

MAMNUAL OF HANDS-ON TRAINING OF LFD AND STRAW SAMPLING METHODS

PURPOSE/ BACKGROUNDS

1. What is LFD or RICT?

Lateral flow devices (LFDs), also referred to as Rapid Immunochromatography Test (RICT), are a rabies antigen-detecting kit developed by Oita University. This test kit allows for a low-cost, faster, and easier rabies diagnosis that can be used in a field setting or in a rabies remote laboratory.

2. What is Straw sampling method?

Straw sampling method can be used in tandem with LFDs for a safer and rapid brain sample collection. This can be done by using only a hard plastic straw, tongue depressor, and a wooden applicator stick. This method does not require craniotomy of the heads which can be hazardous for the analyst especially if the animal is suspected to have rabies.

3. What is the importance of LFD and Straw sampling Method in animal rabies diagnosis?

The goal of using LFDs and straw sampling method is not to replace DFAT (the gold standard in rabies diagnosis), but rather to supplement it and produce results immediately for a faster response from authorities. Most of the time, it is critical to obtain timely results so that the animal and human health side can collaborate to conduct immediate case investigations, contact tracing, PEP of human victims, ring vaccination, and so on.

4. Purpose of this manual

This manual intends to provide guidance how to organize this hands-on training to staff of Regional Animal Disease Diagnostic Laboratory (RADDL). RADDL staff can play the main role in organizing this training to staff of LGUs who want to perform LFDs and straw sampling methods.

5. Who are the participants of the training?

You can train interested parties such as LGUs (MAO/MVO, CVO and PVO) especially those with established rabies laboratory. Those located

in remote areas can also be trained if they passed the site evaluation to be conducted by their respective RADDLs.

6. When and where will you hold your hands-on training?

Coordinate the exact date and time of your seminar and training with your participants. Make a schedule that is convenient for both parties. You will need a venue with a projector because a lecture portion must be completed prior to the actual hands-on training. Following that, you can conduct hands-on training in a room equipped with a sink, working faucet, and necropsy table.

DEFINITION OF TERMS

Craniotomy:

surgical removal of part of the bone from the skull to expose the brain

LFD:

lateral flow device; rapid and easy to use point-of-care test

DFAT:

Direct Fluorescent Antibody Test; the gold standard for routine veterinary and human laboratory diagnosis of rabies

PEP:

Post-exposure Prophylaxis; anti-rabies prophylaxis administered after an exposure (bite, scratch, lick, others)

LGU:

Local Government units; institutional units whose fiscal, legislative and executive authority extends over the smallest geographical areas distinguished for administrative and political purposes

MAO/MVO:

Municipal Agricultural Office/Municipal Veterinary Office; an agency of the Philippine government responsible for the promotion of the Agriculture & Fisheries development and growth/ Municipal Veterinary Office

CVO: City Veterinary Office

PVO: Provincial Veterinary Office

RADDL:

Regional Animal Disease Diagnostic Laboratory; a government laboratory that provides services in support to animal health and production, regulatory, research, and surveillance

PREPARATION BEFORE THE HANDS-ON TRAINING

1. Before the training

- Choose a date, time, and venue for the training
- Make a program
- Prepare handout manuals () and IEC materials
- Prepare attendance for the participants (including their contact details)
- Assign duties and responsibilities
- Food and refreshments
- Update the participants about the final decision regarding the program, date, time, and venue of the training

- Prepare the necessary materials for the training

2. Personal Protective Equipment

- Disposable surgical gown (___)
- Head cap (___)
- Nitrile/Latex gloves Small (___)
- Nitrile/Latex gloves Medium (___)
- Face mask (___)
- Face shield / goggles (___)
- Rubber boots (___)
- Waterproof apron (___)

3. Materials needed for the hands-on training

- Projector for the lecture part (___)
- Animal head (___) and whole carcass (___)
- LFD kits (Kits include Test device, sample masher, assay buffer, Disposable plastic dropper) (___)
- Surgical Blade #20 or above (___)
- Tongue depressor (___)
- Wooden applicator stick (___)
- Interfolded tissue (___)
- Plastic straw (___)
- Clean hemostats/rat-tooth/thumb forceps (___)
- Permanent marker (___)
- Garbage bag for non-hazardous wastes (___)
- Biohazard bag for hazardous wastes (___)

DURING THE DAY OF THE TRAINING

1. During the day of the training

Before the event, organize your team and remind them of their roles and responsibilities. Allow participants to sign the attendance sheet with complete details as they arrive. Begin the lecture portion with a brief explanation of the LFD and straw sampling method and procedure. Before proceeding with the hands-on portion, divide the participants into smaller groups to avoid overcrowding in the laboratory. Begin by decapitating the animal head to demonstrate the best cut for the most effective Straw sampling method. Continue with the Straw sampling method and LFD demonstration. After that, allow each participant to perform and apply what they have learned. Oversee and correct any mistakes in their execution.

2. Carcass and Waste disposal

At the end of the event, do not forget to assign personnel for the clean-up. Non-hazardous wastes can be disposed using an ordinary garbage bag. Hazardous wastes used during the hands-on training (such as

wooden applicator stick, tongue depressor, straw, and so on) should be disposed in a biohazard bag and then later decontaminated. Whole carcass and animal heads used during the training need to be disposed properly as well (see manual about Carcass Disposal).

3. Open forum with the participants

You can facilitate an open forum once the participants regrouped after the hands-on training. Inquire of the participants about their experiences and what they learned during the training. You can also ask a few questions about their feedback and recommendations so that you can learn from them what aspects of your training program need to be improved.

AFTER THE TRAINING

1. Certificates of Completion

With the accomplished attendance form from the day of the training, make your certificates of completion.

2. Follow-up after _ weeks/months

You can conduct follow-up after _ weeks/months via online meeting to see if the seminar/training has been effective for them. Ask how many samples they have processed and if they encountered any problems along the way.

REFERENCE

Mananggit MR, Manalo DL, Saito N, Kimitsuki K, Garcia AMG, Lacanilao PMT, et al.

(2021) Lateral flow devices for samples collected by straw sampling method for postmortem canine rabies diagnosis. *PLoS Negl Trop Dis* 15(12): e0009891. <https://doi.org/10.1371/journal.pntd.0009891>

Ruppercht CE, Fooks AR, Abela-Ridder B, editors. *Laboratory techniques in rabies*. 5th ed. Volume 1. Geneva: World Health Organization; 2018. <https://apps.who.int/iris/bitstream/handle/10665/310836/9789241515153-eng.pdf>

Training for Straw Sampling Method, LFD and RaDSS P R O G R A M (Template)

Date ()		
Time	Activity/ Topic	Participants/ Person Responsible
8:00	Arrival of Participants Registration	
8:30	Opening Remark	
08:45 – 09:15	House Rules Rationale of the Activity	
09:16 – 09:45	Rabies updates	RADDL
09:46 – 10:15	Rabies standard diagnosis (DFAT)	RADDL
10:16 – 10:45	Rabies case managements and Rabies data share system	RADDL
10:46- 12: 30	Hands-on training of rabies data share system	DA-BAI Philahis office
12:30 – 13:30	Lunch break	
13:30 – 14:00	Rabies LFD diagnosis and straw sampling method - Decapitation - Straw sampling method and LFDs (manual video showing)	RADDL
14:00 – 16:00	Hands-on training - PPE - Proper decapitation of animals for Straw Method - Straw sampling Method - Use LFD Kit	RADDL
16:00 ~ 16:30	Open forum and Feedback session	
16:30 ~ 17:00	Closing remark	