



## Personal biosecurity measures

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## Content of the presentation

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- Introduction
- Measures in case of suspect case
- Procedures for personnel biosecurity
- SOP
- Videos on PPB
- Practical exercise

## Veterinary professionals

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- Veterinary professionals!!!
- Biosecurity as a verb!!!
- Goal of PB
  - Do not bring infection on holding !!!
  - Do not take infection from holding !!!
  - Do not spread infection in holding !!!
- **Iatrogenic transmission** - induced inadvertently by a physician or surgeon or by medical treatment or diagnostic procedures
- Think how to reduce the risk!!!

## Principles of biosecurity

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- Physical segregation
- Cleaning- removing contamination
- Disinfection- killing any remaining virus

**Risk reduction at every step through the application of biosecurity principles**

- In case of LSD and BT
- In case of FMD, CSF, AI

## A short exercise on biosecurity

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- What does “apply the principles” actually mean and why?
- Which of these is the most infectious, for a cow with 1 day old lesions:
  - 1 liter of bovine feces
  - 1 liter of milk
  - A needle used to collect blood from a viraemic animal
  - A boot contaminated with 0.5 mL of saliva from a infected cow
  - Breath of one infected cow for one day

## Answer

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	Virus Conc /ml (max) (TCID50)	Number of (cell culture) infectious doses and number of ruminant ID (RID) by aerosol based on 10 TCID50 to infect
1 litre of bovine faeces	3.3	$1000 \times 10^{3.3} = 10^{6.3} = \sim 2$ million (=200,000 RID)
1 litre of milk	4.5	$10^3 \times 10^{4.5} = 10^{7.5} = 32$ million (=3.2 million RID)
A needle used to collect blood from a viraemic animal	5	$0.01 \times 100,000 = 10,000$ (=1,000 RID)
A boot contaminated with 0.5 mL of saliva from a infected cow	9	<b><math>0.5 \times 10^9 = 500,000,000</math></b> (=50 million RID)
Breath of one infected cow for one day	1-2 TCID50 per litre breath	5 logs (=100,000) (10,000 RID)

Scrub those boots...

### Segregation

- Only take with you what you need
- Take off watches, leave phones etc.
- Prepare vehicle

- Regularly clean and disinfect the car
- Clean and dirty part
- Do not bring any unnecessary object
- Appropriate packaging and transport of samples
- Appropriate packaging of waste VMP, disposable materials
- Bring necessary equipment
- Clean and disinfect the vehicle before you enter

## Necessary equipment

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- Plastic mat
- Buckets (3 ideally)
- Detergent (approved)
- Disinfectant (approved)
- Scrubbing brushes (2)
- Rubbish bags (including biohazard bags)
- Ziplock bags (for transporting phone or other equipment)
- Disinfectant wipes for face
- Boots
- Boot covers
- Disposable biosecurity suit
- Waterproof over suit if required
- Examination gloves
- Tape
- Scissors to cut tape
- Sampling and recording equipment

## Entering the farm

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- Plan the visit of the farm
- Park the car to avoid contamination
- Segregate the car with plastic
- Check the equipment
- Check the sampling kit
- Designate clean and dirty part
- Place equipment that can not be disinfected in zip lock plastic bags

## key principles of biosecurity - 2

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### Cleaning

Remove ALL dirt

Disinfectants do NOT work on dirt- they are inactivated.

