

Curriculum vitae

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Associate Professor

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Education

1985	BSc Saga University, Faculty of Agriculture, Department of Agricultural Engineering. Saga, Japan
1993	MSc Kansas State University. Department of Agricultural Engineering. Manhattan Kansas, USA. MS thesis: Alachlor and atrazine losses from runoff and erosion in the Blue River basin
1999	Ph.D. University of California, Davis. Department of Biological and Agricultural Engineering. Davis, California, USA. Ph.D. dissertation: Nonpoint source pollution control of diazinon in dormant sprayed orchards, use of inter-row vegetative filter strips - A Multi-system Approach -

Work Experiences

1985 Apr. - 1986 Jul.	Tochi Kairyo Sha Co. Ltd. (Worked mainly for irrigation and land improvement projects as an agricultural engineer)
1986 Sep. - 1989 Apr.	Japan International Cooperation Agency, Japan Overseas Cooperation Volunteers (Serviced as an irrigation engineer at Lake Basin Development Authority in Republic of Kenya)
1992 Aug.-1993 Jun.	Research Assistant. Kansas State University. Department of Agricultural Engineering
1993 Sep.-Dec.	Teaching Assistant of Fluid Dynamics. University of California, Davis.
1994 Jan.-Apr.	Teaching Assistant of Principle of Hydrology. University of California, Davis.
1995 Sep. - 1997 Dec.	Research Assistant. University of California, Davis.
1998 Feb. - 2000 Jul.	Japan Science and Technology Agency, Domestic Research Fellow at National Institute for Agro-Environmental Sciences
2000 Aug. - 2006 Dec.	Assistant Professor, Tokyo University of Agriculture and Technology, Department of International, Environmental & Agricultural Sciences.
2007 Jan. - 2008 May.	Senior Assistant Professor, Tokyo University of Agriculture and Technology, Department of International, Environmental & Agricultural Sciences.
2008 Jun. - Present.	Associate Professor, Tokyo University of Agriculture and Technology, Department of International, Environmental & Agricultural Sciences.

Research assistantships and fellowship

1. Research Assistantship at Kansas State University, Department of Agricultural Engineering. 1992 Aug. - 1993. Jun.
2. Research Assistantship at University of California at Davis, Department of Agricultural Engineering. 1993 Sep. - 1994 Aug.
3. Research Assistantship at University of California at Davis, Department of Land Air and Water Resources. 1995 Sep. - 1997 Dec.
4. Japan Science and Technology Agency, Domestic Research Fellowship (National Institute of Agro-Environmental Sciences) 1998 Feb. - 2000 Jul.

Awards

1. Life member of Alpha Epsilon Honor Society of Agricultural Engineer.
2. Outstanding Contribution Award. The XIV Memorial CIGR World Congress, Tsukuba, November, 2000

Research funds

1. Japan Science and Technology Agency, Domestic Research Fellowship Research fund. 1998 Feb. - 2000 Jul. 3,600,000 ¥ (1400,000 ¥ per year)
2. 2001. Jun - 2002 May. Foundation of River and Watershed Environment Management, No. 13-1-1-9, 900,000 ¥
3. 2001 Apr. - 2002 Mar. Grants-in-Aid for Scientific Research. No. 13027223, Development of a risk assessment system for Endocrine Disrupter Substances from paddy fields, 1,600,000 ¥
4. 2002 Apr. - 2004 Mar. Grants-in-Aid for Scientific Research. No. 14042101, Development of an assessment system for Endocrine Disrupter Substances from paddy fields using a river quality model. 1,700,000 ¥
5. 2003 Jul. - 2004 Dec. Japan Society of the Promotion of Sciences. SAKURA program Japan-France scientific exchange. Pesticide transport in small rural watershed in context of water-logged soil. 1,900,000 ¥.
6. 2005 Oct. - 2008 Mar. Grants-in-Aid for Scientific Research. No. 17651006, Development of a micro-paddy lysimeter for rapid analysis of pesticide fate in paddy fields. 2,000,000 ¥.
7. 2008 Apr. – 2009 Mar. Pesticide (herbicide) fate and transport and its risk assessment in paddy rice environment in Taiwan. Interchange Association Japan. 1,200,000 ¥.
8. 2008 Apr. – 2010 Mar. Pesticide (herbicide) fate and transport and its risk assessment in paddy rice environment in Taiwan. Interchange Association Japan. 810,000 ¥.
9. 2008 Apr. – 2011 Mar. Fate and transport of nursery box applied insecticide (imidacproprid and fipronyl) in paddy field. In: ExTEND2005 A study for biological information on natural organisms. Ministry of Environment. 1,123,316 ¥.
10. 2010 July – 2011 July. Investigation and modeling of pesticide fate and transport in paddy rice in Taiwan. Nisshin Seito Fellowship Foundation. 500,000¥

Memberships

1. Pesticide Science Society of Japan 1998 - Present
2. The Japanese Society of irrigation, Drainage and Reclamation Engineering 1998 - Present
3. The Japanese Society of Soil Physics, 2000 - Present
4. The Weed Science Society of Japan 2006 - Present

Research area and interests

Hirozumi Watanabe has received his Ph.D. in agricultural and biological engineering in 1999 from University of California, Davis. After working as a post doctoral fellow at National Institute for Agro-environmental Sciences, he joined Tokyo University of Agriculture and Technology since 2000. He is currently appointed to be an associate professor in the department of International, Environmental and Agricultural Sciences and teaches several courses in both undergraduate and graduate programs.

