

## List of scientific papers in 2005 published by field science group in Graduate School of Agricultural Science, Tohoku University

### *The Forest – Andisols Group*

- Bacatio, C. D., H. Kubotera, M. Nanzyo and I. Yamada (2005) Partial rejuvenation of the soil in Intavas Techno Demo Farm, Bukidnon, Mindanao, Philippines by volcanic ash material. *J. Integrated. Field Sci.*, 2 : 19-28.
- Ito, T. (2005) Supply of nutrients and water to crops in upland soils. In *Introductions to Soil Science* (ed. Saigusa, M. and M. Kimura), Buneido, Tokyo, pp.51-62 (Book, in Japanese)
- Ito, T., N. Kikawa and M. Saigusa (2005) A Phosphorus Dynamics and Bioavailability in Andosols - Estimation of Potential Bioavailable P Transport in Agricultural Runoff of Andosols, *Journal of Integrated Field Science (JIFS)*, 2 : 73-76.
- Kanno, H., T. Miyamoto and M. Nanzyo (2005) Morphological and selected chemical characteristics of tephra-derived soils in Changbai volcano area, North China. *J. Integrated. Field Sci.*, 2 : 13-18.
- Kanno, H. and K. Seiwa (2004) Sexual vs. vegetative reproduction in relation to forest dynamics in the understorey shrub, *Hydrangea paniculata* (Saxifragaceae). *Plant Ecology*. 170 : 43-53.
- Kanno, M., J. Yokoyama, Y. Suyama, M. Ohyama, T. Itoh and M. Suzuki (2004) Geographical distribution of two haplotypes of chloroplast DNA in four oak species (*Quercus*) in Japan. *Journal of Plant Research*. 117 : 311-317.
- Matsumori, K., M. Saigusa and T. Ito (2005) Biennial weed control for no-tillage cultivation of glyphosate-resistant soybean, *Tohoku Weed J.*, 5 : 13-19 (In Japanese)
- Matsuyama N., M. Saigusa, E. Sakaiya, K. Tamakawa, Z. Oyamada, K. Kudo (2005) Acidification and soil productivity of allophonic andosols affected by heavy application of fertilizers. *Soil Sci. Plant Nutr.* 51 (1) : 117-123
- Matsuyama, N., M. Saigusa and K. Kudo (2005) Distribution of Strongly Acidic Non-Andosols in Japan Based on the Data in Soil Survey Reports on Reclaimed Land, *Pedologist*, 49 (1) : 33-37 (In Japanese)
- Naito, Y., A. Konuma, H. Iwata, Y. Suyama, K. Seiwa, T. Okuda, S.-L. Lee, N. Muhammad and Y. Tsumura (2005) Mating system and inbreeding depression in the early regeneration stages of *Neobalanocarpus heimii* (Dipterocarpaceae). *Journal of Plant Research*. 118 : 423-430.
- Nakai, M., M. Nanzyo, N. Imai, Y. Seki, K. Tazaki, Y. Sakurai, K. Togami, A. Takeda (2005) Behavior of heavy metals on the process of pedogenesis. *Jpn. J. Soil Sci. Plant Nutr.*, 76 : 539-545. (In Japanese)
- Nanzyo, M. (2005) Unique properties of volcanic ash soils and perspectives on their applications. *J. Integrated. Field Sci.*, 2 : 1-4.
- Nanzyo, M. (2005) Changes in elemental composition with andosolization. *J. Integrated. Field Sci.*, 2 : 83-87.
- Nanzyo, M. (2005) Soil inorganic components. *Jpn. J. Soil Sci. Plant Nutr.*, 76 : 701-705. (In Japanese)
- Nanzyo M. and K. Yamada (2005) Changes in chemical properties and water-percolation of soils overlaid with cattle manure compost. *J. Jpn. Soc. Soil Physics*, 99 : 45-54. (In Japanese)
- Ombodi, A. and M. Saigusa (2005) Band versus Nursery Pot Application of Polyolefin-coated fertilizer for Bell Peppers Grown in the Field, *Journal of Integrated Field Science (JIFS)*, 2 : 107-112
- Parducci, L., Y. Suyama, M. Lascoux and K. D. Bennett (2005) Ancient DNA from pollen : a genetic record of population history in Scots pine. *Molecular Ecology*. 14 : 2873-2882.
- Prokaj, E., H. Watanabe, Y. Suyama and M. Saigusa (2004) Identification of rabbiteye blueberry cultivars (*Vaccinium ashei* Reade) and analysis of genetic relationships using amplified fragment length polymorphism (AFLP). *International Journal of Horticultural Science*. 10 : 27-30.
- Saigusa, M. (2005) Integrated field science and its example in Graduate School of Agricultural science Center, Tohoku University, *Journal of Agricultural Science*, 60 : 32-36 (Review, in Japanese)
- Saigusa, M. (2005) Fertility of alluvial soils. In *Introductions to Soil Science* (ed. Saigusa, M. and M. Kimura), Buneido, Tokyo, pp.107-118 (Book, in Japanese)
- Saito, K., Y. Suyama, S. Sato and K. Sugawara (2004) Defoliation effects on the community structure of arbuscular mycorrhizal fungi based on 18S rDNA

