization between beef production and environment. *Beef Journal*, 2003(1) : 24–29. (review : in Japanese)
- Nakai, Y., M. Omura and T. Ichida (2003) Farming and livestock in Germany (1). *Animal Production Research*, 57(7) : 808–812. (review : in Japanese)
- Nakai, Y., M. Omura, and T. Ichida (2003) Farming and livestock in Germany (2). *Animal Production Research*, 57(8) : 916–920 (review : in Japanese)
- Ninomiya, S., R. Kusunose, S. Sato, M. Terata and K. Sugawara (2004) Effects of feeding methods on eating frustration in stabled horses. *Animal Science Journal*, 75 : 465–469.
- Obara, Y. (2003) Mechanism of fat marbling in muscle by leptin and vascular endothelial growth factor in beef cattle. *Annual Report of Ito Foundation*, 21 : 150–154. (review : in Japanese)
- Otawa, K., M. Sato, T. Sasaki, H. Sasaki, J. Nonaka, K. Ito, T. Kuroki and Y. Nakai (2003) Epidemiologic and genetic analysis of shiga-toxigenic *Escherichia coli*. *Bulletin of Integrated Field Science*, 19 : 19–25. (review : in Japanese)
- Satoh, M., K. Hikosaka, Y. Sasaki, Y. Suyama, T. Yanai, M. Ohta and Y. Nakai (2003) Characteristics of a novel type of bovine *Cryptosporidium*. *Appl. Environ. Microbiol.*, 69(1) : 691–692.
- Takahashi, T., S. Ogura and K. Sugawara (2003) Plant type selection of grazing cattle in sown and native grassland. *Bulletin of Integrated Field Science Center*, 19 : 13–17.
- Takeda, K., S. Sato and K. Sugawara (2003) Familiarity and group size affect emotional stress in Japanese Black heifers. *Applied Animal Behaviour Science*, 82 : 1–11.
- Watanabe, N., A. Nishiwaki and K. Sugawara (2003) Seed production of *Carex albata* Boott in sown pasture. *Grassland Science*, 49 : 49–51.
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- Wu, E., K. Saito, S. Sato and K. Sugawara (2003) Effects of surface application of phosphorus and lime materials on arbuscular mycorrhizal colonization of orchardgrass in grazing pasture. *Grassland Science*, 49 : 52–54.
- Yokota, T., T. Ito, T. Ono, M. Takahashi and M. Saigusa (2003) : Composition of inorganic phosphate in cattle manure composts with different production conditions. *Jpn. J. Soil Sci. Plant Nutr.*, 74 : 133–140. (In Japanese)
- Yokota, T., T. Ito, and M. Saigusa (2003) Measurement of total phosphorus and organic phosphorus contents of animal mature composts by the dry combustion method. *Soil Sci. Plant Nutr.*, 49(2), 267–272
- Yokota, T., M. Saigusa and T. Ito (2003) : Possibility of using sludge from water purification plants in animal manure composts to suppress phosphate and potassium dissolubility and organic matter decomposition. *Journal of Japanese Society of Waste Management Experts*, 14 : 183–190. (In Japanese)

- Yonekura, S., T. Senoo, Y. Kobayashi, T. Yonezawa, K. Katoh and Y. Obara (2003) Effect of acetate and butyrate on the expression of leptin and short-form leptin receptor in bovine and rat anterior pituitary cells. *Gen. Comp. Endocrinol.*, 133 : 165–172.
- Yoshida M., K. Katoh and Y. Obara. (2003) ACTH secretion in the ruminant. *Chikusan no Kenkyu*, 57 : 1275–1283. (review : in Japanese)

The rice Production Groups

- Goto, Y. (2003) Tillering behavior of rice plants. *Jpn. J. Crop Sci.*, 72 : 1–10. (In Japanese)
- Ito, T., Y. Ninomiya, M. Hanaki, K. Shibuya and M. Saigusa (2003) Soil properties and nitrogen adsorption activity of rice (*Oryza sativa* L.) in two no-tillage alluvial paddy soils. *Bulletin of Integrated Field Science Center.*, 19 : 1–6. (In Japanese)
- Maekawa, K., K. Watanabe, T. Kanto, M. Aino and M. Saigusa (2003) Effect of Soluble Silicic Acid on Suppression of Rice Leaf Blast, *Jpn. J. Soil Sci. Plant Nutr.*, 74, 293–299. (In Japanese)
- Morikawa, C. K., M. Saigusa, H. Nakanishi, N. Nishizawa and S. Mori (2003) Co-situs application of control release fertilizers to alleviate iron chlorosis of paddy rice grown in calcareous soil, The 6th ESAFS International Conference Soil Management Technology on Low-productivity and Degraded Soils (Taipei, TAIWAN) Extended Abstracts, 95–96.
- Okawa, S., A. Makino and T. Mae (2003) Effect of irradiance on the partitioning of assimilated carbon during the early phase of grain filling in rice. *Ann. Bot.*, 92 (3) : 357–364.
- Saigusa, M., H. Heinai, K. Shibuya, H. Okazaki and K. Yoshida (2003) Effect of acidified porous hydrate calcium silicate applied in a nursery bed soil on growth and nutrient uptake of rice seedling. *Jpn. J. Soil Sci. Plant Nutr.*, 74 : 333–337. (In Japanese)
- Saigusa, M., A. Ombodi, T. Owashi and H. Watanebe (2003) Supply of aimed form of nitrogen using controlled availability fertilizer. 12th International World Fertilizer Congress "Fertilization in the Third Millenium–Fertilizer, Food Security and Environmental Protection" Proceedings, 1 : 315–321.

