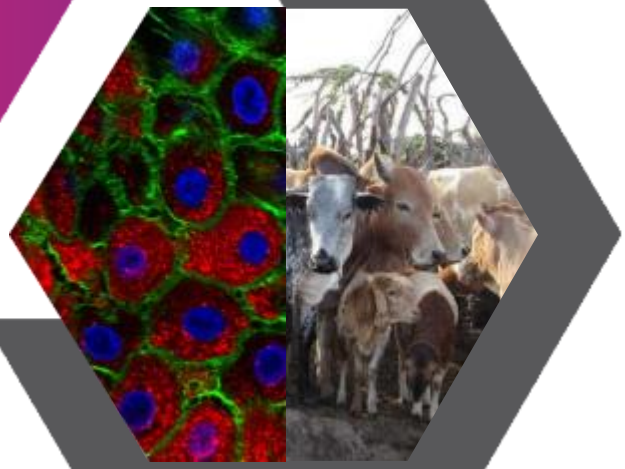

WRLFMD PT Scheme
& the Participation of SEA Countries

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Department for Environment Food & Rural Affairs

eufmd

World Organisation for Animal Health
Founded as OIE
FMD Reference Laboratory

Biotechnology and Biological Sciences Research Council

Pirbright receives strategic funding from BBSRC UKRI

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Why have PTs?

- Evaluate equivalence of testing across different labs
- Provide data to support accreditation to 17025
- Provide insights into test performance
- Highlight frequently occurring issues with specific tests

Who Participates?

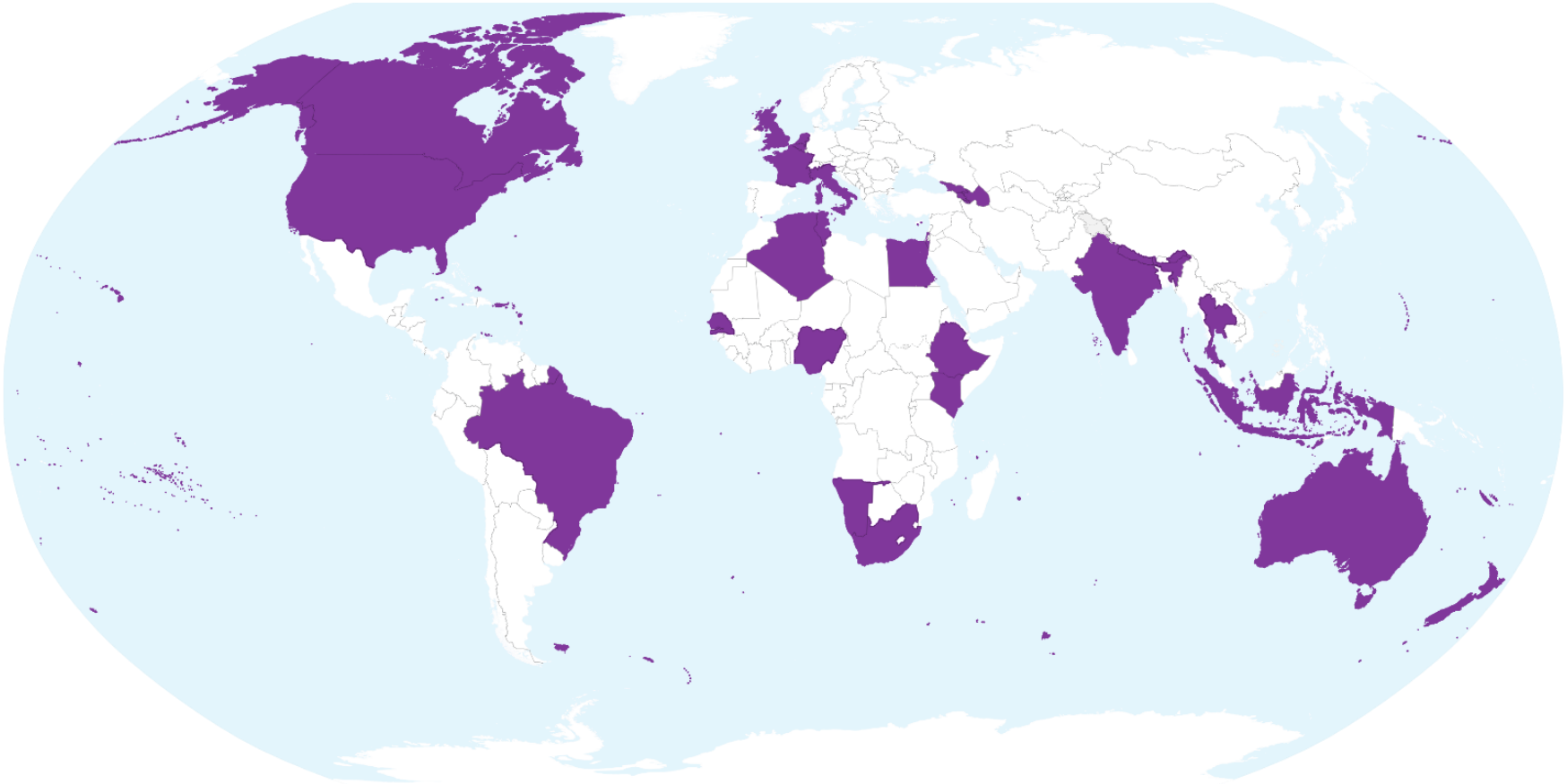
- Invitations through WRLFMD contract:
  - WOAH Reference Laboratories
  - Regional Support Laboratories in pool 4 (Eastern Africa) & pool 5 (West and Central Africa)
  - EuFMD member nationals which are not in the EU
  - European neighbourhood states