- sequences. *Mycorrhiza*. 14 : 363-373.
- Sato, K., Y. Suyama, M. Saito and K. Sugawara (2005) A new primer for discrimination of arbuscular mycorrhizal fungi with polymerase chain reaction-denature gradient gel electrophoresis. *Grassland Science*. 51 : 187- 189.
- Seiwa, K. (2004) Sexual reproduction In : T. Koike (ed.) *Tree Ecophysiology*, pp.158-175, Asakura Shoten, Tokyo (Book : in Japanese).
- Seiwa, K. (2004) Ecophysiology of seed germination and seedling In : T. Koike(ed.) *Tree Ecophysiology*, pp.175-183, Asakura Shoten, Tokyo (Book : in Japanese).
- Suyama, Y. (2004) Molecular ecological approaches in forest research. *Forest Tree Breeding*. 212 : 24-29.
- Suyama, Y. (2004) Identification of mother trees based on microsatellite analysis of maternal tissues from seeds, fruits, and seedlings. *Journal of the Japanese Forest Society*. 86 : 177-183.
- Suyama, Y. (2004) Molecular approaches to analysis of the regeneration process of forest trees: identification of parental trees with maternal and biparental DNA from seedlings. *Japanese Journal of Ecology*. 54 : 261-265.
- Takahashi, T. and M. Nanzyo (2005) Aluminum dynamics in nonallophanic Andosols from northeastern Japan. *J. Integrated Field Sci.*, 2 : 77-82.
- Takeda, A., M. Nanzyo, and M. Nakai (2005) Major and trace element concentrations in soils Japan In: M. Nakai and M. Nanzyo (eds.) *Heavy Metals in Soil Environment*, Hakuyusha, Tokyo, pp.141-157. (In Japanese)
- Takeda, A., H. Tsukada, M. Nanzyo, Y. Takaku, T. Uemura, S. Hisamatsu and J. Inaba (2005) Effect of long-term fertilizer application on the concentration and solubility of major and trace elements in a cultivated Andisol, *Soil Sci. Plant Nutr.*, 51 (2) : 251-260.
- Tian X.-H. and M. Saigusa (2005) Response of Tomato Plants to a New Application Method of Poly-olefin-Coated Fertilizer, *Pedosphere*, 15 (4) : 191-198.
- Tian X.-H, M. Saigusa and N. Nikawa (2005) Effects of Controlled-Release Fertilizers and Their Application Methods on Germination and Seedling Growth of Dent and Sweet Corns, *Agricultural Sciences in China*, 4 (6) : 455-462.
- Tomita, M. and K. Seiwa (2004) Influence of canopy tree phenology on understorey populations of *Fagus crenata*. *Journal of Vegetation Science*. 15 : 379-388.
- Watanabe, K., T. Murayama, T. Niino, T. Nitta and M. Nanzyo (2005) Reduction of phosphatic and potash fertilizer in sweet corn production by pre-transplanting application of potassium phosphate to plug seedlings, *Plant Prod. Sci.*, 8 : 608-616.

