

Course Outline

Annual International Training Course

1. Course Title:

Training on fundamental quality and efficiency tests of disinfectants for livestock production

2. Duration:

16th – 27th June 2025

3. Background and Rational:

TICA: Thailand International Cooperation Agency

TICA is a department under the Ministry of Foreign Affairs of Thailand and a national focal point for international development cooperation with development partners and other developing countries around the world. TICA was established in 2004 to realize Thailand's aspiration to be a contributor of development cooperation. TICA's mission is to promote sustainable socio-economic development through sharing of knowledge and best practices. In response to the recent changes in the global landscape of development cooperation, especially through the concept of South-South and Triangular Cooperation, TICA continues to realign our focuses in order to deliver Thailand's commitment to be a relevant partner in global agendas including the 2030 Agenda for Sustainable Development.

Organization/Institution

Bureau of Quality Control of Livestock Products (BQCLP), Department of Livestock Development (DLD), Ministry of Agriculture and Cooperatives (MoAc), Thailand

4. Objectives:

The program is designed to: veterinarians, animal husbandmen, and scientists who entail laboratory practice in quality control of livestock products, animal health, or related fields with four objectives

1. To train the test method for determination of active ingredients (quality) in disinfectant for livestock production by titration method and high-performance liquid chromatography technique.
2. To train the test method for efficiency test of disinfectants by Use-Dilution method according to the Association of Official Analytical Chemists (AOAC)
3. To promote the role of laboratory practice in the control of the quality of disinfectants for livestock production
4. To learn the regulation and control of disinfectants for livestock production in Thailand

5. Course contents:

1. Introduction to disinfectant, the regulation and control of disinfectants for livestock production in Thailand, the role of laboratory practice in the control of the quality of disinfectants for livestock production and the fundamental method for determination of active ingredients in various groups.

2. Technique of analysis for the determination of active ingredients in disinfectants for livestock production.

- Training on manual titration technique: redox titration (iodometry) for determination of iodine complexes as available iodine.
- Training on potentiometric titration technique for determination of iodine complexes as available iodine.
- Training on determination: determination of glutaraldehyde and formaldehyde by UHPLC-DAD technique.

3. Introduction the efficacy testing of disinfectant products using the use-dilution method according to AOAC standards, techniques for preparing culture media used in testing, techniques for preparing microorganisms used in testing, techniques for preparing sample in testing.

- Training on the efficacy testing of disinfectant products using the use-dilution method with ATCC 10708 *Salmonella enterica*, ATCC 6538 *Staphylococcus aureus*, ATCC 15442 *Pseudomonas aeruginosa*

6. Participants criteria:

Applicants must fulfill the following requirements:

- Be nominated by their respective government
- Veterinarians, animal husbandmen or scientists who entail laboratory practice in quality control of livestock products, animal health or related fields with four objectives.
- Language: Proficient in English

7. Attendance and evaluation:

Participants who completed the training will receive a certificate based on:

- Real time class attendance (not less than 80%)
- Interactive class participation
- Presentation and report
- Evaluation

8. Venue:

Bureau of Quality Control of Livestock Products, 91 Moo 4, Tiwanon Rd., Bangkadi, Mueang district, Pathumthani 12000, THAILAND.

9. Expected results:

1. Understanding the test method for determination of active ingredients (quality) in disinfectants for livestock production
2. Understanding the test method for efficiency test of disinfectants by use-dilution method according to AOAC
3. Understanding the role of laboratory practice in the control of the quality of disinfectants for livestock production
4. Understanding the regulation and control of disinfectants for livestock production in Thailand

10. Organization/ Institution:

Bureau of Quality Control of Livestock Products (BQCLP), Department of Livestock Development (DLD), Ministry of Agriculture and Cooperatives (MoAc), Thailand.

11. Expenditure/ Funding:

Thailand International Cooperation Agency (TICA)

Government Complex, Building B (South Zone), 8th Floor,

Chaengwattana Rd., Laksi District, Bangkok 10210 THAILAND

Website: <http://tica-thaigov.mfa.go.th/en/index>

Email: aitc@mfa.go.th

Schedule for the Training Programme: (Tentative)

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Date/Period /Topic	Time (Thailand time)	Content	Speaker	Note
Day 1: 16 th June 2025				
	08.30-09.00	Registration		
	09.00-09.30	Opening Ceremony		
	09.30 -10.30	Introduction to disinfectants : Definition, importance of disinfectant in livestock production, classification of disinfectants, mode of action of disinfectants, factor affecting disinfectant	Dr.Chusak Ardsoongnearn	
	10.35-12.00	Regulation and control of disinfectants for livestock production in Thailand	Dr.Sudarat Chauchan	
	13.00-14.30	The role of laboratory practice in the control of the quality of disinfectants for livestock production	Dr.Chusak Ardsoongnearn	
	14.35-16.00	- The fundamental method for determination of active ingredients in various groups (Titration, Spectrophotometry, Chromatography, Mass spectrometry, Gravimetric analysis)	Dr.Jutamas Prapapanpong	