  *** results are reported back to EuFMD

- Others
  - Self-funded laboratories
  - Vaccine companies
  - ELISA kit producers

2022 Participants (phase XXXIV)

28 countries, 33 laboratories participated



Organisation of scheme

- Description and organisation of scheme is distributed to the PTS Advisory Committee
- Panels are prepared
  - Virology: Panel 1 – infectious and non-infectious
  - Serology: Panel 2 – non-infectious
- 10x testing is carried out on all panels:
  - Panel 1
    - Virus Isolation (infectious panel only)
    - Ag ELISA
    - RT-PCR
  - Panel 2
    - NSP ELISA
    - SP ELISA
    - VNT

Organisation of scheme

- Invitations sent
- Organisation of import/export permit & any additional paperwork needed (examples health certificate)
- Booking of dangerous goods courier
- Shipment of samples

*** this is increasingly taking more time and funds

- Receiving and collating results
- Individual feedback sent back to each laboratory
  - Opportunity for laboratories to comment and ask for additional support
- Anonymous report sent out to all participants
  - Summary of results sent to EuFMD for those laboratories that received funding

Description – Panel 1 example

Case 1

An official animal health officer in your country is called to inspect a herd of dairy cattle. Most of the herd is salivating due to vesicles within the mouth as well as being lame on one or more feet. After inspection, vesicular fluid from lesions on the tongue from three animals have been collected and have been sent to your laboratory for testing.

Case 2:

An official animal health officer is inspecting a group of beef cattle that have been imported and are currently being held at a quarantine station. It is noticed that some animals are lame and upon further inspection vesicles are found; vesicular fluid from three vesicles have been sent to your laboratory.

Description – Panel 1 example

Objectives:

- Test these samples using relevant FMD virus-detection assays and report results. If FMDV positive samples are detected, please define serotype, and further characterise any FMD viruses that are present.

- Please report results for individual samples and interpret the FMDV status (either FMDV positive or FMDV negative) for all the sampled animals and cases outlined in the scenario.

