

Addressing the current status of biosecurity legislation in the European farm animal sector

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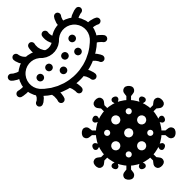
BETTER

COST Action CA20103: **B**iosecurity
Enhanced **T**hrough **T**raining
Evaluation and **R**aising Awareness

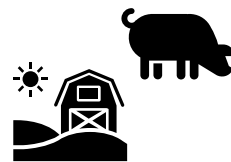


Objectives BETTER

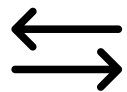
Understand how biosecurity measures are applied in livestock production systems across Europe



Infectious diseases



Heterogeneous livestock production in Europe



Different transmission routes



Biosecurity internal & external



Enforcement by legislation?

Biosecurity Enhanced Through Training Evaluation and Raising Awareness

BETTER in Numbers

4 Working groups (WGs)

WG1 question:
How is biosecurity applied in Europe
and neighbouring countries?

- 47 Countries participating
- 37 Full COST Members
- 02 Near Neighbor Countries: Jordan, Tunisia
- 07 International Partner Countries: Australia, Argentina, Burkina Faso, Canada, Cameroon, India and New Zealand
- 01 COST Partner Member: Israel
- 368 Members participating in the Working Groups
- 55 Management Committee members
- 21 16 Short Term Scientific Mission (STSM) and 5 Virtual mobility grants conducted.
- 12 2 Training schools and 8 webinars conducted.
- 02 Papers published.

73% of Action time
completed in July 2024

Start date - 21/10/2021

End date - 20/10/2025





Study aim

Identify which biosecurity measures were addressed in the national legislation of European countries for the three main intensive animal production categories



Biosecurity other than regulation (i.e., industry)

- Compulsory by other than law

Biosecurity compliance

- Percentage (%) of implementation according to national literature or existing databases



Materials & methods

Development of a questionnaire per species



	Biosecurity categories	Number of measures in the category
External biosecurity	The farm location and environment	2
	The access and control of visitors	8
	Workers and foreign labor	3
	Purchasing policy – introducing new animals	6
	Purchasing policy – introducing animal products	1
	Introducing equipment	1
	Control of transport vehicles	5
	Manure removal	1
	Control of feed and water	2
	Pest control	2
	Cadaver management	1
Internal biosecurity	Cleaning and disinfection	9
	Handling sick animals	2
	Disease management	8
	Total number of measures	51

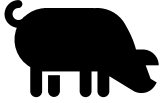
Biosecurity measures

- 1. Mandatory by law**
=> yes / yes, to some farms / no
- 2. Mandatory by industry**
=> yes / no



Participatory approach

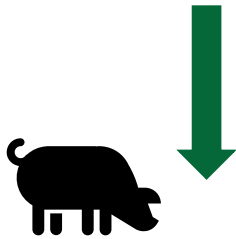




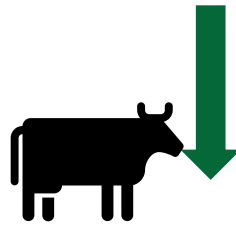
Questionnaire send to representatives of 38 countries



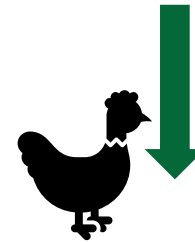
Nr of biosecurity measures differed per animal species



51



32



56





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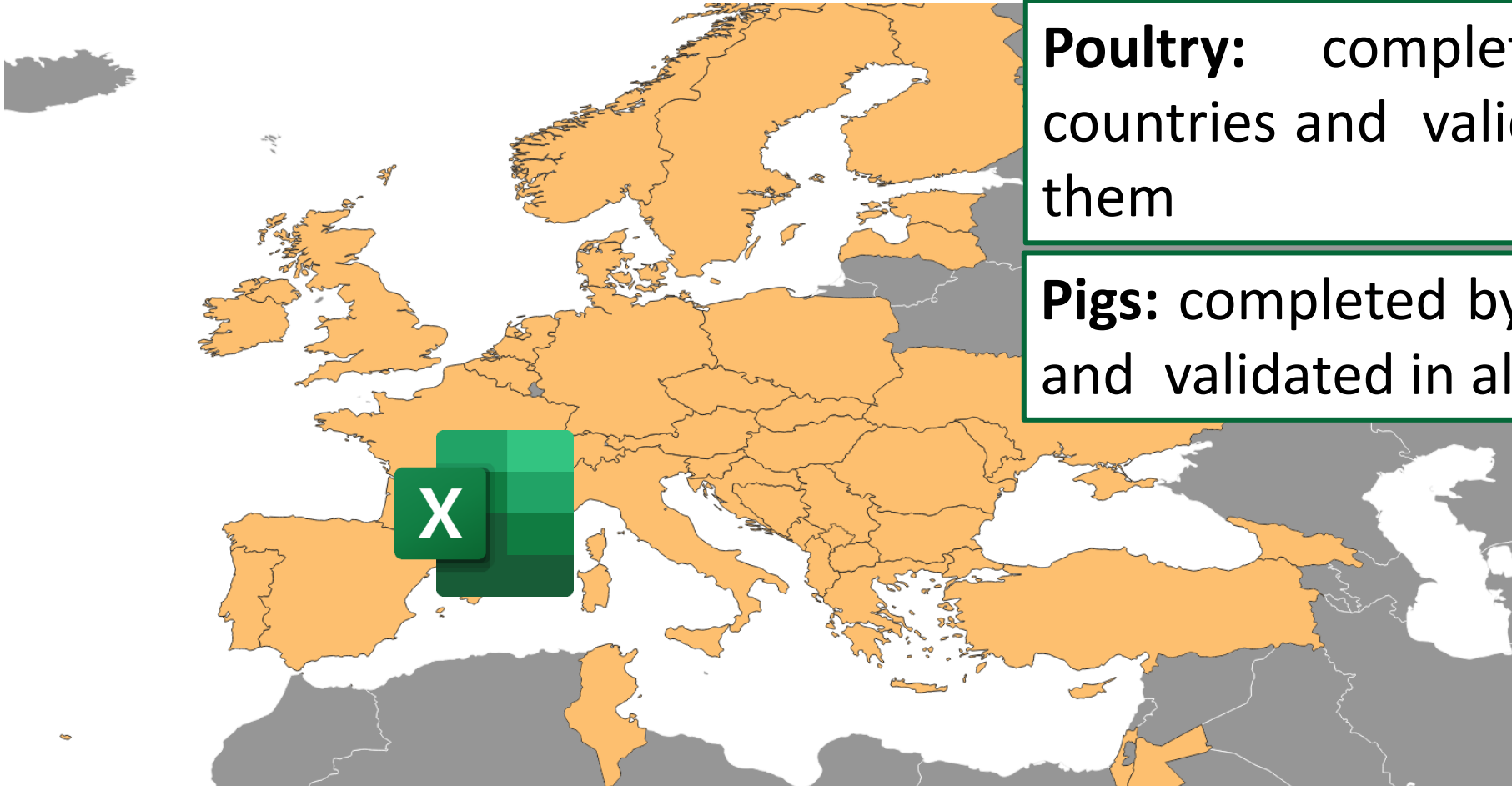
Data collection

