Requirements of the Terrestrial Code for PPR surveillance

NAIROBI WORKSHOP

AU-IBAR HEADQUARTERS

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BEFORE I START … a Gentle Warning not to…..

Sampling

- Its usually not possible to sample each and every animal in the population. To determine its true status, we have to sample a representative number that will nonetheless give us representative results

- Calculation of the correct sample size will help you to determine how many animals you need to sample in order to get results that reflect the true PPR status of the target population.

Sampling

- Before you do so there are two terms that are important to know:

  - **The confidence interval – is the + or – margin of (sampling) error eg +/- 3 that 80% of the animals would test negative for PPR**

  - **The confidence level- tells you how sure you can be. It is expressed as a percentage and represents how often the true percentage of the population would lie within the confidence interval.**

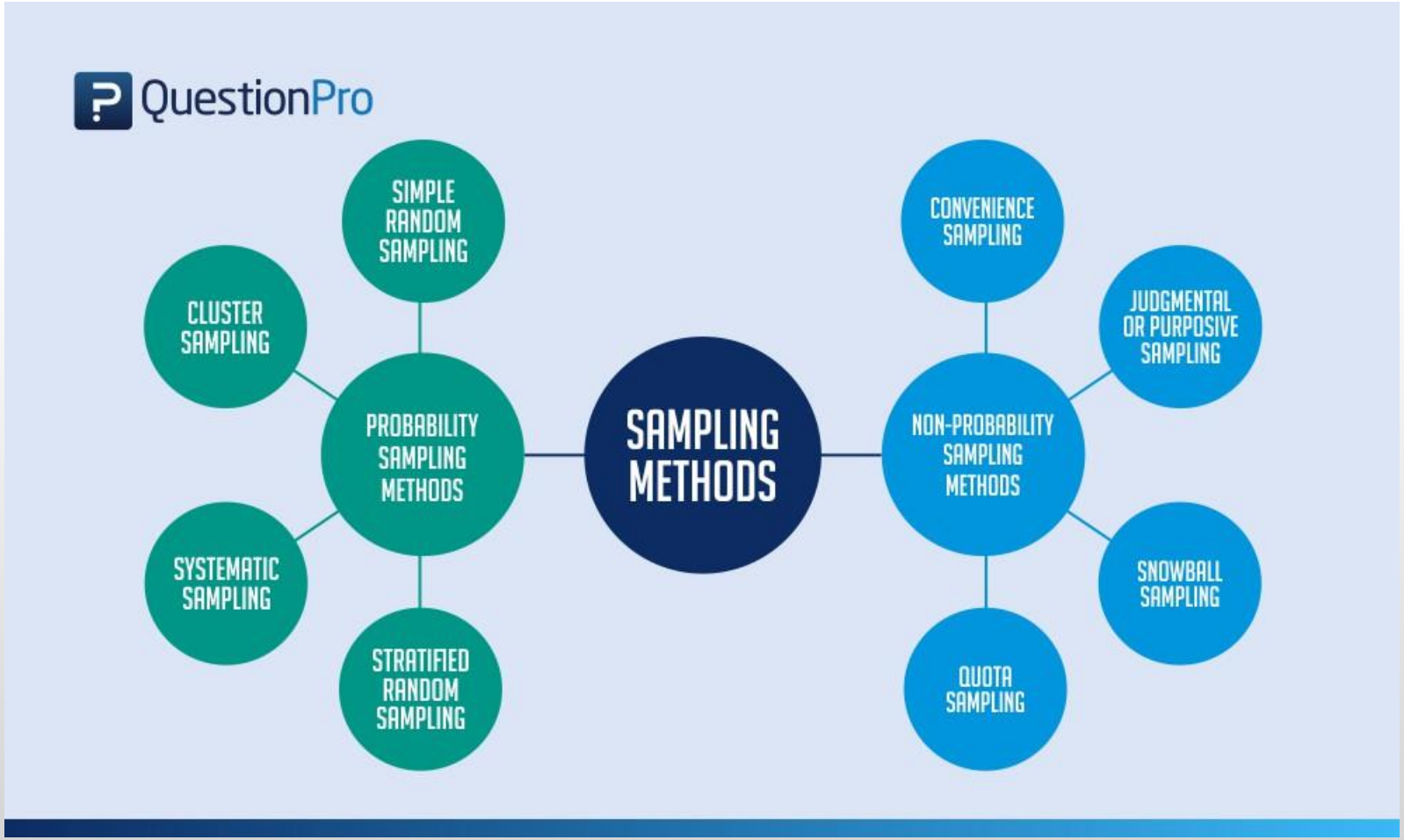
- For example, if you took samples from 500 goats in a village of which you expect 80% to be PPR negative you can then be sure that 95% of the times such samples are taken, the true percentage of negative animals in the village will lie between 77% - 83%.

