



Animal &
Plant Health
Agency

What is risk based sampling?

EPPO

Bern April 2023



Animal &
Plant Health
Agency



Department
for Environment
Food & Rural Affairs



Plant Health



- Detection survey

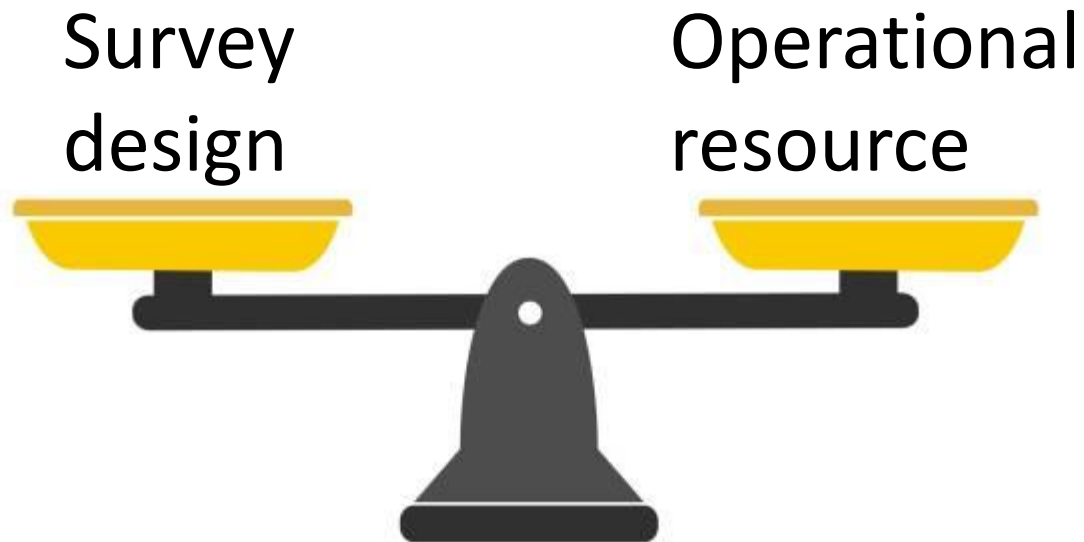


- Delimiting survey



- Monitoring survey







Risk-Based Sampling & Surveillance

“an inspection design that takes account of the probability of detection to determine the sample size for inspection. It consistently achieves a specific level of detection and confidence and is adjusted to correspond to the different levels of risk” (NAPPO)

“a survey design that allows differentiated sampling efforts based on risk factors and targets the survey effort in the corresponding proportion of the target population” (EFSA)



Survey design

- What?
- Where?
- How?
- When?

Orchards



Taxonomy	Quarantine Pests	Hosts	How to Inspect	When to Inspect
Virus	American plum line pattern virus	Prunus domestica, avium	Visual	April - August
Insect (moth)	Acleris nivisellana	Malus	Visual	April - September
Insect (borer)	Oemona hirta	Malus, Pyrus, Prunus domestica/avium	Visual	Year Round
Insect (borer)	Saperda candida	Malus, Pyrus, Prunus domestica/avium	Visual	Year Round
Insect (moth)	Acrobasis pyrivorella	Pyrus	Visual	June-September
Insect (weevil)	Anthonomus quadrigibbus	Malus, prunus avium	Visual	April-October
Fungus	Apiosporina morbosa	Prunus domestica, avium	Visual	Year Round
Fungus	Botryosphaeria kuwatsukai	Malus, Pyrus	Visual	April-September
Insect (moth)	Carposina sasakii	Malus	Visual	June-September
Virus	Cherry rasp leaf virus	Malus, prunus avium	Visual	April-September
Insect (moth)	Grapholita inopinata	Malus, Pyrus	Visual	June-October
Insect (moth)	Grapholita packardi	Malus, prunus domestica/avium	Visual	June-October
Insect (moth)	Grapholita prunivora	Malus, prunus domestica/avium	Visual	June-October
Fungus	Phyllosticta solitaria	Malus	Visual	April-October
Insect (fruit fly)	Rhacochlaena japonica	Prunus domestica, avium	Visual	June-September
Insect (fruit fly)	Rhagoletis fausta	Prunus avium	Visual	June-September
Insect (fruit fly)	Rhagoletis indifferens	Prunus avium	Visual	June-September
Insect (scale)	Lopholeucaspis japonica	Malus, Pyrus, Prunus avium	Visual	April-September
Insect (Fruit Fly)	Rhagoletis pomonella	Malus	?	June-September
Fungus	Alternaria mali Roberts	Malus	?	April-September
Virus	Apple dimple fruit viroid	Malus	?	June-October
Bacteria	Candidatus Phytoplasma 'mali'	Malus	?	June-October
Bacteria	Candidatus Phytoplasma 'pruni'	Prunus domestica, avium	?	April-October
Nematode	Xiphinema rivesi (non-EU populations)	Prunus domestica, avium, Malus, Pyrus		

Risk activity, location and areas

Risk activity/factor	Risk location	Risk area
Import, trade or production of propagated material, rootstock and scions of host species	Garden Centres and Nurseries	Areas surrounding risk locations where host species are grown such as community orchards, residential gardens and allotments

Target Population

Survey Area

England &
Wales



Epidemiological Unit

Agricultural &
Residential areas



Risk Area

Host trees
around risk
locations



Inspection Units

Malus,
Pyrus &
Prunus
trees





RiBESS+

What would you like to estimate?

Sample Size

Target confidence of freedom

0.01 0.95

0.01 0.11 0.21 0.31 0.41 0.51 0.61 0.71 0.81 0.91 0.99

Convenience sampling approach

No convenience sampling

Parameters

Risk factors

Enter as data frame

<none>

Number of Risk factors



Submit



RiBESS+

What would you like to estimate?

Sample Size

Target confidence of freedom

0.01

0.95

0.01 0.11 0.21 0.31 0.41 0.51 0.61 0.71 0.81 0.91 0.99

Convenience sampling
approach

No convenience
sampling

Parameters

Risk factors

Population size

fixed

Value

1000

Test sensitivity

fixed

Value

0.6

Design prevalence

fixed

Value

0.01

Submit