Country focal point coordinators: in charge to collect data in each country (data collected during the first semester of 2023)

Cattle: completed by 23 countries and validated in all of them

Poultry: completed by 24 countries and validated in 22 of them

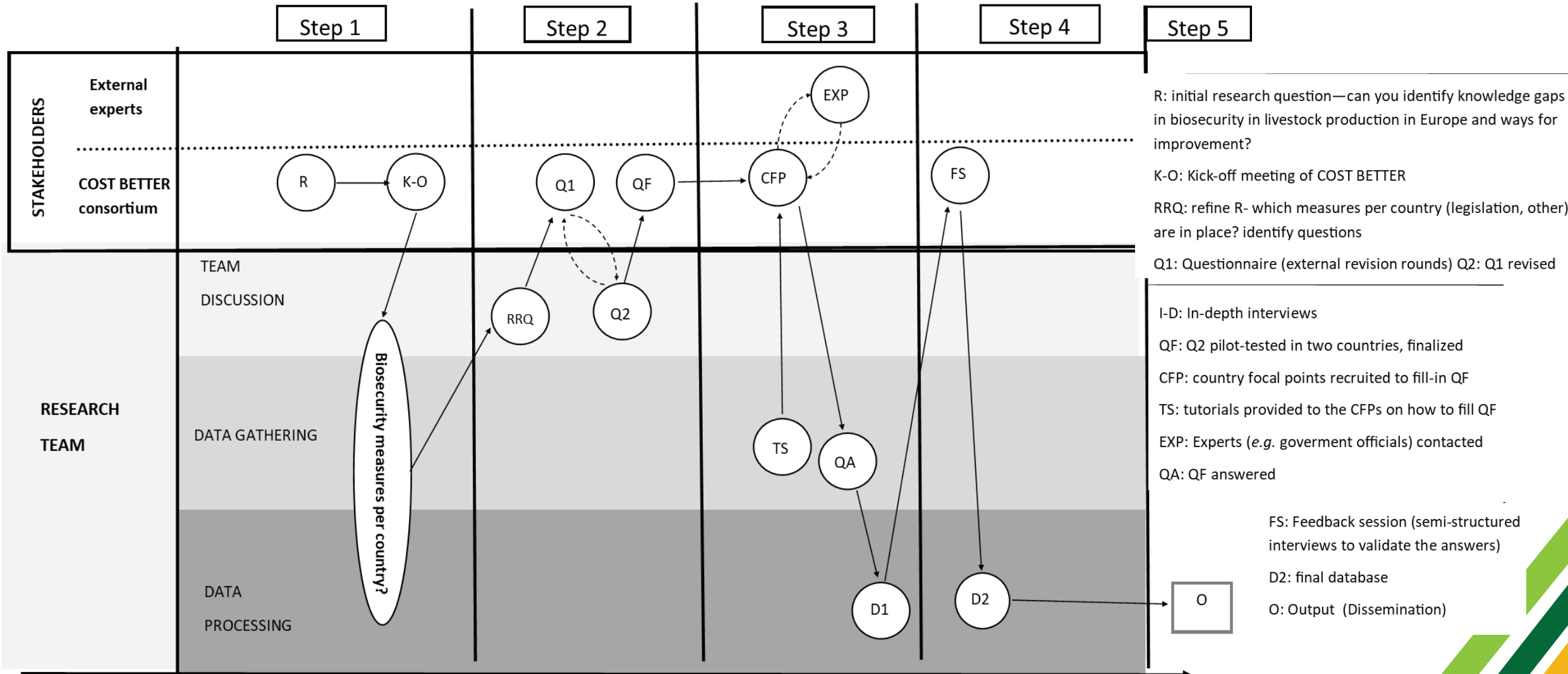
Pigs: completed by 25 countries and validated in all of them





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Describing the “journey”