His research area focuses on monitoring and modeling of pesticide fate and transport in agricultural environments. The major objectives of the current research activities are development and assessment of the good agricultural practices for reducing the environmental exposure risks associated with pesticide use in agricultural production.

1. Monitoring of pesticide fate and transport

Recently, he has been mainly working for rice paddy environments for multiple scales from lysimeter and plot scales and to watershed scale. Pesticide fate and transport studies in lysimeter scale have been conducted with several sizes from micro-paddy lysimeters to large size permanent set lysimeters. Especially, micro-paddy lysimeter experiments have been proven to be useful in inexpensive and rapid determination of pesticide fate parameters, which can be used parallel in the modeling. Number of plot studies has been done last 10 years to investigate fate and transport of rice herbicides, fungicide, and insecticides. Also, the Best Management Practices (BMPs) or Good Agricultural Practices (GAPs) for reducing pesticide losses from paddy rice field including Water Holding Period and Excess Water Storage Depth has been evaluated and recommended. Watershed scale monitoring was conducted in about 100 ha paddy rice watershed during 2002-2005. The fate and transport characteristics of rice herbicides in paddy watershed have been revealed and also, some BMPs were recommended to reduce herbicide losses from rice paddy.

2. Modeling of pesticide fate and transport

Modeling of pesticide fate and transport has been major focus of his research career. He has developed a simulation model for pesticide fate and transport in vegetative filter strips (PRVFS) during his Ph. D. In Japan, he developed a simulation model for pesticide fate and transport in paddy field (PCPF-1) in 1998 and the model is validated and applied number of rice herbicides used under Japanese and Italian conditions. PCPF-1 has been modified and validated to watershed scale recently. Probabilistic exposure risk assessments using field data and PCPF model for evaluating GAPs in reduction of pesticides losses from rice paddy has been presented in international conferences and journal papers.

3. Current progress and Future aspects

Investigation of Good Agricultural Practices for controlling pesticide runoff from paddy field through the probabilistic assessment on pesticide exposure associated with local agricultural management and hydrologic condition is in progress.

For fate and transport studies in paddy field, a joint project with Japanese biologists for investigating the eco-toxicological effects of insecticides on dragonfly larvae in rice paddy environments has been also in progress.

For international cooperation through pesticide monitoring and modeling, the application of the monitoring and modeling procedures developed in the lab to other international sites in Asia, Europe and the US is of our interest. A plot scale monitoring and modeling study in tropical rice paddy in Taiwan has been in progress. A project for developing an experimental device and methodology for pesticide runoff from upland fields using a rainfall simulator in Thailand and pesticide fate and transport modeling in Sacramento River Basin has been started recently.

Research papers (peer reviewed journal, *corresponding author)

1. **Watanabe, H.***, Takagi, K.: A simulation model for pesticide concentrations in paddy water and surface soil. I. Model development, *Environmental Technology*, 21, 1379-1391 (2000)
2. **Watanabe, H.***, Takagi, K.: A simulation model for pesticide concentrations in paddy water and surface soil. II. Model validation and application, *Environmental Technology*, 21, 1393-1404 (2000)
3. **Watanabe H*** and Takagi, K. Prediction of pretilachlor concentrations in paddy water and paddy surface soil by PCPF-1 model and the model application for controlling pesticide losses from paddy fields. *Transactions of JSIDRE* 209:43-50 Japanese with English abstract. (2000).
4. **Watanabe, H.***, Grismer, M. E. : Diazinon transport through inter-row vegetative filter strips: Micro-ecosystem modeling, *Journal of Hydrology*, 247, 183-199 (2001)
5. **Watanabe, H.***, Grismer, M. E. : Numerical modeling of diazinon transport through inter-row vegetative filter strips, *Journal of Environmental Management*, 69, 157-168 (2003)
6. Vu, H. S., **Watanabe, H.***, Takagi, K.: Application of FAO-56 for evaluating evapotranspiration in simulation of pollutant runoff from paddy rice field in Japan, *Agricultural Water Management*, 76, 195-210 (2005).
7. **Watanabe, H.***, Takagi, K. and Vu, H. S., Simulation of mefenacet concentrations in paddy field by improved PCPF-1 model, *Pest Management Science, Society of Chemical Industry*, 62, 20-29, (2006).
8. Tournebize, J., **Watanabe, H.***, Takagi, K. and Nishimura, T., The development of a coupled model (PCPF-SWMS) to simulate water flow and pollutant transport in Japanese paddy fields, *Paddy and Water Environment*, Springer-Verlag, 4, 39-51, (2006).
9. Phong, K. T., Nguyen, H. M., Komany, S., Vu, H. S. and **Watanabe, H.***, Fate of simetryn and thiobencarb in Japanese paddy fields with different water management, *Bulletin of Environmental Contamination and Toxicology*, Springer, 77, 375-382, (2006).
10. Vu, H. S., Ishihara, S. and **Watanabe, H.***, Exposure risk assessment and evaluation of best management practices of pesticide runoff from paddy fields into rivers. Part I, Multi-scale paddy watershed monitoring, *Pest Management Science, Society of Chemical Industry*, 62,1193–1206, (2006).
11. Karpouzias, G. D., Cervelli, S., **Watanabe, H.**, Capri, E* and Ferrero, A., Pesticide exposure assessment in rice paddies in Europe, A comparative study of existing mathematical models, *Pest Management Science, Society of Chemical Industry*, 62, 624-636, (2006).
12. **Watanabe, H.***, Nguyen, H. M., Komany, S., Vu, H.S., Asami, Y., Thai, K. P. and Tournebize, J., Applicability of ELISA in pesticide monitoring to control runoff of bensulfuron-methyl and simetryn from paddy fields, *Journal of Pesticide Science, Pesticide Science Society of Japan*, 31(2), 123-129, (2006).
13. **Watanabe, H.***, Kakegawa, Y. and Vu, H. S., Evaluation of the management practice for controlling pesticide runoff from paddy fields using intermittent and spillover irrigation schemes, *Paddy and Water Environment*, Springer-Verlag, 4, 21-28, (2006).
14. **Watanabe, H.***, Watermeier, N. L., Steichen J. M., Barnes, P. and Thai, K. P., Impacts of tillage and application methods on atrazine and alachlor losses from upland fields,