Date/Period /Topic	Time (Thailand time)	Content	Speaker	Note
Day 2: 17th June 2025				
	09.00-10.30	Manual titration technique of analysis : Application, advantage, limitation, procedure, preparation techniques, measuring the endpoint of titration	Ms. Jirasa Krongkrod	
	10.35-12.00	Type of titration : Acid/base titrations, redox titration, gas phase titration, complexometric titration, back titration	Ms. Jirasa Krongkrod	
	13.00-16.00	Training on: Manual titration technique redox titration (iodometry) for determination of iodine complexes as available iodine and conclusion and discussion	Ms. Jirasa Krongkrod & HSC Team	
Day 3: 18th June 2025				
	09.00 -10.30	Potentiometric titration technique of analysis: Quaternary ammonium compound (QACs)	Dr. Naruebeth Noenthong	
	10.35-12.00	Potentiometric titration technique of analysis: Iodine complex as available iodine and Hypochlorite as available chlorine	Dr. Naruebeth Noenthong	
	13.00-16.00	Training on : Potentiometric titration technique for determination iodine complexes as	HSC Team	

Date/Period /Topic	Time (Thailand time)	Content	Speaker	Note
		available Iodine and conclusion and discussion		
Day 4: 19th June 2025				
	09.00 -10.30	Chromatography technique of analysis : Determination of glutaraldehyde , formaldehyde and glyoxal by UHPLC-DAD Technique	Dr.Chusak Ardsoongnearn	
	10.35-12.00	Training on : Determination of glutaraldehyde and formaldehyde by UHPLC-DAD technique	HSC Team	
	13.00-16.00	Training on determination : Determination of glutaraldehyde and formaldehyde by UHPLC-DAD technique (cont.)	HSC Team	
Day 5: 20th June 2025				
	09.00 -10.30	Determination of glutaraldehyde and formaldehyde by UHPLC-DAD technique (cont.): interpretation and analysis of test results	Dr.Chusak Ardsoongnearn	
	10.35-12.00	Conclusion of the test method for determination of active ingredients (quality) in disinfectant for livestock production	Dr.Chusak Ardsoongnearn	
	13.00-16.00	Introduction of the efficacy testing of disinfectant products using the Use-	Dr.Suwunna Tienungoon	

Date/Period /Topic	Time (Thailand time)	Content	Speaker	Note
		dilution method according to AOAC standards		
Day 6: 21st June 2025 Day off				
Day 7: 22nd June 2025 Day off				
Day 8: 23rd June 2025				
	09.00 -12.00	Techniques for preparing the efficacy testing of disinfectant products using the use-dilution method	Dr. Suwunna Tienungoon	
	13.00 -16.00	Training on : The efficacy testing of disinfectant products using the use-dilution method	Dr. Suwunna Tienungoon & HSM team	
Day 9: 24th June 2025				
	09.00 -12.00	Techniques for preparing microbial characterization and preserving reference microorganisms	Dr. Suwunna Tienungoon	
	13.00-16.00	Training on :The efficacy testing of disinfectant products using the Use-dilution method	Dr. Suwunna Tienungoon & HSM team	
Day 10: 25th June 2025				
	09.00 -12.00	Interpretation and analysis of test results : enumeration of viable bacteria from carriers used in efficacy testing of disinfectants	Dr. Suwunna Tienungoon	

Date/Period /Topic	Time (Thailand time)	Content	Speaker	Note
	13.00-16.00	Training on : Interpretation and analysis of test results	Dr. Suwunna Tienungoon & HSM team	
Day 11: 26th June 2025				
	09.00 -12.00	Introduction laboratory safety and personal protective equipment usage for microbiology laboratory	Mr. Chalothron Srihanart	
	13.00-16.00	Training on : Interpretation and analysis of test results	Dr. Suwunna Tienungoon & HSM team	
Day 12: 27th June 2025				
	09.00 -12.00	Conclusion of the efficacy testing of disinfectant products using the use- dilution method	Dr. Suwunna Tienungoon	
	13.00-15.30	Visit the other laboratory in Bureau of quality control of livestock products		
	15.30-16.00	Closing Ceremony		

(Flexible coffee breaks are around 10:30-10:45 AM and 2:30-2:45 PM.

Lunch break: 12:00 to 1:00P PM.)