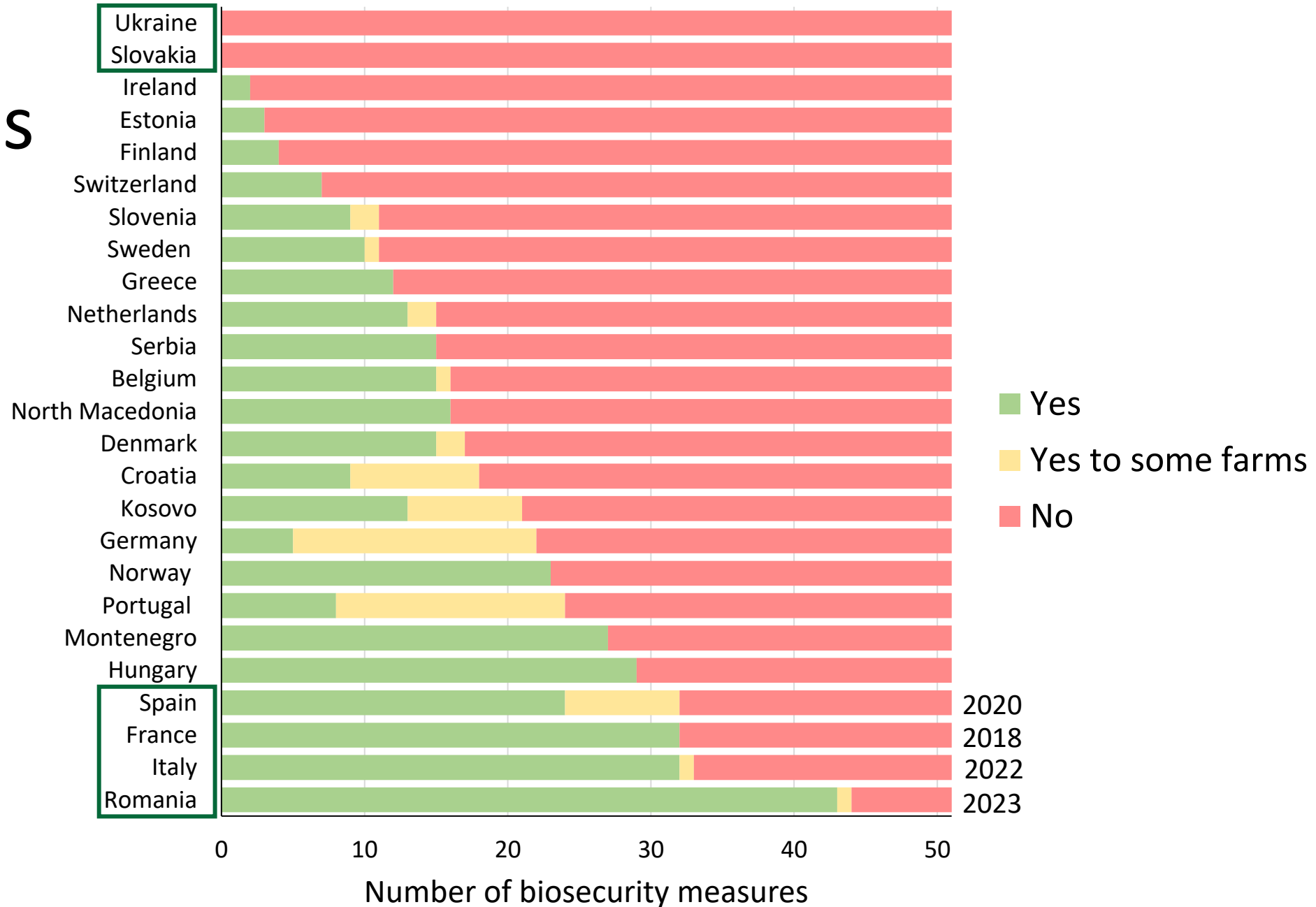
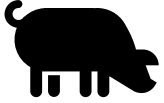