- Sato, Y. and T. Nishio (2003) Mutation detection in rice waxy mutants by PCR–RF–SSCP. *Theor Appl Genet*, 107 : 560–567.
- Sudo, E., A. Makino and T. Mae (2003) Differences between rice and wheat in ribulose-1,5-bisphosphate regeneration capacity per unit of leaf-N content. *Plant Cell Environ.*, 26 (2) : 255–263.
- Tashiro, T., M. Saigusa, K. Chiba and K. Shibuya (2003) No-till direct seedling culture of rice (*Oryza sativa* L.) without covering soil using controlled release fertilizers. 12th International World Fertilizer Congress "Fertilization in the Third Millenium–Fertilizer, Food Security and Environmental Protection" Proceedings, 1 : 354–358.
- Ushio, A., A. Makino, S. Yokota, H. Naoki and T. Mae (2003) Xanthophyll cycle pigments and the water–water cycle in transgenic rice with decreased amounts of ribulose-1,5-bisphosphate carboxylase and the wild-type rice grown with different N levels. *Soil Sci. plant nutr.*, 49 (1) : 77–83.
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- Zhang, W. H., Y. J. Cui and M. Kokubun (2003) Factors affecting yield improvement of rice cultivars released in Tohoku region –Variation of grain filling percentage under high nitrogen application. *Tohoku J. Crop Sci.*, 46 : 65–66. (In Japanese).

Marine Bio-production Group

- Asuma, K., N. Horiki and N. Taniguchi (2003) Annual stock fluctuations of Ayu, *Plecoglossus altivelis*, in the coastal waters of the central Wakayama Prefecture Japan. *Suisanzoshoku*, 51(3) : 263–271.
- Hancz, C., I. Magyary, T. Molnar, S. Sato, P. Horn, and N. Taniguchi (2003) Evaluation of color intensity enhanced by paprika as feed additive in gold fish and koi carp using computer-assisted image analysis. *Fish. Sci.*, 69 : 1158–1161.
- Ikeda, M., M. Nunokawa and N. Taniguchi (2003) Lack of mitochondrial gene flow between

- populations of endangered amphidromous fish *Plecoglossus altivelis ryukyuensis* inhabiting Amami-oshima island. Fish. Sci., 69 : 1162–1168.
- Kaneko, K. and M. Omori (2003) Diel and tidal migrations and predator–prey relationships of macrobenthic animals in intertidal sandy beaches of Sendai Bay, northern Japan. Benthos Res., 58(1), 43 – 49.
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- Li, Q., C. Park, T. Kobayashi and A. Kijima (2003) Inheritance of microsatellite DNA markers in the Pacific abalone *Haliotis discus hannai*. Marine Biotech., 5 : 331–338.
- Li, Q., C. Park and A. Kijima (2003) Allelic transmission of microsatellites and application of kinship analysis in newly hatched Pacific abalone larvae. Fisheries Sci., 69 : 883–889.
- Mae, Y., N. Arai, Y. Kartavtsev and A. Kijima (2003) Genetic differentiation between Japan and Far East Russia in coastal oyster drill *Nucella freycineti*. Bull. Integrated Field Science Center, 19 : 39–45. (In Japanese)
- Nakadate, M., T. Shikano and N. Taniguchi (2003) Inbreeding depression and heterosis in various quantitative traits of the guppy *Poecilia reticulata*. Aquaculture, 220 : 219–226.
- Noguchi, D., S. Dong and N. Taniguchi (2003) Assignment of individuals for amphidromous and landlocked populations of ayu, *Plecoglossus altivelis* by relatedness estimator. Suisanzoshoku, 51(2) : 219–224.
- Noguchi, D., M. Ikeda, M. Nakajima and N. Taniguchi (2003) Isolation and characterization of microsatellite DNA markers for population genetic study of masu salmon, *Oncorhynchus masou masou*. 33 : 61–66.
- Ohara, K., T. Ariyoshi, E. Sumida and N. Taniguchi (2003) Clonal diversity in the Japanese silver crucian carp, *Carassius langsdorfii* inferred from genetic markers. Zool. Sci., 20 : 797–804.
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- Plaza-Pasten, G., S. Katayama and M. Omori (2003) Timing of parturition, planktonic duration, and settlement pattern of the black rockfish, *Sebastes inermis*, Env. Biol. Fish., 68, 229–239.
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- Takagi, M., S. Chow, T. Okamura, V. P. Scholey, A. Kanazawa, D. Margules, J. B. Wexler and N. Taniguchi (2003) Mendelian inheritance and variation of four microsatellite DNA markers in the yellowfin tuna *Thunnus albacores*. Fish. Sci., 69 : 1306–1308.
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