- Weed Biology and Management, Weed Science Society of Japan, 7, 44–54, (2007).
15. **Watanabe, H.***, Nguyen, H. M., Komany, S., Vu, H. S., Thai, K. P., Tournebize, J. and Ishihara, S., Effect of water management practice on pesticide behavior in paddy water, *Agricultural Water Management*, Elsevier B.V., 88, 132-140, (2007).
 16. Inao, K.*, **Watanabe H.**, Karpouzias, D. and Capri, E., Simulation Models of Pesticide Fate and Transport in Paddy Environment for Ecological Risk Assessment and Management, *Japan Agricultural Research Quarterly*, JIRCAS, 42(1), 13-21, (2008).
 17. Thai, K. P., **Watanabe, H.***, Nishimura, T., Toyoda, K. and Motobayashi, T., Behavior of simetryn and thiobencarb in rice paddy lysimeters and the effect of the excess water storage depth in controlling herbicide runoff, *Weed Biology and Management*, Weed Science Society of Japan, 8, 243–249, (2008).
 18. Thai, K. P., **Watanabe, H.***, Thai, Q. H., Vu, H. S., Tanaka, T., Dang T. T. N. and Motobayashi T., Excess Water Storage Depth – A Water Management Practice to Control Simetryn and Thiobencarb Runoff from Paddy Fields, *Journal of Pesticide Science*, Pesticide Science Society of Japan, 33(2), 159-165, (2008).
 19. Thai, K. P., Dang T. T. N., Yamazaki, K., Takagi, K. and **Watanabe, H.***, Simulated Rainfall Removal of Tricyclazole Sprayed on Rice Foliage, *Bulletin of Environmental Contamination and Toxicology*, Springer., 80,432-442, (2008).
 20. Nhung,D. T. T., Phong, T. K., **Watanabe. H.***, Iwafune, T. and Thuyet, D. Q., Simulating the dissipation of two herbicides using micro paddy lysimeters, *Chemosphere*, Elsevier Ltd., 77 , 1393–1399, (2009).
 21. Phong, T. K., Nhung, D. T. T., Yamazaki, K., Takagi, K. and **Watanabe, H.***, Behavior of sprayed tricyclazole in rice paddy lysimeters, *Chemosphere*, Elsevier B.V., 74, 1085-1089, (2009).
 22. Phong T. K., Dang T.T. N., Motobayashi T., Dang Q. T. and **Watanabe H.***, Fate and Transport of Nursery-Box-Applied Tricyclazole and Imidacloprid in Paddy Fields, *Water Air Soil Pollut.*, Springer, 202, 3-12, (2009).
 23. Phong, T. K., Nhung, D. T. T., Motobayashi, T. and **Watanabe, H.***, Behavior of Simetryn and Thiobencarb in the Plough Zone of Rice Fields. *Bull Environ Contam Toxicol.*, Springer, 83, 794–798, (2009).
 24. Nhung, D. T. T., Phong, T. K*. and **Watanabe, H.**, Determination of Tricyclazole in Water Using Solid Phase Extraction and Liquid Chromatography, *Journal of Liquid Chromatography & Related Technologies*, Taylor & Francis, 32, 2712–2720, (2009).
 25. Sunaga, K., Yoshimura, N., Hou, H., Win, K. T., Tanaka, H., Yoshikawa, M., **Watanabe, H.**, Motobayashi, T., Kato, M., Nishimura, T., Toyota, K.* and Hosomi, M. Impacts of Heavy Application of Anaerobically Digested Slurry to Whole Crop Rice Cultivation in Paddy Environment on Water, Air and Soil Qualities. *Jpn. J. Soil Sci. Plant Nutr.*, 80, 596- 605, In Japanese with English abstract. (2009)
 26. Thuyet, D. Q., Yamazaki, K. Phong, T. K., **Watanabe, H.**, Nhung, D.T.T. and Takagi, K*., Liquid Chromatography Electrospray Ionization-Tandem Mass Spectrometry Determination of Imidacloprid for Paddy Water and Soil, *Journal of Analytical Chemistry*, Springer, 65(8), (2010).
 27. Thuyet, D. Q. Hien,T. Q., **Watanabe, H.***, Saito, H., Phong, T. K. and Nishimura, T., Micro paddy lysimeter for monitoring solute transport in paddy environment, *Paddy and Water Environment*, Springer-Verlag, Published on line 08 April, (2010).
 28. Phong, T. K., Hiramatsu, K. and **Watanabe, H.***, Simulating concentration of bensulfuron-methyl in drainage canal of a paddy block by a rice pesticide model,