## key principles of biosecurity - 3

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### Disinfection

Correct disinfectant, correct concentration,  
contact time

## Disinfection principles

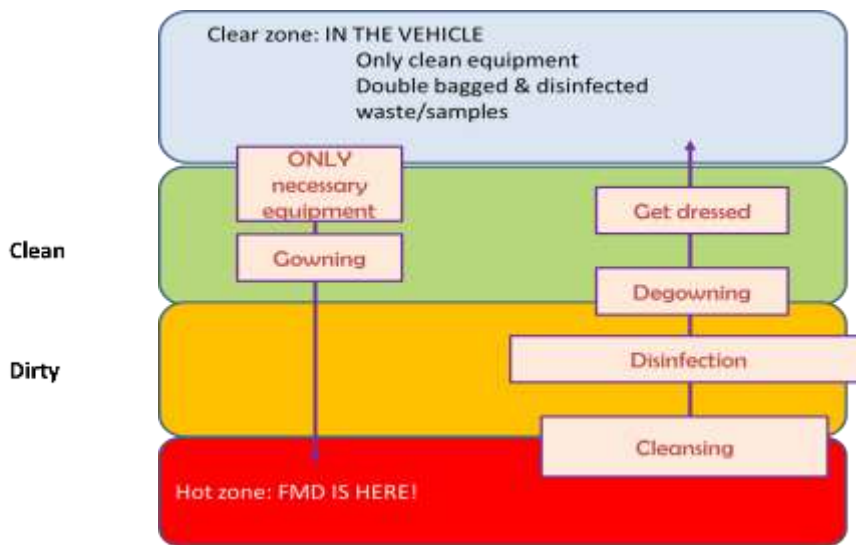
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- Clean before disinfection (dirt and organic matter can protect virus from disinfectant)
- Disinfect surfaces fully and completely (splashing disinfectant on something is not enough)
- Ensure adequate contact time (disinfectant need time to work)
- Use approved disinfectant



## PB in practice

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CLEAN

DIRTY



CLEAN

- What you need to get dressed
- Equipment to take with you
- What you need to process the disinfected equipment





**To wear:**

- Tyvek suit
- Gloves
- Tape
- Boots
- Boot covers



**To wear:**

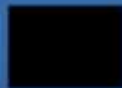
- Tyvek suit
- Gloves
- Tape
- Boots
- Boot covers

**To take:**

- Treatment
- Sampling
- Spare gloves
- Water to drink
- Camera
- GPS

**To process:**

Rubbish bags



Disinfectant: citric acid minimum 0.3%





## DIRTY

What you need to process contaminated clothing and equipment



Brushes



Cleaning: plain water (soap)



Disinfectant: citric acid minimum 0.3%





- Put shoe cover
- Changing gloves between different animals
- Examining unaffected animals first
- Replacing torn outer gloves
- Keeping hoods up

- Ensure no organic mater remain on the cloths of boots
- Ensure that ziplocked bags with equipment is disinfected
- Leave waste on the farm
- Leave appropriate time for disinfectant
- Double bag and seal disinfected equipment for safe transport
- Disposed of the plastic separators in the car

- Everything coming off must be washed and disinfected- it isn't enough to clean the outside of the box!
- Maintain box of clean items, box of disinfected items
- If NOT disinfected should be inside double bags and into disinfected items boxes (try and avoid this)
- You may want to rinse disinfectant off equipment

- Clean all dirt from boots and suit
- Remove outer gloves
- Disinfect boots and suit
- Remove suit and inner gloves, touching only inside of suit
- Hop onto clean side (!)
- Boots into second bucket of citric on clean side
- Person behind bags suit
- PRODUCTION LINE

## Prepare the place

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Lumpy skin disease and bluetongue training of trainers in FYR of Macedonia

Skopje, 13-14 September 2017

## Monitor and support activity

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**Biosecurity**

clean

cleaning

infected



Lumpy skin disease and bluetongue training of trainers in FYR of Macedonia

Skopje, 13-14 September 2017

## The seven habits of highly contagious people

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- Disinfects without cleaning first (**Half a job syndrome**)
- Does everything correctly – then takes out the cigarettes/lighter/phone, contaminates them and puts them back in the pocket (**Marlborough Man syndrome**)
- Cleans and disinfects boots perfectly – but neglects overalls/waterproofs (**Brown coat syndrome**)
- No clinical FMD on farm – so why bother? (**Ostrich syndrome**)
- Too busy, in too much of a hurry – doesn't have the time to clean & disinfect (**VIP syndrome**)
- Disinfection point too far away – why not just jump the fence? (**Lazy syndrome**)
- One bucket of disinfectant will last forever- it does not need topping up or replacing regularly (**Loaves and fishes syndrome**)

## There are two ways to fame

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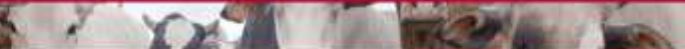
Suspect and report an CND

OR

Fail to spot CND and spread it to lots of other farms!

<https://www.youtube.com/watch?v=ljS-53r0FJk&feature=youtu.be>





**Questions**  
**Thanks for your attention**