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Results

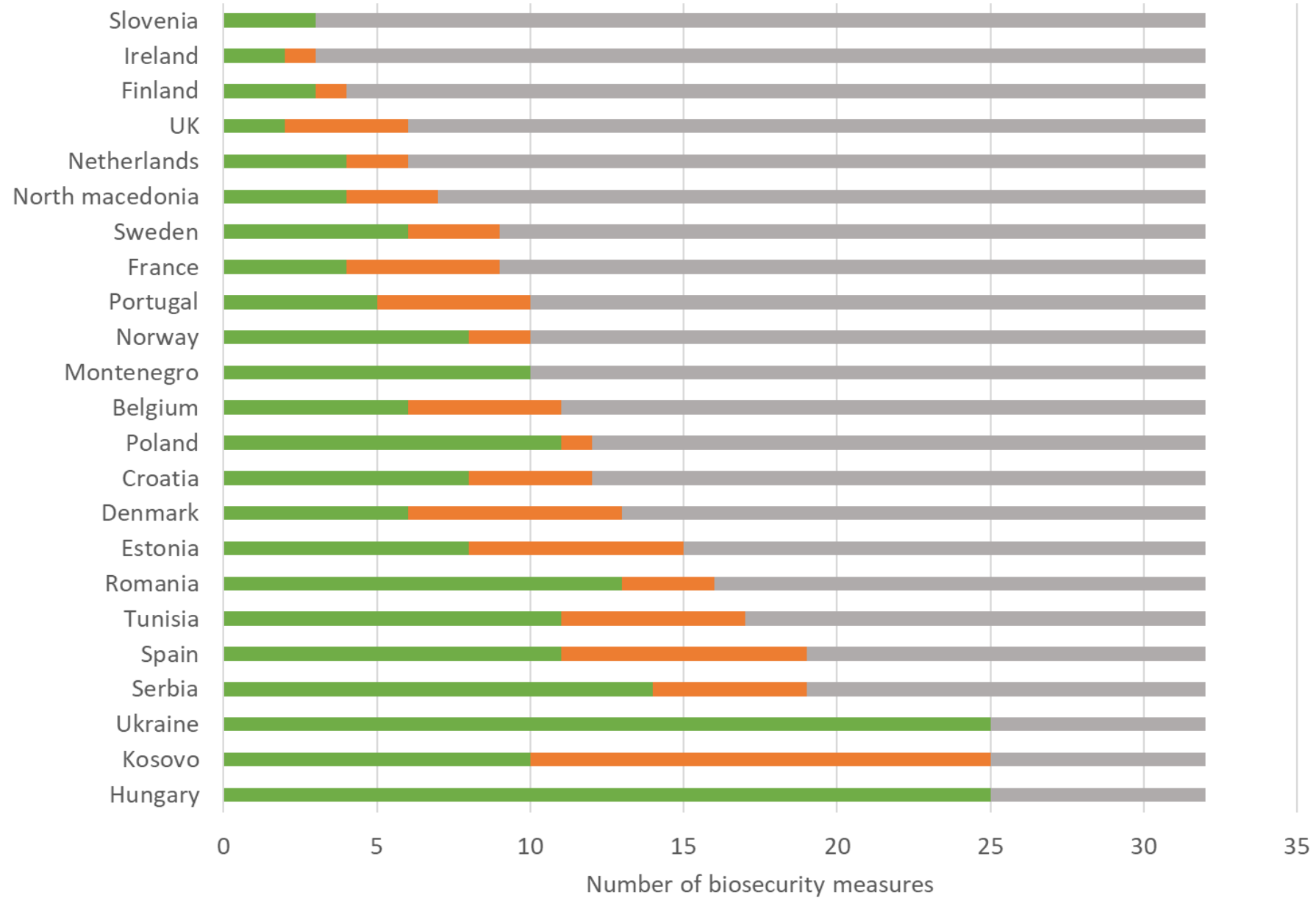
Biosecurity measures mandatory by law





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Biosecurity measures mandatory by law

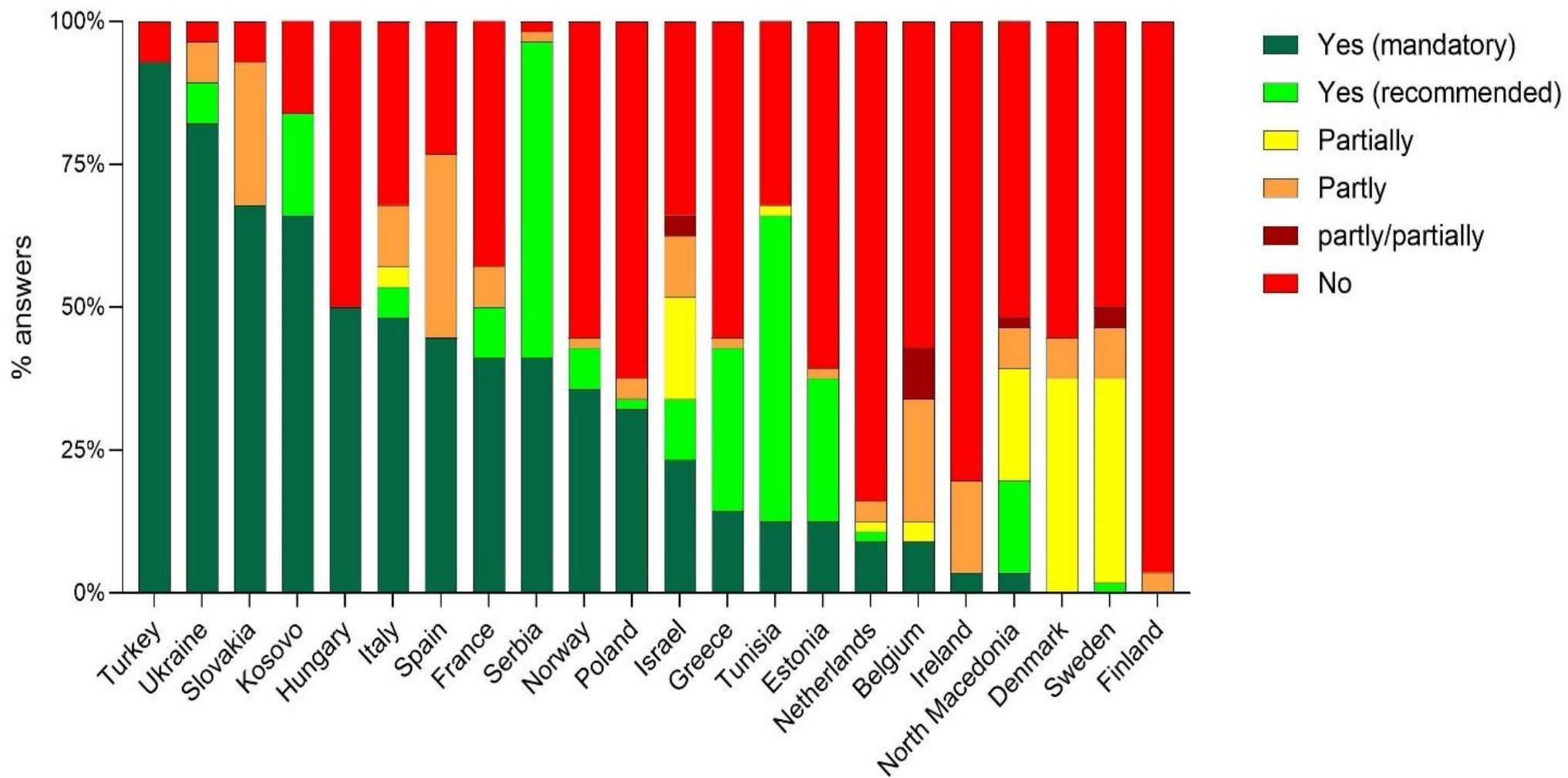
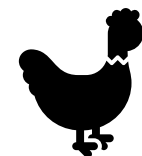