Tests are not prescribed, and laboratories should use the assays available to them in their laboratory. Kits and reagents are not supplied.

Description – Panel 2 example

- In response to the outbreak described in Case 1a, vaccination has been carried out around the area of the farm using a monovalent vaccine that is the same serotype as the virus causing the outbreaks.

- For the purpose of this PTS exercise, four serum samples were collected 21 days post vaccination with a single dose of the vaccine, from 6–12 month old cattle that are not supposed to have been infected with FMD (i.e., FMD naïve). It is unclear whether all the animals have been vaccinated.

Description – Panel 2 example

Objectives:

- Please use any relevant serological tests to assess whether there is any evidence of infection with FMDV in these animals.

- For the animals with FMDV-specific antibodies that have not previously been infected please indicate whether the immune responses are adequate (protective) and whether the animals would benefit from a booster vaccine.

- As part of your assessment, please fill in your overall interpretation of each sample (vaccinated and/or infected and which serotype used in the monovalent vaccine). Also please comment on whether an adequate immune response was seen in the vaccinated animals.

Tests are not prescribed, and laboratories should use the assays available to them in their laboratory. Kits and reagents are not supplied.

Scored against two criteria:

[1] **Laboratory capability** according to the range of tests that are performed for samples provided in the PT panels

Capability Level	Relevant for FMD status	Minimum test requirements	Expected lab capability	Minimum test requirements	Expected lab capability
0	PCP 0	n/a	n/a	NSP ELISA	Define infection history (FMDV+/-)
1	PCP 1	either AgELISA or RT-PCR	FMD virus present +/- serotype	NSP ELISA	Define infection history (FMDV+/-)
2	PCP 2	either AgELISA or RT-PCR	FMD virus present FMDV serotype	NSP ELISA SP ELISA	Define infectious status vaccination status serotype +/- PVM
3	PCP 3	AgELISA rRT-PCR +/- sequencing +/- VI	FMD virus present FMDV serotype topotype, lineage	NSP ELISA SP ELISA +/- VNT	Define infectious status vaccination status serotype +/- PVM

Scored against two criteria:

[1] **Laboratory capability** according to the range of tests that are performed for samples provided in the PT panels