### ***The Ruminant Production Group***

- Abe, N., H. Takazaki, S. Sato and K. Sugawara (2005) Behavioural sequence of mock- fighting to the handler in beef cattle. *Proceedings of the 39th International Congress of the ISAE*, pp.139.
- Aso, H., T. Yamasaki, K. Tahara, S. Takano, M. Inoue-Murayama, T. Minashima and S. Ito (2005) Production mechanisms of plasma glutathione peroxidase from bovine adipocyte. In 45<sup>th</sup> Annual Meeting of the American Society for Cell Biology.
- Aso, H., K. Tahara, T. Yamasaki, T. Minashima, M. Sanosaka, K. Miyazawa, S. Hayashi, T. Kanaya, K. Watanabe, S. Ohwada and T. Yamaguchi (2005) The winding road to candidate genes for marbling. Joint meeting of 2nd IS-AS and 3rd IS-IFS In the Abstracts of the International Symposium on Recent Advances in Animal Science, pp.20.
- Hagino, A., E. Inomata, T. Sato, Y. Ohtomo, Y. Sasaki and Y. Obara (2005) Effect in sheep of dietary concentrate content on secretion of growth hormone, insulin and insulin-like growth factor-1 after feeding. *Animal Science Journal* 76 : 55-63
- Hayashi, H., T. Yonezawa, T. Kanetani, F. Terada, K. Katoh and Y. Obara (2005) Expression of mRNA for Na<sup>+</sup>/glucose transporter 1 (SGLT1) and fatty acid translocase (CD36) in the ruminant gastrointestinal tract before and after weaning. *Animal Science Journal* 76 : 339-344.
- Hayashi, S., K. Watanabe, Y. Miura, S. Hayashi, M. Miyake, H. Aso, S. Ohwada and T. Yamaguchi (2005) Myostatin regulates MyHC isoform expression during myoblast differentiation in cattle. ADSA-ASAS-CSAS 2005 Joint Annual Meeting (American Society of Animal Science, American Dairy Science Association, and Canadian Society of Animal Science) [Cincinnati, USA] Oral presentation Abstract 388, *J. Anim. Sci.* Vol. 83, Suppl. 1/*J. Dairy Sci.* Vol. 88, Suppl. 1, 239.
- Hikosaka, K. and Y. Nakai (2005) A novel genotype