■ Yes ■ Yes for some farms ■ No



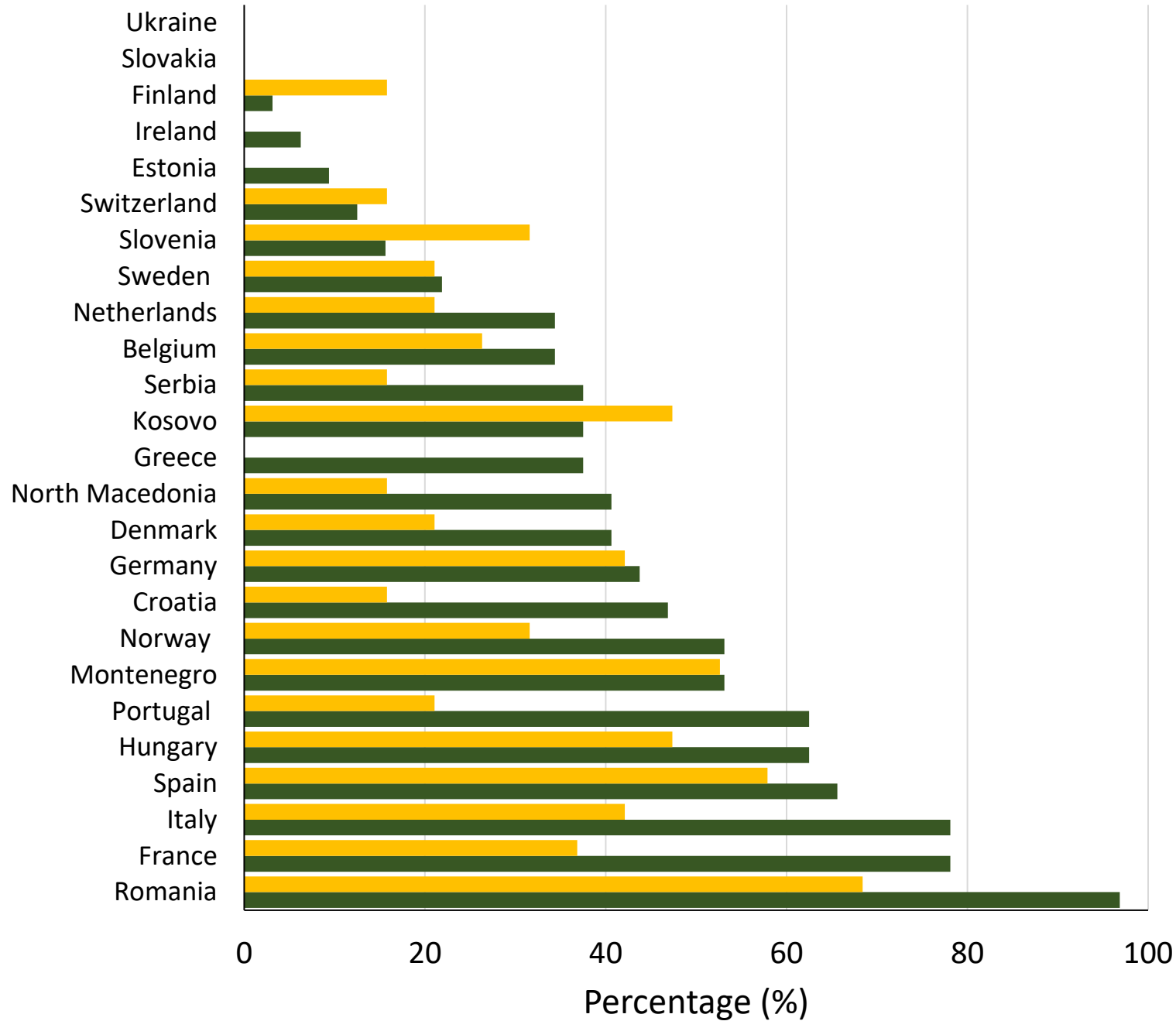
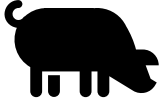
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Biosecurity measures mandatory by law




