

## Information on Doctoral thesis of Fellows Tran Thi Tuyet Thu

1. Full name: Tran Thi Tuyet Thu

2. Sex: Female

3. Date of birth: 18/9/1978

4. Place of birth: Ninh Binh

5. Admission decision number: Decision 2385/SĐH, dated 29/6/2007 by the President of Vietnam National University, Hanoi

6. Changes in academic process: Decision 967/SĐH-TN, dated 29/9/2010 on modification of the thesis title and supervisor by the Rector of VNU University of Science.

7. Official thesis title: "*Study on the methods to improve ability of soil organic matter accumulation in tea-growing soils in Phu Ho, Phu Tho province*"

8. Major: Soil and Water Environment

9. Code: 62 85 02 05

10. Supervisors: Assoc. Prof. Dr. Nguyen Xuan Cu

11. Summary of the new findings of the thesis

- The results have evaluating and generating the properties of soils growing tea in Phu Ho, Phu Tho province.

- It has been delaminated the different effects of different methods of organic residue managements, i.e., mulching and incorporating of organic materials (*Gleichenia linearis*, *Arachis pintoj*, tea-prunned residues) and soil moisture to accumulation and fraction of organic matter in soils under green house experiments and under nature conditions of tea production in Phu Ho, Phu Tho.

- The results also prove that mulching soil with tea-prunned residuals in combination with microbial products can improve the contents of soil organic matter only during two first years of application.

- It has been found that incorporation soil with *Arachis pintoj* in the combination with sprinkler irrigation resulted in improvement of soil fertility due to increasing available N, P, K nutrients and cation exchange capacity, and increasing soil pH in addition.

- From these research, six reasonable methods of organic residue management are recommended to improve ability of accumulation and humic substances in soils growing tea in Phu Ho, Phu Tho province.

12. Paratical applicability, if any

Investigating the accumulation of soil organic matter in tea-growing soils under different management methods of organic materials; i.e., application of micro-organic fertilizers; mulching soil with *Arachis pintoil* or with *Gleichenia linearis*; incorporating soil with *Arachis pintoil* or with *Gleichenia linearis* / or with tea-pruned residues / or with microbial organic products /or with *Arachis pintoil* and sprinkle with water.

- Proposals of solutions for improvement of soil organic contents and humic substances in tea-growing soils in Phu Ho, Phu Tho.

#### 13. Further research directions, if any

- Research on effects of combination of microbial organic products with different levels and mulching on some main characteristics of soil and the relationship with quality and quantity of tea.

- Investigate deeply to find out the best management solutions for organic management to improve tea production in the Northern mountainous region of Vietnam.

#### 14. Thesis-related publications

[1] Tran Thi Tuyet Thu, Nguyen Xuan Cu, Nguyen Viet Hiep, Hoang Thi Bich Hop, Nguyen Van Tuyen (2012), "The effects of plant protection chemicals to soil microorganisms in soil growing tea at Phu Ho, Phu Tho", *Journal of Natural Sciences and Tecnology, Vietnam National University, Hanoi, Vol.28 (4S)*, p. 203 - 210.

[2] Tran Thi Tuyet Thu, Nguyen Xuan Cu, Le Thi Bich Thuy, Pham Manh Hung, Nguyen Viet Hiep (2013), "Research on influences of Zinc and Cadimium on micro-organism microfauna in the soils of tea plantations at Phu Tho province", *Journal of Agriculture Science and Rural Development; Vol. (7)*, p. 54 - 61.

[3] Tran Thi Tuyet Thu, Nguyen Xuan Cu, Nguyen Van Toan, Ha Thi Thanh Doan (2013), "The effects of pruned prepared tea mulching and added micro-organism products to properties of soil growing tea in Phu Ho, Phu Tho", *Journal of Natural Sciences and Tecnology, Vietnam National University, Hanoi; Vol. 29(3S)*, p. 182 - 188.

[4] Tran Thi Tuyet Thu, Nguyen Xuan Cu, Pham Manh Hung and Nguyen Thi Ngoc Binh (2013), "The effects of *Gleichenia linearis* mulching on properties of soil growing tea at Phu Ho, Phu Tho province", *Journal of Natural Sciences and Tecnology, Vietnam National University, Vol. 29 (3S)*, p. 189 - 195.

[5]. Tran Thi Tuyet Thu, Nguyen Van Toan (2014), "Chemical composition in several cover organic materials amended into tea planting soil in Phu Ho, Phu Tho province", *Journal of Agriculture Science and Technology and Rural Development, Vol(3 + 4)*, p. 104 - 109.