Environmental Technology, Selper Ltd., (Accepted April 14, 2010).

29. Phong, T. K., Vu, S. H. Ishihara, S., Hiramatsu, K. and **Watanabe, H.***. Exposure risk assessment and evaluation of the best management practice for controlling pesticide runoff from paddy fields. Part 2: Model simulation for herbicide pretilachlor. Pest Management Science (accepted on July 2, 2010).
30. Thuyet, D. Q., **Watanabe, H.***, and Motobayashi, T. Effect of formulations and treatment methods of nursery boxes applied with insecticide on the behavior of imidacloprid in rice paddy fields. Journal of Pesticide Science, (Accepted on Aug. 6, 2010).

Books

1. Takagi K. **Watanabe H.** Prediction of pesticide transport in soil. Nouyakugaku jiten Ed. N Motoyama. Asakura shoten co. Ltd. pp. 418-457 in Japanese (2001):
2. **Watanabe H.**, Inao K., Vu S. H., Phong T. K., Ishihara S., Takagi K. and Tournebize J.: Chapter 8 Pesticide Exposure Assessment in Rice Paddy Areas: A Japanese Perspective. In. Pesticide Risk Assessment in Rice Paddies: Theory and Practice. Karpouzias, Dimitrios and Capri, Ettore (Eds). Elsevier Science Ltd. pp165-211.(2007).

Proceedings of conferences and workshops (International)

1. **Watanabe, H.**, Steichen, M. J., Barnes, P., Watermeier, L. N., Jasa, J. P., Shelton, P. D. and Dickey, C. E. , Water quality aspects of tillage, soil type and slope –Part2, Atrazine and alachlor losses, ASAE Paper No.92 – 2010, Proceedings of the International Summer Meeting of American Society of Agricultural Engineers, (1992).
2. Watermeier, L. N., Jasa, J. P., Shelton, P. D., Dickey, C. E., **Watanabe, H.** and Steichen, M. J. , Water quality aspects of tillage, soil type and slope –Part1, Runoff and soil erosion, ASAE Paper No.92 – 2009, Proceedings of the International Summer Meeting of American Society of Agricultural Engineers, (1992).
3. **Watanabe, H.**, Grismer, E. M., Henderson, D. J. and Wilson, W. B., Nonpoint source pollution control of diazinon in dormant sprayed orchard, Use of vegetative filter strips, A multi-system approach, Proceedings of the International Symposium on Lowland Technology, 359-368, (1998).
4. **Watanabe, H.** and Takagi, K., Simulation of pesticide concentrations in paddy field by PCPF-1 model--- In case of mefenacet and its control of runoff and leaching ---, Proceedings of the XIV Memorial CIGR, International Commission of Agricultural Engineering World Congress 2000, (2000).
5. **Watanabe, H.**, Kakegawa, Y., Motobayashi, T., Kato, M. and Suzuki, S., Pesticide fate and transport monitoring in paddy field, Proceedings of International Workshop on Monitoring and Modeling Non-point Source Pollution of Agricultural Lands, Nanjing, China, 68-72, (2002).
6. Vu, H. S., Ishihara, S., **Watanabe, H.**, Ueji, M. and Tanaka, H. , Monitoring pesticide runoff from rice paddy fields for developing a river water quality model, Proceedings of the 3rd International Symposium on Environmental Issues in Korea and Japan, 103-112, (2002).
7. **Watanabe, H.**, Kakegawa, Y., Motobayashi, T., Kato, M. and Suzuki, S., The best management practice for controlling pesticide runoff from paddy field, Proceedings of the 3rd International Symposium on Environmental Issues in Korea and Japan, 113-122, (2002).
8. Asami, Y., **Watanabe, H.**, Suzuki, S. and Kato M., Effect of irrigation water on paddy water quality, Proceedings of the 4th International Symposium on Environment Issue in