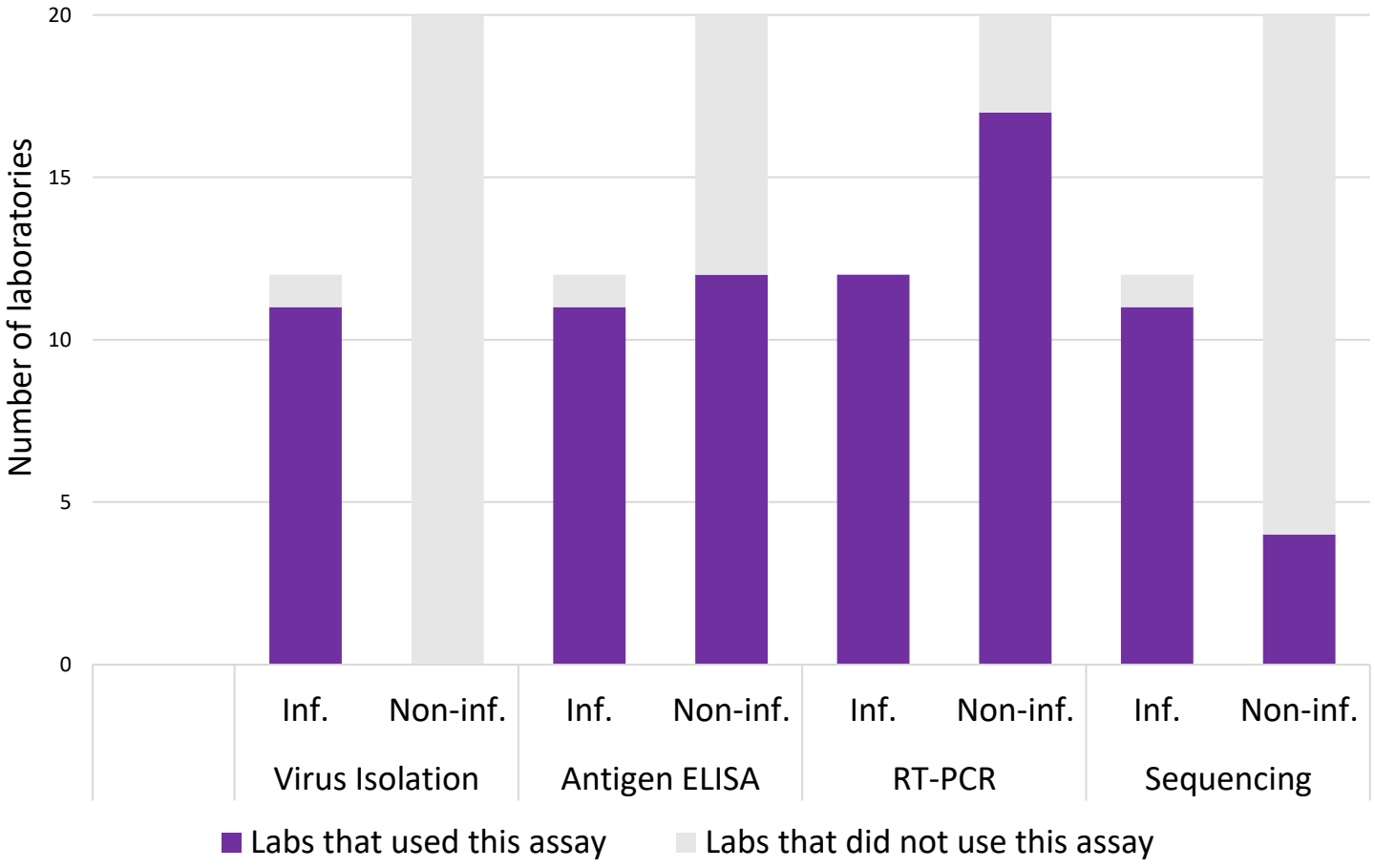
Capability Level	Relevant for FMD status	Minimum test requirements	Expected lab capability	Minimum test requirements	Expected lab capability
4	PCP 4	AgELISA rRT-PCR sequencing +/- VI*	FMD virus present FMDV serotype topotype, lineage	NSP ELISA SP ELISA VNT	Define infectious status vaccination status serotype PVM
5	WOAH/FAO Reference Laboratories (PCP 5)	Enhanced genome sequencing	FMD virus present FMDV serotype topotype, lineage, relationship between positive samples	NSP ELISA SP ELISA VNT	Define infectious status vaccination status serotype PVM identify cross-reactivity

Scored against two criteria:

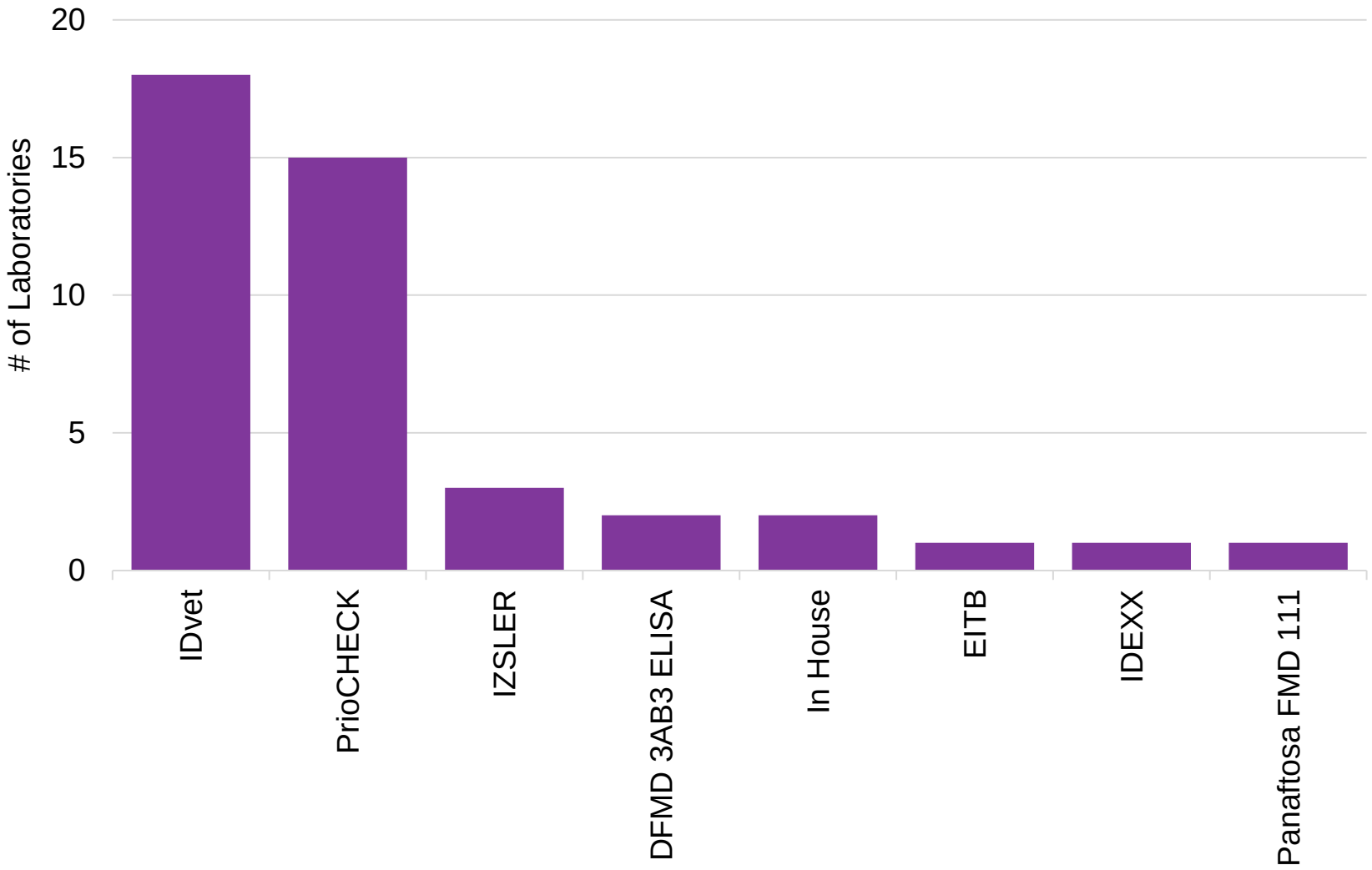
- **Laboratory performance** reflective of the quality of the test results that are provided, according to criteria defined below:

  - Category 1 - laboratories with critical issues that impact upon the correct identification of FMD virus (virology tests) or FMDV antibodies (serological tests) in samples where immediate action is required
  - Category 2 - laboratories with serious issues with the performance of individual tests that need to be addressed
  - Category 3 - laboratories that should consider observations from the PTS that may help to improve the local performance of individual tests
  - Category 4 - laboratories where test performance and interpretation are fit for purpose and where no further action is required