Results: external vs. internal biosecurity



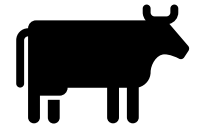
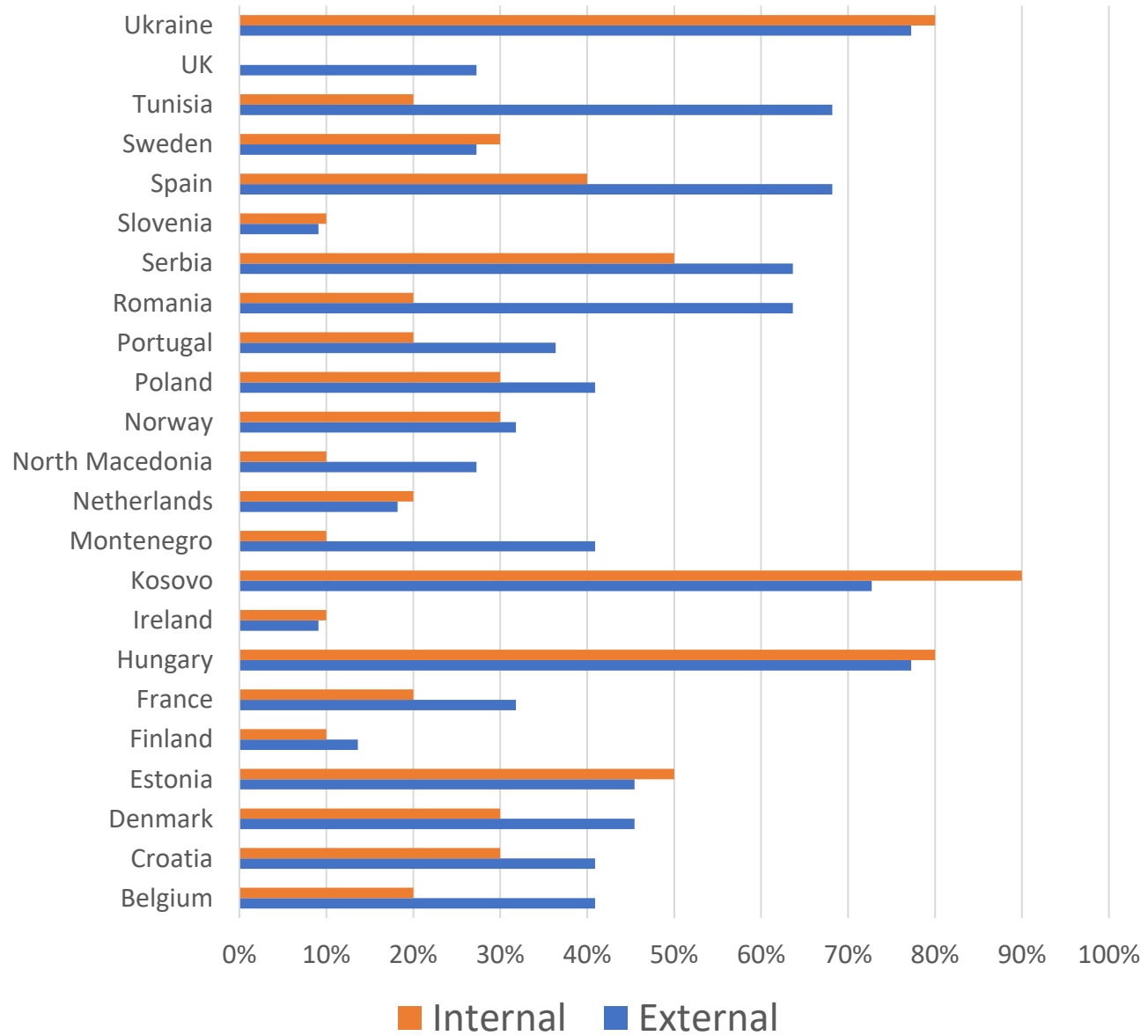


 Internal biosecurity
(median: 28.9%)

 External biosecurity
(median: 40.6%)



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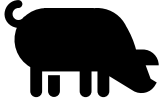
Internal biosecurity
(median: 30.0%)

External biosecurity
(median: 40.9%)



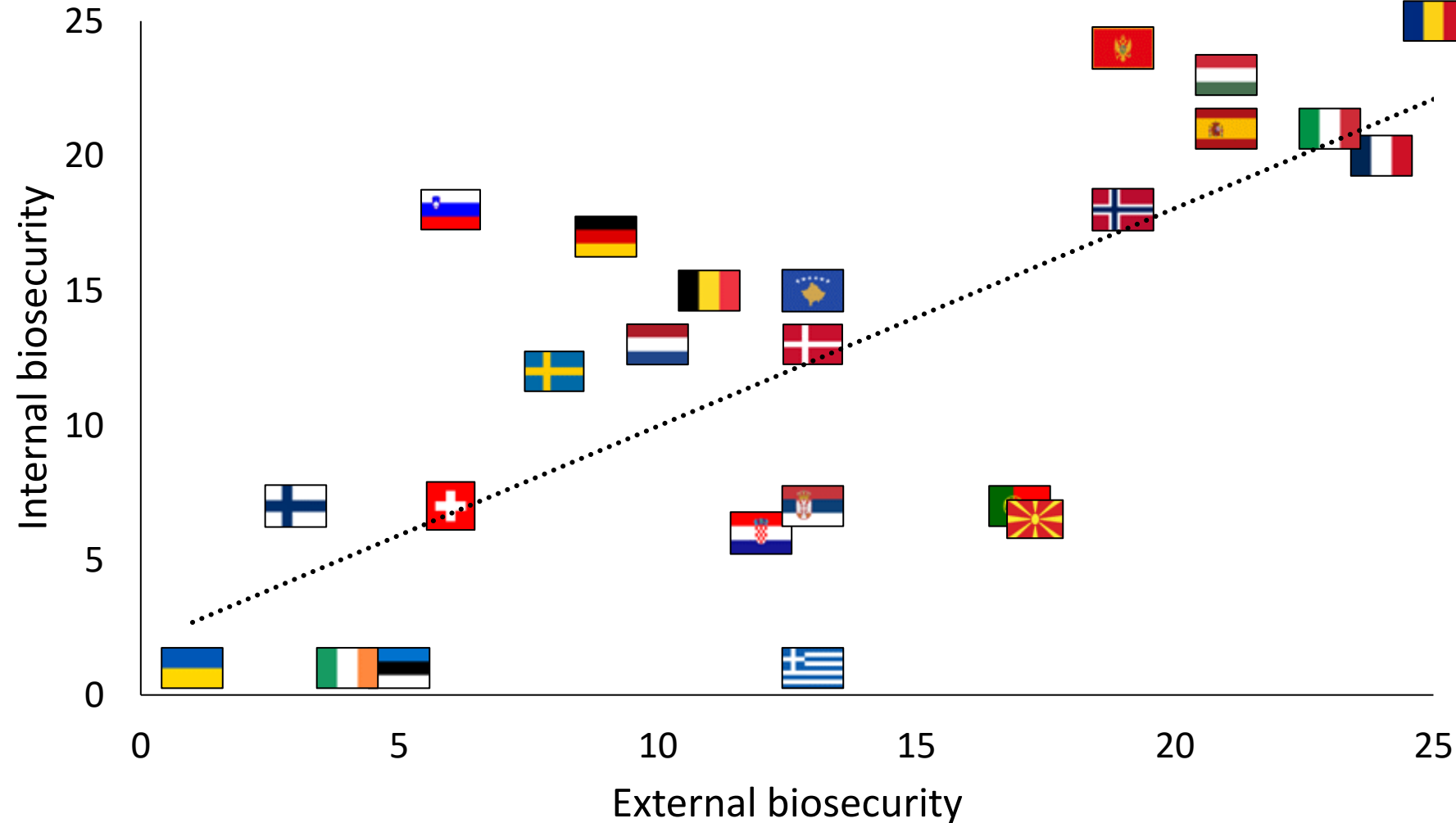
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Results: external vs. internal biosecurity