- Korea and Japan, 67-72, (2003).
9. 11. Nguyen, H. M., Komany, S., Vu, H. S. and **Watanabe, H.**, Pesticide fate and transport in paddy field under two different water management scenarios, Proceedings of the 4th International Symposium on Environment Issue in Korea and Japan, 73-80, (2003).
 10. Vu, H. S., **Watanabe, H.**, Ishihara, S., Ueji, M. and Tanaka, H., Fate and transport of rice pesticide in agricultural surface water. --- Model concept and testing for river water compartment ---, Proceedings of the 4th International Symposium on Environment Issue in Korea and Japan, 52-59, (2003).
 11. Tournebize, J., **Watanabe, H.**, Nishimura, T., Takagi, K., Kao, C. and Birgrand, F., Pesticide transport in small rural watershed in context of water-logged soil, An example of a scientific collaboration between Japanese university and a French research institute, Proceedings of the 4th International Symposium on Environment Issue in Korea and Japan, 60-66, (2003).
 12. Tournebize, J., **Watanabe, H.**, Takagi, K. and Nishimura, T., New coupled model of pesticide fate and transport in paddy field, Proceedings of the Conference, Challenges and Opportunities for Sustainable Rice-based Production Systems, Vercelli, Italy, 497-507, (2004).
 13. Vu, H. S., Ishihara, S., **Watanabe, H.**, Ueji, M. and Tanaka, H., Monitoring pesticide fate and transport in surface water in Japanese paddy field watershed, Proceedings of the Conference, Challenges and Opportunities for Sustainable Rice-based Production Systems, Vercelli, Italy, 509-521, (2004).
 14. Thai, K. P., Nguyen, H. M., Komany, S., Vu, H. S. and **Watanabe, H.**, Mefenacet fate and transport in paddy field with respect to drainage control, Proceedings of the 5th International Symposium on Environment Issue in Korea and Japan, 9-14, (2004).
 15. **Watanabe, H.**, Vu, H. S., Tournebize, J., Nguyen, H. M., Komany, S., Thai K. P., Thai, Q. H., Ishihara, S. and Takagi, K., Monitoring and modeling of pesticide fate and transport in paddy fields, Challenges for reducing environmental risk, Proceedings of the 2nd International Conference of Japan Korea Research Cooperation, Impact Assessment of Farm Chemicals Runoff from Paddy Field and Biodiversity Conservation, 69-82, (2005).
 16. Vu, H. S., **Watanabe, H.** and Takagi, K., Uncertainty analysis of the PCPF-1 model simulation using Monte Carlo technique, Case study of mefenacet and pretilachlor, Proceedings of the 6th International Symposium on Environment Issue in Korea and Japan, 70-80, (2005).
 17. Tanaka, T., Ritter, M. A., Vu, H. S. and **Watanabe, H.**, Application of PCPF-RIVWQ simulation for the pesticide concentration in the river, A case study for the model scenario of the Ministry of Environment, Proceedings of the 6th International Symposium on Environment Issue in Korea and Japan, 81-86, (2005).
 18. Thai, K. P., Nguyen, H. M., Komany, S., Vu, H. S. and **Watanabe, H.**, Behavior of thiobencarb in paddy water and surface soil, Proceedings of the 6th International Symposium on Environment Issue in Korea and Japan, 87-92, (2005).
 19. Genka, M., Motobayashi, T., Thai, K. P. and **Watanabe, H.**, Influence of seedling box-treated systemic insecticides on two nontarget aquatic insects in paddy fields, Proceedings of the 6th International Symposium on Environment Issue in Korea and Japan, 106-111, (2005).
 20. Thai, K. P., Dang, T. T. N., Thai, Q. H., Ishihara, S., Takagi, K., Motobayashi, T., Iwafune, T. and **Watanabe, H.**, Simulation of pesticide fate and transport in paddy environment using micro paddy lysimeter, The 7th International Symposium on Environment Issue in Korea and Japan, Yongin, Korea, 41-46, December (2006).
 21. Dang, T. T. N., Thai, K. P. and **Watanabe, H.**, A method for determination of tricyclazole and imidacloprid in water using high-performance liquid chromatography. The 7th International Symposium on Environment Issue in Korea and Japan, Yongin, Korea, 1-5, December (2006).