- of *Cryptosporidium muris* from large Japanese field mice, *Apodemus speciosus*. *Parasitol. Res.*, 97 : 373-379.
- Hikosaka, K., M. Satoh, Y. Koyama and Y. Nakai (2005) Quantification of the infectivity of *Cryptosporidium parvum* by monitoring the oocyst discharge from SCID mice. *Vet. Parasitol.*, in press
- Hirayama, T. and K. Katoh (2005) Effects of fistula size on rumen internal pressure and passage rate of feed in goats. *Small Ruminant Research* 56 : 277-280.
- Hong, Y.-H., Y. Nishimura, D. Hishikawa, H. Tsuzuki, H. Miyahara, C. Gotoh, K.-C. Choi, D. D. Fung, C. Chen, H.-G. Lee, K. Katoh, S.-G. Roh and S. Sasaki (2005) Acetate and propionate short chain fatty acids stimulate adipogenesis via GPCR43. *Endocrinology* 146 : 5092-5099.
- Ishiwata, H., K. Katoh, C. Chen, T. Yonezawa, Y. Sasaki and Y. Obara (2005) Suppressing actions of butyrate on growth hormone (GH) secretion induced by GH-releasing hormone in rat anterior pituitary cells. *General and Comparative Endocrinology* 143 : 222-230
- Kanaya, T., H. Aso, K. Miyazawa, T. Minashima, T. Kido, K. Tahara, T. Yamasaki, K. Watanabe, S. Ohwada and T. Yamaguchi (2005) The Characteristics of an Established Clonal Murine Intestinal Epitheliocyte (MIE) . In 45<sup>th</sup> Annual Meeting of the American Society for Cell Biology.
- Kanaya, T., H. Aso, K. Miyazawa, T. Minashima, T. Kido, K. Watanabe, S. Ohwada, T. Yamaguchi (2005) An Established Murine Intestinal Epitheliocyte (MIE) Cell Line. Joint meeting of 2nd IS-AS and 3rd IS-IFS In the Abstracts of the International Symposium on Recent Advances in Animal Science, pp.38.
- Katoh, K., M. Yoshida, Y. Kobayashi, M. Onodera, K. Kogusa and Y. Obara (2005) Responses induced by arginine-vasopressin injection in the plasma concentrations of adrenocorticotrophic hormone, cortisol, growth hormone, and metabolites around weaning time in goats. *Journal of Endocrinology* (in press)
- Katoh, K. (2005) Production of short-chain fatty acids and their biological actions in the gut. *FOOD STYLE* 11 : 42-44. (Review : in Japanese)
- Katoh, K., K. Yoshioka, H. Hayashi, T. Mashiko, M. Yoshida, Y. Kobayashi and Y. Obara (2005) Effects of 5'-uridylic acid feeding on postprandial plasma concentrations of growth hormone, insulin and metabolites in young calves. *Journal of Endocrinology* 186 : 157-163.
- Kohari, D., T. Kosako, S. Sato and K. Sugawara (2005) The evaluation of grazing environment condition: the scales, the slopes and ground condition of grazing pasture. *Journal of Integrated Field Science* 2: 89-93.
- Kohari, D., S. Sato, Y. Nakai and K. Sugawara (2005) Effect of maternal grooming on the number of bacteria adhering to the coats of calves in cattle. *Proceedings of the 39th International Congress of the ISAE*, pp.157.
- Koyama, Y., M. Satoh, K. Maekawa, K. Hikosaka and Y. Nakai (2005) Isolation of *Cryptosporidium andersoni* Kawatabi type in a slaughterhouse in the northern island of Japan. *Vet. Parasitol.*, 130 : 323-326.
- Koyama, Y., M. Motobu, K. Hikosaka, M. Yamada, K. Nakamura, H. Saido-Sakanaka, A. Asaoka, M. Yamakawa, K. Sekikawa, H. Kitani, K. Shimura, Y. Nakai and Y. Hirota (2005) Protective effects of antimicrobial peptides derived from the beetle *Alomyrina Dichotoma defensin* on endotoxic shock in mice. *Int. Immunopharmacol.*, in press
- Kumagai, M., K. Suzuki, H. Shinohara, Y. Ohtomo and A. Nishida (2005) Heritability estimates of liabilities to digestive diseases in heavy racehorses. *Animal Science J.* 76 : 407-412.
- Kumagai C., K. Saito, K. Hatanaka, N. Taki, M. Saigusa (2005) A simple method for evaluating the maturity of animal manure compost based on carbon dioxide emission rate. *Jpn. J. Soil Sci. Plant Nutr.* 76 (4) : 435- 440.
- Minashima, T., H. Aso, K. Tahara, T. Yamasaki, S. Takano, T. Kanaya, S. Ohwada, K. Watanabe and T. Yamaguchi (2005) Localization of annexin II and V during chondrogenesis and calcification. In 45<sup>th</sup> Annual Meeting of the American Society for Cell Biology.
- Minashima, T., H. Aso, K. Tahara, T. Yamasaki, S. Ohwada, K. Watanabe and T. Yamaguchi (2005) Calcification needs the release of ANX II as well as ANX V from chondrocytes. The winding road to candidate genes for marbling. Joint meeting of 2nd IS-AS and 3rd IS-IFS In the Abstracts of the International Symposium on Recent Advances in Animal Science, pp.39.
- Miyazawa, K., H. Aso, T. Kanaya, T. Kido, K. Wata-