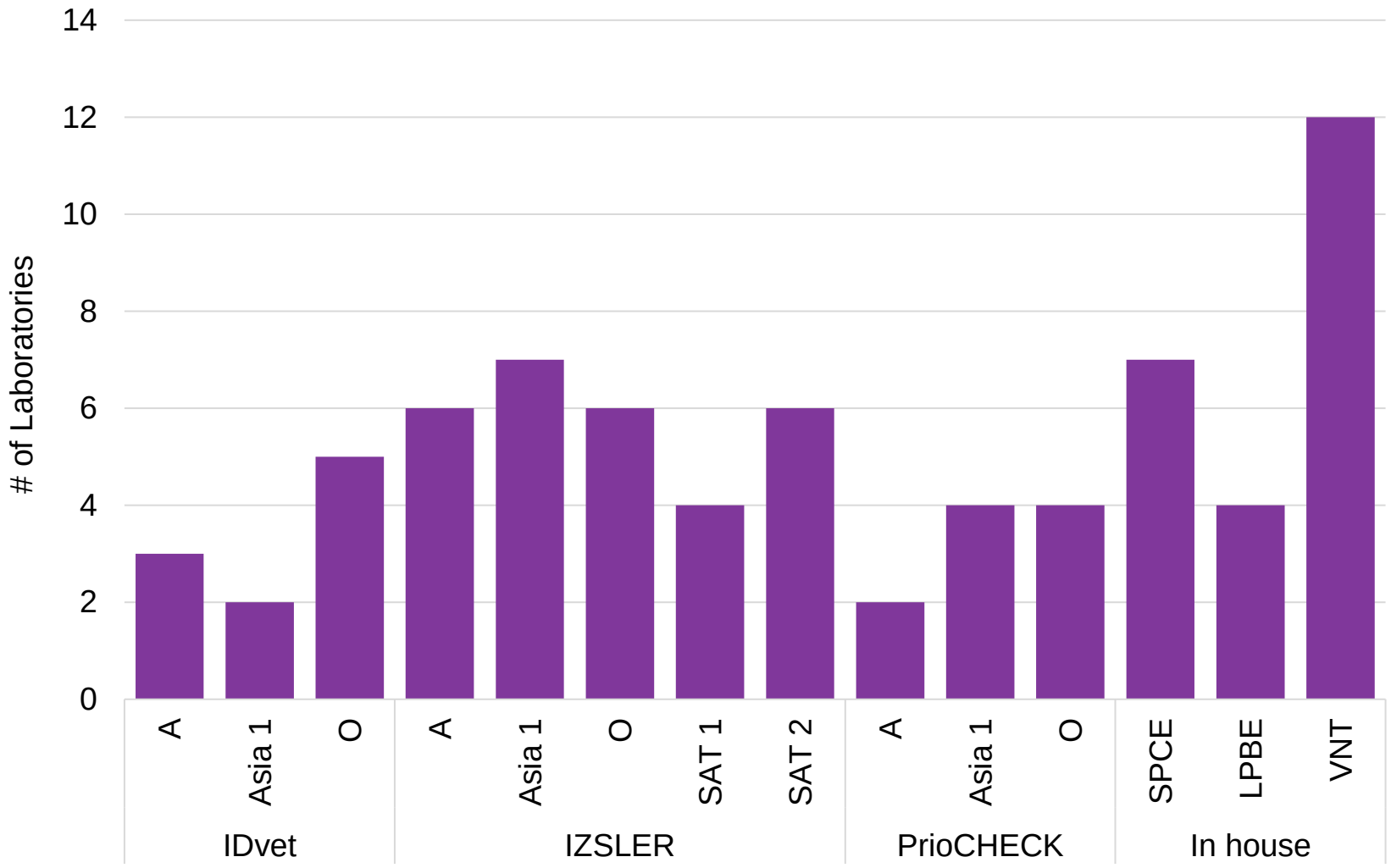
Results – Panel 1



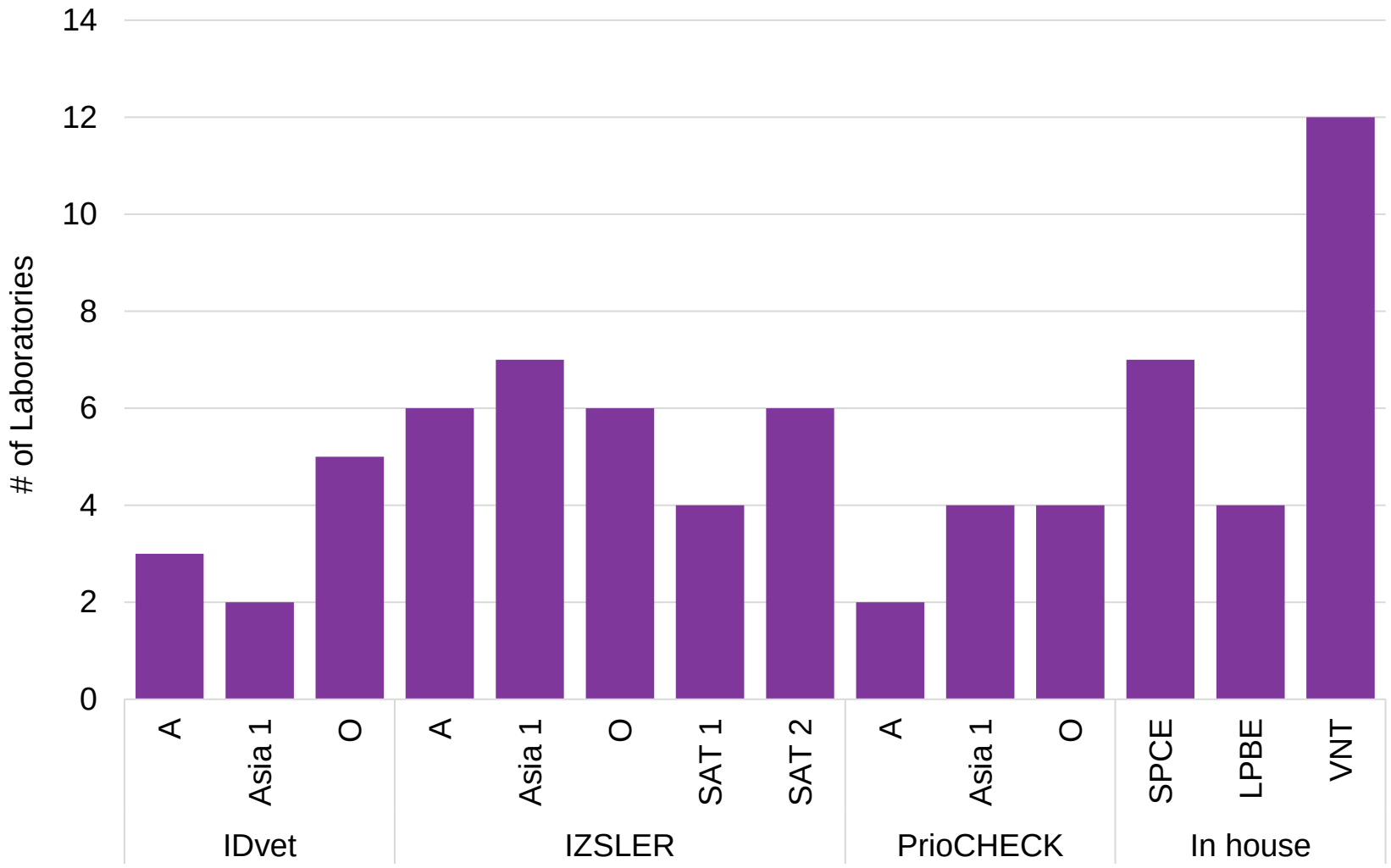
Results – Panel 2 NSP ELISA