22. Sunaga, K., Yoshikawa, M., Okuda, M., Thai, K. P., Muto, Y., Yoshimura, N., Hou, H., **Watanabe, H.**, Tanaka H., Nishimura, T. and Toyota, K., Nitrogen removal and water quality improvement of anaerobically digested slurry using forage paddy rice. I. Nitrogen removal of anaerobically digested slurry. The 7th International Symposium on Environment Issue in Korea and Japan. Yongin, Korea, December 26, (2006).
23. Ok, J., Lee, K. and **Watanabe, H.**, Runoff characteristics of nutrients from greenhouse site and paddy area, Proceeding of the 8th International Symposium for Environmental Issues in Korea and Japan, Tokyo University of Agriculture and Technology, ISBN 4-9902765-2-3, 45-50, Dec. 18, (2007).
24. Dang, T. T. N., Yamazaki, K., Thai, K. P., **Watanabe, H.** and Takagi, K., Determination of tricyclazole in water using direct injection liquid chromatography/electrospray ionization-mass spectrometry, Proceeding of the 8th International Symposium for Environmental Issues in Korea and Japan, Tokyo University of Agriculture and Technology, ISBN 4-9902765-2-3, 51-56, Dec. 18, (2007).
25. Tanaka, T. Vu, H. S., Ritter, M. A., Kumar, S., Thai K. P. and **Watanabe, H.**, Application of PCPF-RIVWQ simulation for the pesticide transport in the paddy watershed, Proceeding of the 8th International Symposium for Environmental Issues in Korea and Japan Tokyo University of Agriculture and Technology, ISBN 4-9902765-2-3, 39-44, Dec. 18, (2007).
26. Dang, Q. T., Thai, Q. H., Thai, K. P., Saito, H. and **Watanabe, H.**, Constructing micro paddy lysimeter for simulation of pesticide fate and transport in paddy environment, Proceeding of the 8th International Symposium for Environmental Issues in Korea and Japan, Tokyo University of Agriculture and Technology, ISBN 4-9902765-2-3, 33-38, Dec. 18, (2007).
27. Inao, K., **Watanabe H.**, Karpouzias, D. and Capri, E., Simulation Models of Pesticide Fate and Transport in Paddy Environment for Ecological Risk Assessment and Management, Japan Agricultural Research Quarterly, JIRCAS, 42(1), 13-21, (2008).
28. **Watanabe, H.**, Tournebize J., Takagi, K. and Nishimura, T., Simulation of fate and transport of pretilachlor in a rice paddy by PCPF-SWMS model, Proceedings of the third HYDRUS Workshop June 28, Tokyo, Japan, (2008).
29. Boulangé J., Kumar, S. Kondo, K., OK, J., Thuyet, D. Q. and **Watanabe, H.**, Assessment of Water Management Practices on Herbicide losses from Rice Paddy in Japan using Monte Carlo Simulation. Proceeding of the 9th International Symposium for Environmental Issues in Korea and Japan. Center for Environmental Studies, Kyung Hee University, Global Campus, ISBN 89-88539-00-1-93530, 7-14, Dec. 30, (2008).
30. Thuyet, D. Q., Nhung, D. T. T., OK, J., Kumar, S., Phong, T. K., Yamazaki, K., Takagi, K. and **Watanabe, H.**, Simulating the fate and transport of granule insecticide using Micro Paddy Lysimeter, Proceeding of the 9th International Symposium for Environmental Issues in Korea and Japan, Center for Environmental Studies, Kyung Hee University, Global Campus, ISBN 89-88539-00-1-93530, 33-41, Dec. 30, (2008).
31. Thuyet, D. Q., Yamazaki, K., Phong, T. K., Nhung, D. T. T., **Watanabe, H.** and Takagi, K., Development and validation of a method for imidacloprid determination in paddy water and soil using Liquid Chromatography -Electrospray Ionization – Tandem Mass Spectrometry (LC/ESI-MS/MS), Proceeding of the 9th International Symposium for Environmental Issues in Korea and Japan, Center for Environmental Studies, Kyung Hee University, Global Campus, ISBN 89-88539-00-1-93530, 118-126, Dec. 30, (2008).
32. Phong, T. K. Yoshino, K., Hiramatsu, K., Harada, M., Kondo, K., Boulangé, J., **Watanabe, H.** and Inoue, T., Water Management, Key Issue in Preventing Pesticide Pollution from Paddy Fields in Japan, International Conference on Promising Practices for the Development of Sustainable Paddy Fields. Bogor, Indonesia, October 7-9, GI.9 1-9, (2009).
33. **Watanabe, H.**, Inao, K., Boulange, J. and Phong, T., K., Modeling of pesticide dynamics in rice paddy environments and its risk assessment, Proceedings of international

seminar on Pesticide and Persistent Organic Pollutants (POPs) Residues in the Environments and their Effects on Food Safety, Taiwan Agricultural Chemicals & Toxic Substances Research Institute, October 26-30, 2009 Taichung, Taiwan ROC, ISBN 978-986-02-0285-4, 9-(1-14), (2009).

34. Thuyet, D. Q., Ok, J., Doan, N. H., Sok, P., Boulangé, J., Kondo, K., Thuy, D. Q., Motobayashi, T. and **Watanabe, H.**, Effect of treatment methods of nursery boxes applied insecticide on the fate and transport of imidacloprid in rice paddy field, The 10th international symposium for environmental issues in Korea and Japan, Tokyo-Japan, December, 26 , 100-107, (2009).
35. Doan, N. H., Thuyet, D. Q., Ok, J. and **Watanabe, H.**, Development of a method for determination of butachlor and pyrazosulfuron-ethyl in water using HPLC, The 10th international symposium for environmental issues in Korea and Japan, Tokyo-Japan, December, 26 , 81-86, (2009).
36. Boulangé, J. and **Watanabe, H.**, Assessment of water management practices on bensulfuronmethyl and imazosulfuron losses from Rice Paddy in Japan using Monte Carlo Simulation, The 10th international symposium for environmental issues in Korea and Japan, Tokyo-Japan, December, 26 , 87-92, (2009).