- nabe, S. Ohwada and T. Yamaguchi (2005) The process of porcine M cell differentiation within the follicle-associated epithelium. ADSA-ASAS-CSAS 2005 Joint Annual Meeting (American Society of Animal Science, American Dairy Science Association, and Canadian Society of Animal Science) [Cincinnati, USA] Oral presentation Abstract 550, J. Anim. Sci. Vol. 83, Suppl. 1/J. Dairy Sci. Vol. 88, Suppl. 1, 351.
- Mohamoud A.-A., S. Nishida, K. Suzuki and A. Nishida (2005) Estimation of direct and maternal genetic parameters for growth and carcass traits in a herd of Japanese Black cattle in Miyagi prefecture, using a multi-trait animal model. *Animal Science J.*, 76 : 187-193.
- Mohamoud A.-A., S. Nishida, K. Suzuki and A. Nishida (2005) Estimation of direct and maternal genetic and permanent environmental effects for weight from birth to 365 days of age in a herd of Japanese black cattle using random regression. *J. Animal Science*. 83 : 519-530.
- Nagai, Y., T. Nochi, K. Watanabe, K. Watanabe, H. Aso, H. Kitazawa, S. Ohwada and T. Yamaguchi (2005) Localization of Interleukin-18 and its receptor in somatotrophs of the bovine anterior pituitary gland. *Cell and Tissue Research*, 322 (3) : 455-462.
- Nagai, Y., K. Watanabe, H. Aso, S. Ohwada, T. Yamaguchi (2005) Localization of Interleukin-18 and its receptor in somatotrophs of bovine anterior pituitary gland. ADSA-ASAS-CSAS 2005 Joint Annual Meeting (American Society of Animal Science, American Dairy Science Association, and Canadian Society of Animal Science) [Cincinnati, USA] Oral presentation Abstract 202, J. Anim. Sci. Vol. 83, Suppl. 1/J. Dairy Sci. Vol. 88, Suppl. 1, 121-122.
- Nakai, Y. (2005) Probiotic bioremediation, In : *Probiotics and Bioenics* (Ito K. ed.), NTS, Tokyo. pp.178-193. (Book : in Japanese)
- Nakai, Y. (2005) Physiology of Coccidia, In : *Coccidia* (Nakai Y. ed.), Tohoku University Press, Sendai. pp.27-32. (Book : in Japanese)
- Nakai, Y. (2005) Infection and development of *Coccidia*, In : *Coccidia* (Nakai Y. ed.), Tohoku University Press, Sendai. pp.41-54. (Book : in Japanese)
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- Ninomiya, S., S. Sato, R. Kusunose, T. Mitumasu and Y. Obara (2005) Behavioural indicators of frustration and pleasure in stabled horses. *Proceedings of the 39th International Congress of the ISAE*, pp.49.
- Nishida, A., H. Shinohara, Y. Ohtomo and K. Suzuki (2005) A method for evaluating the change in genetic constitution of pigs line. *Jpn. Swine Science*, 42 : 34-36.
- Nishii, N., Y. Obara, M. Takasu, K. Katoh, K. Kitoh, Y. Sasaki and H. Kitagawa (2005) Serum growth hormone and insulin-like growth factor-1 concentrations in Japanese black cattle with renal tubular dysplasia. *Journal of Veterinary Medical Science* 67 : 399-402
- Obara, M., S. Ogura, T. Shishido and K. Sugawara (2005) Seed dispersal by defecation of grazing cattle. –Seasonal change in seed germinability of three monocotyledons and ingestion of seeds by cattle. *Bulletin of Integrated Field Science Center* 21 (in press). (in Japanese)
- Ogura, S., Y. Nagatomo and M. Hirata (2005) Estimation of herbage mass in a bahia grass (*Paspalum notatum*) and a centipede grass (*Eremochloa ophiuroides*) pasture using a capacitance probe, a sward stick and a rising plate. *Tropical Grasslands* 39 : 22-30.
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- Sakamoto, K., T. Komatsu, T. Kobayashi, M. T. Rose, H. Aso, A. Hagino and Y. Obara, (2005) Growth hormone acts the synthesis and secretion of  $\alpha$ -casein in bovine mammary epithelial cells. *Journal of Dairy Research* 72 : 264 - 270
- Saigusa, M. 2005. Organic waste and recycling agriculture, maximum efficiency minimum pollution agriculture. *Tohoku J. Crop Sci.* 48 : 87-90
- Sasaki, H., H. Yano, T. Sasaki and Y. Nakai (2005) A survey of ammonia-assimilating micro-organisms in cattle manure composting. *J. Appl. Microbiol.*, in press