R_s value: 0.74

Spearman Rank Correlation



R_s value: 0.76





Results: specific biosecurity measures



Top-5 measures most frequently addressed in national legislation

Category	Measure questioned	Frequency
External	It is forbidden to feed animals with any kind of food waste, canteen or household leftovers	22
Internal	Vaccination and treatment schemes are documented and controlled by veterinary services, industry	18
External	All transport vehicles must have official documentation certifying that they have been cleaned and disinfected	17
External	Fencing around the pig farm is completed	16
Internal	There is a separate pen for sick animals that prevents direct contact with healthy animals	16

Top-5 measures least frequently

Internal	Separate equipment, needles, gloves, etc. are used when handling animals in the sickbay	2
External	A pig-free period is requested for all visitors	2
Internal	Farm work and visits are performed according to predefined working lines	1
Internal	Animals of different ages are housed in different rooms in the fattening unit	1
Internal	Animals of different ages are housed in different rooms in the nursery unit	0



Results: specific biosecurity measures



Top-5 measures most frequently addressed in national legislation

Category	Measure questioned	Frequency
External	A system for animal identification and traceability is in place	22
External	Dead animals and/or animal materials are collected by a rendering vehicle	20
Internal	The herd is assessed by a veterinarian at least once per year	20
External	Animals are tested (for specific diseases) after entering the farm in the quarantine facilities	14
External	Animals are tested (for specific diseases) before entering the farm	14

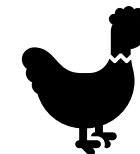
Top-5 measures least frequently

Internal	Workflows for on-farm personnel (e.g., from younger to older cattle) are established	2
External	All staff are exclusive to the farm (i.e., not shared with other farms)	3
External	The rendering vehicle can remove dead cattle without entering the farm perimeter	3
External	Transport vehicles for animals, feed, supplies, maintenance etc. are only permitted to leave the perimeter of the farm once properly disinfected	3
Internal	Materials are used for feeding calves (for colostrum, milk, etc) are cleaned/disinfected after use	4

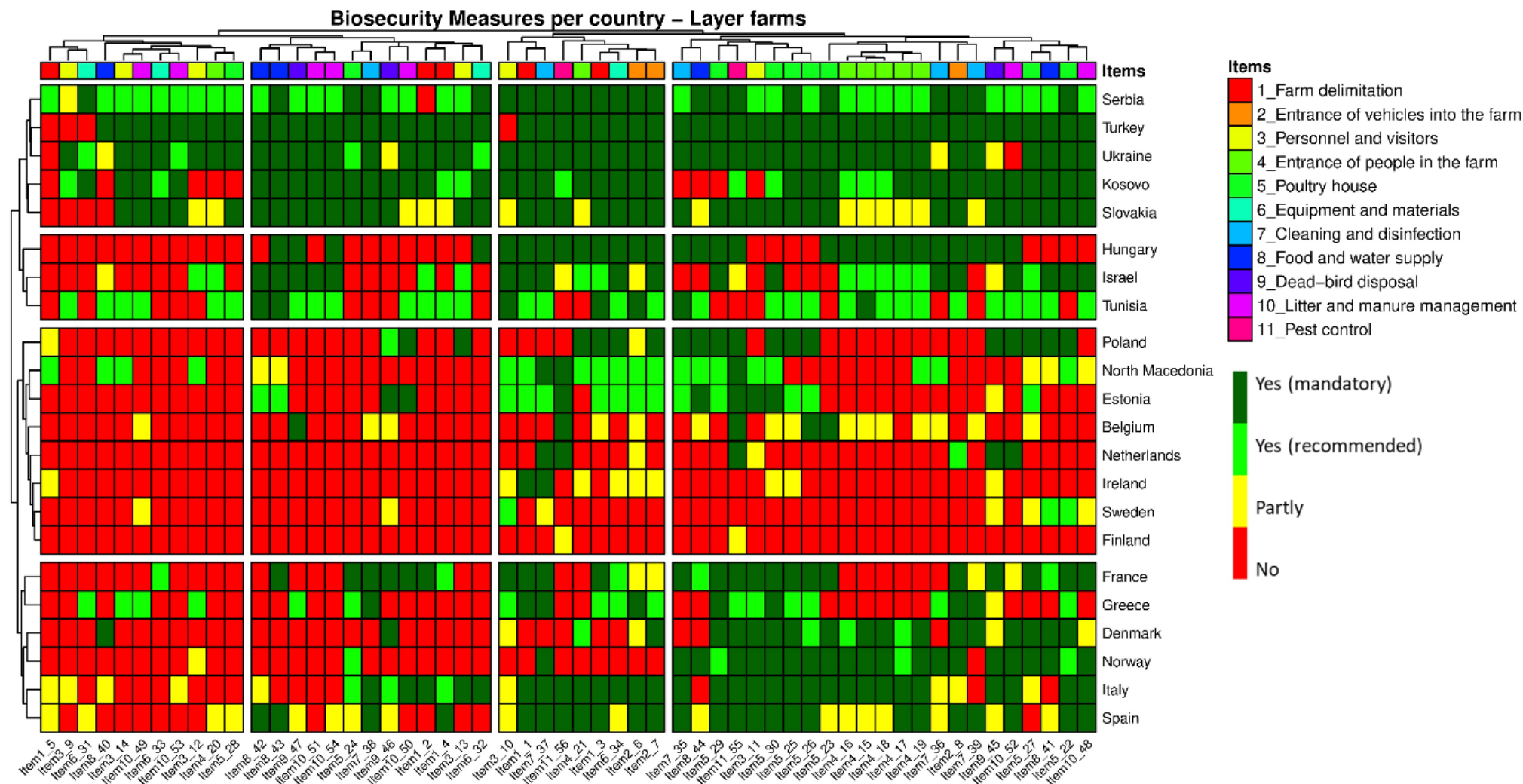


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Results: clustering biosecurity measures