Non-peer reviewed journal, Reports

1. Phong, T. K., Hiramatsu, K., Vu, S. H., Ishihara, S. and **Watanabe, H.**, Simulation of pesticide behavior in a paddy block by a pesticide fate and transport model, J. Fac. Agr., Kyushu Univ., 54 (2), 505-512, (2009) .
2. Phong, T. K., Nhung, D. T. T., Hiramatsu , K. and **Watanabe, H.**, Prediction of the fate of oxytetracycline and oxolinic acid in a fish pond using simulation model – A preliminary study, J. Fac. Agr., Kyushu Univ., 54 (2), 513-521, (2009).

Oral speeches and presentations in international conferences and workshops

1. **Watanabe, H.**, Steichen, M. J., Barnes, P., Watermeier, L. N., Jasa, J. P., Shelton, P. D., Dickey, C. E. : Water quality aspects of tillage, soil type and slope – Part2: Atrazine and alachlor losses, International Summer Meeting of American Society of Agricultural Engineers, North Carolina, USA, Jun. 21-24, (1992)
2. **Watanabe, H.**, Grismer, E. M., Henderson, D. J., Wilson, W. B. : Nonpoint source pollution control of diazinon in dormant sprayed orchard: Use of vegetative filter strips: A multi-system approach, The International Symposium on Lowland Technology, Saga, Japan, Nov. 4-6, (1998)
3. **Watanabe, H.**, Takagi, K. : Simulation of pesticide concentrations in paddy field by PCPF-1 model--- In case of mefenacet and its control of runoff and leaching ---, The XIV Memorial CIGR World Congress 2000, Tsukuba, Japan, Nov. 28 – Dec. 1, (2000)
4. **Watanabe, H.**, Kakegawa, Y., Motobayashi, T., Kato, M., Suzuki, S. : Pesticide fate and transport monitoring in paddy field, International Workshop on Monitoring and Modeling Non-point Source Pollution of Agricultural Lands, Nanjing, China, Jul. 7-11, (2002)
5. Vu, H. S., Ishihara, S., **Watanabe, H.**, Ueji, M., Tanaka, H.: Monitoring pesticide fate and transport in surface water in Japanese paddy field watershed, The Conference, Challenges and Opportunities for Sustainable Rice-based Production Systems, Torino, Italy, Sep. 13-15, (2004)
6. Tournebize, J., **Watanabe, H.**, Takagi, K., Nishimura, T. : New coupled model of pesticide fate and transport in paddy field, The Conference, Challenges and Opportunities for Sustainable Rice-based Production Systems, Torino, Italy, Sep. 13-15, (2004)

7. **Watanabe, H.**, Vu, H. S., Tournebize, J., Nguyen, H. M., Komany, S., Thai K. P., Thai, Q. H., Ishihara, S., Takagi, K. : Monitoring and modeling of pesticide fate and transport in paddy fields; Challenges for reducing environmental risk, The 2nd International Conference of Japan Korea Research Cooperation, Impact Assessment of Farm Chemicals Runoff from Paddy Field and Biodiversity Conservation, Tsukuba, Japan, Mar. 16, (2005)
8. **Watanabe, H.**: Pesticide risk assessment in rice paddy areas – a Japanese perspective, Training Course in Pesticide Risk Assessment in Rice Paddies. Universita Cattolica Del Sacro Cuore. Piacenza, Italy, Jun. 27-30, (2005) (Invited lecture at the workshop)
9. **Watanabe, H.**: The pesticide fate and transport in paddy rice fields in Japan. ---The application of monitoring and modeling for exposure risk assessments and good agricultural practice--- The 8th International Symposium for Environmental Issues in Korea and Japan, Tokyo University of Agriculture and Technology, Dec. 18, (2007).(Keynote speech)
10. **Watanabe H.**, Tournebize J., Takagi K., Nishimura T.: Simulation of fate and transport of pretilachlor in a rice paddy by PCPF-SWMS model. Proceedings of The third HYDRUS Workshop June 28, University of Tokyo, Tokyo, Japan. 23-32 (2008).
11. **Watanabe H.**. The pesticide fate and transport in paddy rice fields in Japan---The application of monitoring and modeling for exposure risk assessments and good agricultural practice---. Joint FAO/IAEA Programme, Consulting Meeting on“Assessing the impact of soil and land management practices on the fate of agrochemicals and their residues within agricultural ecosystems using nuclear and related techniques” IAEA Headquarters, Vienna Austria, 2008/12/10(Invited speech as research consultant)
12. **Watanabe, H.**, Inao, K., Boulange, J. and Phong, T., K., Modeling of pesticide dynamics in rice paddy environments and its risk assessment, Proceedings of international seminar on Pesticide and Persistent Organic Pollutants (POPs) Residues in the Environments and their Effects on Food Safety, Taiwan Agricultural Chemicals & Toxic Substances Research Institute, October 26-30, 2009 Taichung, Taiwan ROC, ISBN 978-986-02-0285-4, 9-(1-14), (2009). ISBN:978-986-02-0285-4 (Invited speech)
13. **Watanabe, H.**, Kondo, K., Boulange, J., Phong, T. K., Hiramatsu, K., Inao, K. Exposure assessments of rice pesticides associated with local weather and agricultural management in Japan. 12th IUPAC International Congress of Pesticide Chemistry 4th July 8th July 2010 Melbourne, Australia (2010) (Invited speech and abstract #236)