Sampling

- **There are three factors that determine the size of the confidence interval for a given confidence level:**

  - **Sample size-** *The larger your sample size, the more sure you can be that their answers truly reflect the population. But relationship is not linear i.e., doubling the sample size does not halve the confidence interval*
  - **Percentage-** *Your accuracy also depends on the percentage of your sample that you expect to be positive (or negative). Most people usually use 95%. if the percentages are 51% and 49% the chances of error are much greater*
  - **Population size –** *in real life you may often not know the real population but this is irrelevant so long you have a correct sample size, hence the Survey System ignores the population size when it is "large" or unknown. Pop only likely to e a factor when dealing with small numbers*

Sampling methods



Surveillance strategies

- ***Clinical surveillance***
  - *Clinical surveillance aims to detect clinical signs of PPR by close physical examination. Clinical surveillance and epidemiological investigations are the cornerstone of all surveillance systems*
  - *Clinical surveillance may be able to provide a high level of confidence of detection of disease if sufficiently large numbers of clinically susceptible animals are examined.*
  - *It is essential that clinical cases detected be followed up by the collection of appropriate samples such as ocular and nasal swabs, blood or other tissues for virus isolation or virus detection by other means* Always follow up clinical cases with appropriate sample collection
  - *Sampling units within which suspicious animals are detected should be classified as infected until fully investigated .* Very important point! Positive until proven otherwise hence the absolute need for follow-up testing of samples collected.
  - *PPRV isolates may be sent to an OIE Reference Laboratory for further characterisation.* This is important to know what viruses are circulating

Surveillance strategies

Clinical surveillance should be supported by additional strategies such as virological and serological surveillance

- ***Virological surveillance***

Question? Why should we only conduct virological surveillance as a follow up to clinically suspected cases?

Answer: because PPR is an acute infection with no known carrier state hence only when there are cases can we have virus isolated

Surveillance strategies

- **Serological surveillance**

What is the aim of conducting serological surveillance?

To detect antibodies against PPRV which can mean:

- natural infection with PPRV
- vaccination against PPR
- Maternal antibodies derived from immune dam (only up to 6 months)
- Cross (heterophile) reactions and other non-specific reactions

Probable Structure of the Report

1. Objectives of the survey
2. Survey design
    a. Reference population
    b. Strategy for survey
3. Results
4. Conclusion (in relation to the objective and compliance with provisions of the *Terrestrial Code)*

Guidance document on presentations of applied survey design and results for applicant OIE Members

- **Objectives of the survey**
  - detecting infection
  - prevalence estimation
  - population immunity

- **Survey design**
  - **Reference population** (by species and area/location)
    - Total number of animals (population)
    - Definition and description your epidemiological unit
    - Number of and location of the epidemiological units
    - Indicate how the reference population relates to the target population

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- **Strategy for survey**
  i. Indicate if for example you used one stage or two stage sampling
  ii. Stratification and criteria for eligibility (according to age, size of epidemiological unit, etc.)
  iii. How did you calculate the sample size? Certain parameters will influence your sample size calculation eg
    a. Design prevalence: between and within epidemiological units (for sample size calculations of epidemiological units and animals)
    b. Level of confidence
    c. Level of precision (where relevant)
    d. Laboratory test sensitivity and specificity
    e. Herd sensitivity and specificity (where relevant)

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- **Strategy for survey cont.**

v. Method used to select epidemiological units and animals (random, convenience,targeted, etc.)

vi. Description of laboratory tests performed; cut-off values used to determine positive results and their sensitivity and specificity (and whether validated or assumed)

vii. Timing of sampling indicating time period/dates and other relevant information (e.g. in relation to vaccination or disease risk)

viii. Description of follow-up of serological findings

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Results

i. Deviation from original plan

ii. When, where and how many samples were actually taken vs planned

iii. Particularly for NSP surveys provide

- **Tabulated results, broken down to epidemiological units showing animals present, animals sampled and results (indicating preliminary and confirmatory testing) including the dates of the farm visits and overall results)**
- **A break-down of the results by age group including those that tested positive and those that tested negative.**
- **Maps showing locations of epidemiological units in the reference population, those sampled and those with positive results**
- **Details of control measures and epidemiological enquiries as part of the survey.**

Conclusion in relation to the objective and compliance with provisions of the Terrestrial Code

I trust that we do this well and should now have the confidence to say:

Thank you

Asante

Merci

Muito obligado