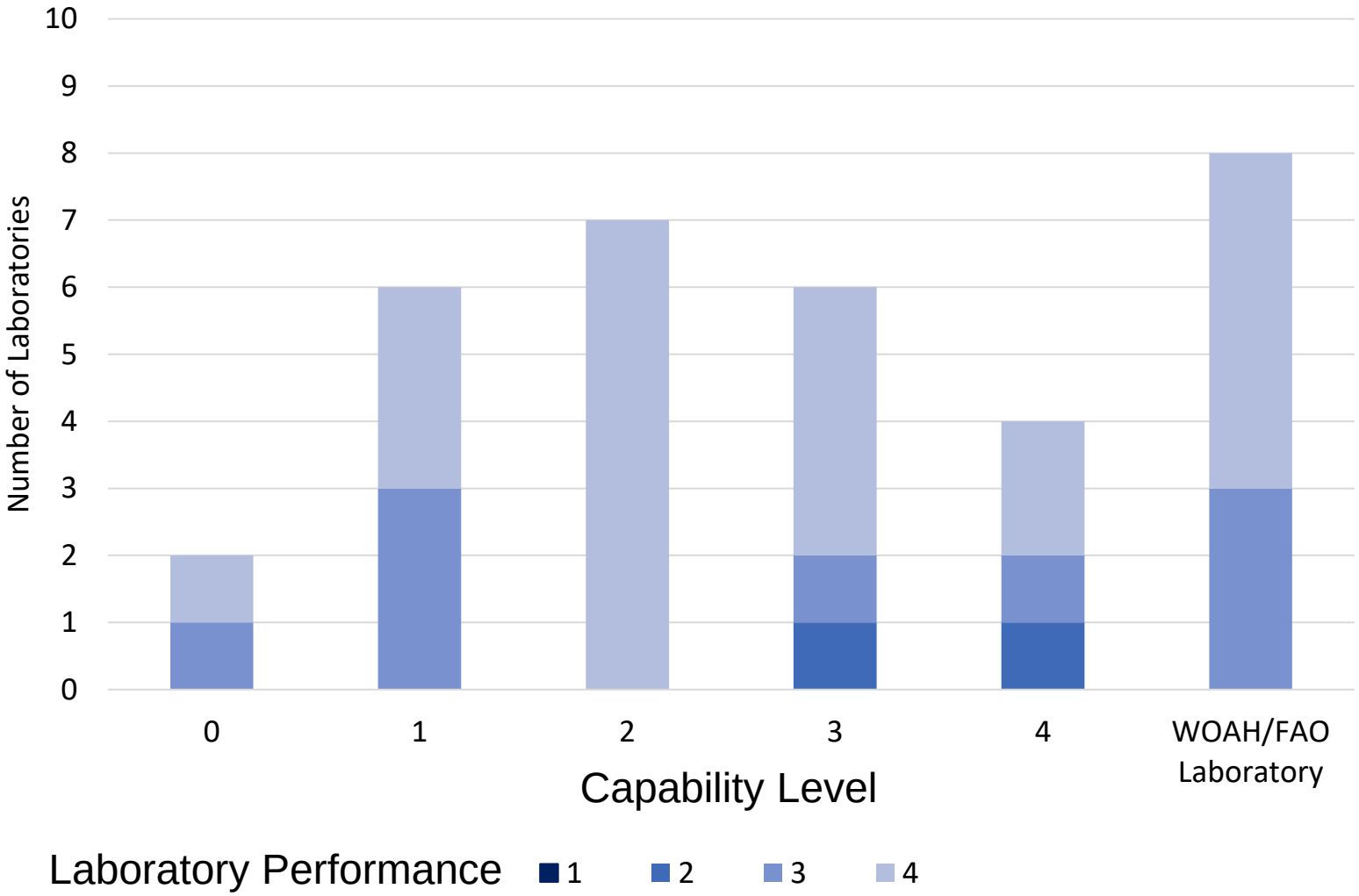
Results – Panel 2 ELISA & VNT



Results – Panel 2 ELISA & VNT



Capability and Performance



Further information

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(head, FMDV serology unit)

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