Abstracts and posters in international conferences

1. **Watanabe, H.**, K, Takagi. 1999. Development of a simulation model for the pesticide concentration in paddy water. 2nd Panpacific Conference on pesticide Science, Oct. 24-27, 1999. Honolulu. (Poster presentation with Abstract)
2. Takagi K., **H. Watanabe** and M. Ishizaka. 1999. Predicting the fate of selected herbicides in paddy field using newly developed simulation model. 2nd Panpacific Conference on pesticide Science, Oct. 24-27, 1999. Honolulu. (Abstract)
3. Takagi K., **H. Watanabe** and M. Ishizaka. 1999. Development and evaluation of a simulation model for pesticide concentration in paddy field - In case of sulfonylureas - 17th Asiam-Pasific Weed Science Society Conference. Nov. 22-27, 1999. (Abstract)
4. Takagi K., **H. Watanabe**. 2000. Applications of a Simulation Model for Controlling Pesticide Losses from Paddy Fields. IUPAC-TACTRI/COA International Workshop on Pesticides 2000, Taiwan October 3-6, 2000. (Poster presentation with Abstract)

5. **H. Watanabe** T. Onishi, T. Saito. 2002. Simulation of pesticide fate and transport in paddy fields via internet. The 10th IUPAC International Congress on the Chemistry of Crop Protection Basel .August 2002. Book of abstracts Vol. 2 p 136. (Poster presentation with Abstract)
6. **Hirozumi Watanabe**, Taku Tanaka , Vu Hong son, Amy M. Ritter. 2006. Application of PCPF-C and RIVWQ simulations for predicting rice-pesticide concentrations in the river. Book of abstracts (2) for poster presentation at the 11th IUPAC International Congress on the Chemistry of Crop Protection Kobe, Japan .August 2006. p263. (Poster presentation with Abstract)
7. T. K. Phong, **H. Watanabe**, V. H. Son, T. Q. Hien, T. Tanaka, Effect of the water storage capacity to pesticide runoff in Japanese paddy fields. Book of abstracts (2) for poster presentation at the 11th IUPAC International Congress on the Chemistry of Crop Protection Kobe, Japan .August 2006. p236. (Poster presentation with Abstract)
8. S.H. Vu, **H. Watanabe**, S. Ishihara. Probabilistic risk assessment through pesticide fate modeling for evaluating management practices to prevent pesticide runoff from paddy fields. Book of abstracts (2) for poster presentation at the 11th IUPAC International Congress on the Chemistry of Crop Protection Kobe, Japan .August 2006. p263. (Poster presentation with Abstract)
9. **Hirozumi Watanabe**, Dang Thi Tuyet Nhung, Thai Khanh Phong, Takashi Motobayashi, Takashi Iwafune, Kazuhiro Takagi, 2008. Simulation of fate and transport of herbicides using micro paddy lysimeters. Abstract of the 4th Pan pacific conference of pesticide science, June 1-5, 2008. P64. (Poster presentation with Abstract)
10. Thai, K. Phong, **Hirozumi Watanabe**, Dang, T. T. Nhung, Kazuhiro Takagi and Kenichi Yamazaki. 2008. Fate of Tricyclazole on Rice Foliage. Abstract of the 4th Pan pacific conference of pesticide science, June 1-5, 2008. P64. (Poster presentation with Abstract)
11. **Watanabe, H.**, Kondo, K., Boulange, J., Phong, T. K.,. Hiramatsu, K., Inao, K. Exposure assessments of rice pesticides associated with local weather and agricultural management in Japan. 12th IUPAC International Congress of Pesticide Chemistry 4th July 8th July 2010 Melbourne, Australia (2010) (Invited speech and abstract #236)
12. T. K. Phong, K. Hiramatsu, **H. Watanabe**. (2010) Uncertainties in modelling pesticide losses from rice fields to an adjacent drainage canal. 12th IUPAC International Congress of Pesticide Chemistry 4th July 8th July 2010 Melbourne, Australia (2010) (Poster presentation and abstract #446)
13. H. Jinguji, D. Q. THUYET, **H. Watanabe**, T. Ueda. Ecotoxicological assessment of nursery box applied insecticides using micro paddy lysimeters. 12th IUPAC International Congress of Pesticide Chemistry 4th July 8th July 2010 Melbourne, Australia (2010) (Poster presentation and abstract #559)