- Sato, K., Y. Suyama, M. Saito and K. Sugawara (2005) A new primer for discrimination of arbuscular mycorrhizal fungi with polymerase chain reaction-denature gradient gel electrophoresis. *Grassland Science* 51 : 179-181.
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- Sato, S. (2005) Role of grazing. In : *Subject-Book on Agriculture of Environmental Conservation Type*. (Ed. by R. Ishii et al.) Maruzen, Tokyo, pp.865-869. (Book : in Japanese)
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- Sato, S. (2005) "Happiness" defined by the applied ethologist. *University Press*. 394 : 45-49. (in Japanese)
- Sato, S. (2005) Ethics and science on farm animal welfare. *SEIBUTSUKAGAKU* 56 : 194-203 (in Japanese)
- Sato, S. (2005) Change of husbandry and management techniques: From "management" to "comfort". *Japanese Journal of Human Animal Relations* 15 : 33-37. (in Japanese)
- Sato, S. (2005) Proposal of fenceless free-range system of beef cattle production in the national forest. *Kanto Journal of Animal Science* 55 : 115-119. (in Japanese)
- Seo, T., K. Date, T. Daigo, F. Kashiwamura and S. Sato (2005) Welfare assessment on Japanese dairy farms using Animal Needs Index. Assessment of Animal Welfare at Farm and Group Level 3rd International Workshop. Abstracts of Oral Presentations and Posters. University of Veterinary Medicine and University of Natural Resources and Applied Life Sciences, pp.97.
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- Takasu, M., K. Katoh, K. Kito, Y. Sasaki and H. Kitagawa (2005) Endocrine patterns in two strains of Japanese black cattle with growth retardation. *Journal of Veterinary Medical Science* (in press)
- Tanaka, S., K. Miyazawa, K. Watanabe, S. Ohwada, H. Aso and T. Yamaguchi (2005) Cytokine expression of T cell subsets in bovine peripheral blood. *ADSA-ASAS-CSAS 2005 Joint Annual Meeting* (American Society of Animal Science, American Dairy Science Association, and Canadian Society of Animal Science) [Cincinnati, USA] Oral presentation Abstract 545, *J. Anim. Sci.* Vol. 83, Suppl. 1/*J. Dairy Sci.* Vol. 88, Suppl. 1, 350.
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- Tsutsumi, M., K. Kawamura, M. Sugiyama, S. Sato, Y. Deguchi, K. Sugawara, S. Sakanoue and S. Itano (2005) Estimating the Spatial Distribution of Available Biomass in Grazing Forests with a Satellite Image : A Preliminary Study. *Grassland Science* 51 : 107-111.
- Yamaguchi, T. (2005) Topics for immune responses in bovine mammary gland. *Journal of Clinical Veterinary Medicine* 23 (1) : 21-26. (in Japanese)
- Yasue, T., Sugiyama, M. and Sato, S. (2005) Cattle roaming behaviour among the six main feeding-sites on fenceless agro-forestry system. *Proceedings of the 39th International Congress of the ISAE*, pp.154.
- Yasue, T. and S. Sato (2005) Foraging behavior and management of domestic cattle under free-ranging system. *Mammalian Science* 45 : 105-110. (in Japanese)
- Yamasaki, T., M. Inoue-Murayama, K. Tahara, S. Takano, A. Sugiyama, T. Itoh, A. Takasuga, Y. Sugimoto, M. T. Rose, H. Aso and S. Ito (2005) Isolation of genes showing increased expression during bovine adipocyte differentiation. *Animal Science Journal*, 76 : 479-489.
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### ***The rice Production Groups***

- Heinai, H., M. Saigusa, K. Yoshida and H. Okazaki (2005) Effect of application of acidified porous hydrate calcium silicate and porous hydrated calcium silicate on the growth of rice plants (*Oryza sativa* L.). *Soil Sci. Plant Nutr.* 51 (7) : 961-966.
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### ***Marine Bio-production Group***

- Agatsuma, Y., M. Sato and K. Taniguchi (2005) Factors causing brown-colored gonads of the sea urchin *Strongylocentrotus nudus* in northern Honshu, Japan. *Aquaculture*, 249 : 449-458.
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