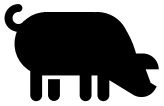
Hierarchical clustering of countries and BMs



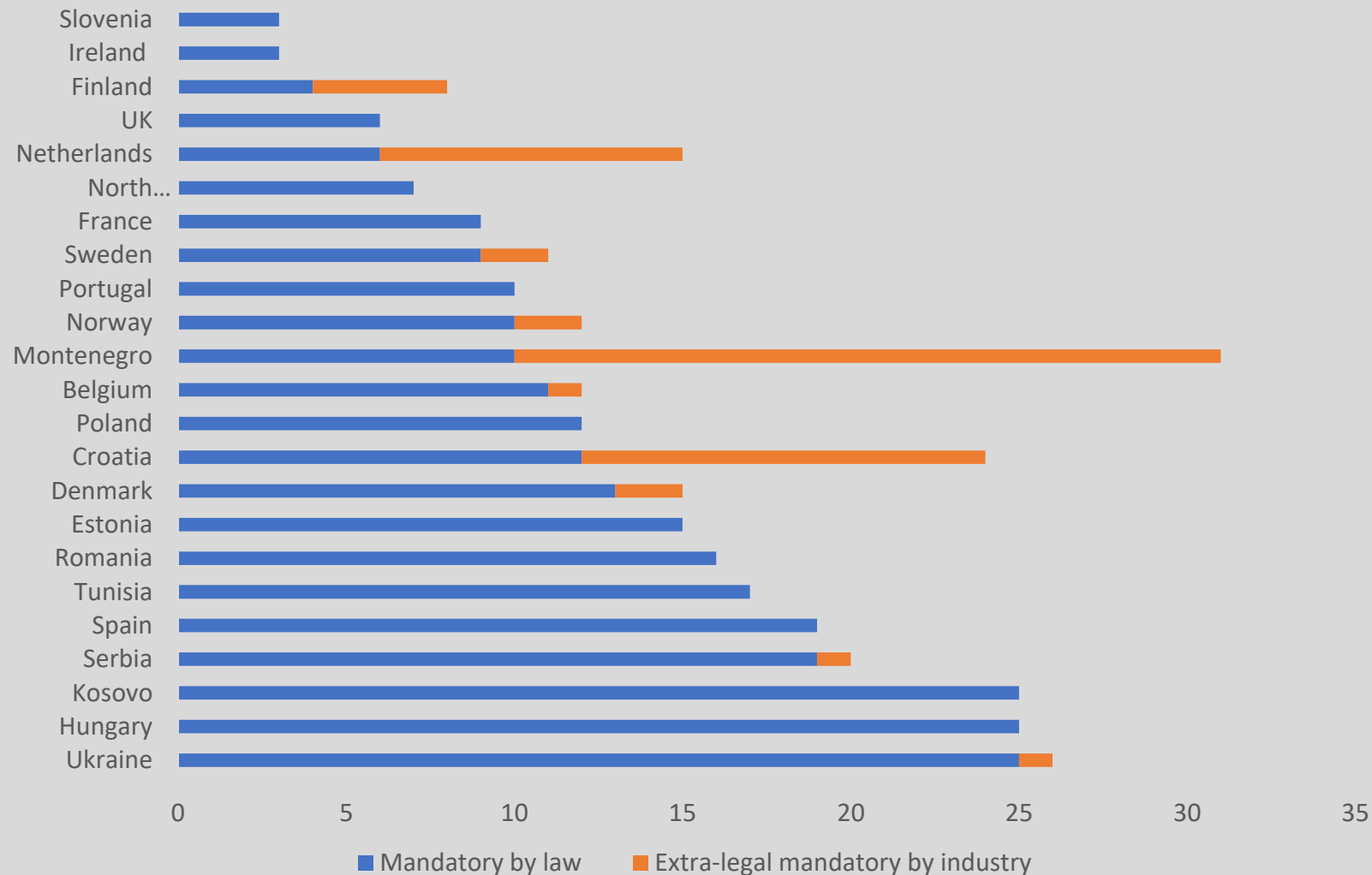


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Results: measures extra-legal by industry

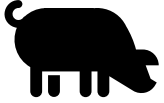


Estonia
Ireland
Switzerland
Belgium
Germany
Finland
Netherlands
Norway
Denmark
Sweden
Serbia
Croatia
Spain
Italy



to some

stry



Results: measures extra-legal by industry

Top-10 extra-legal biosecurity measures most frequently indicated by industry

Category	Measure questioned	Frequency
External	A pig-free period is requested for all visitors	8
External	Visitors are obliged to register before entering the stable	7
External	Newly introduced breeding animals are isolated in the quarantine stable and physically separated from other animals	7
External	Documentation that certifies the health status of newly introduced animals is required and controlled	7
External	The driver of the transport vehicle is not allowed to enter the barns	7
External	There exist a loading/unloading dock	7
External	There is separate deadstock storage for dead pigs, placed outside the animal handling area	6
Internal	Cleaning and disinfection of stable and equipment are always done before restocking with new animals in the farrowing crates	6
Internal	The farm has a system for recording the animal health, breeding, reproduction and production data	6
External	Visitors use farm specific clothing or disposable coveralls in the farm	5



Results: measures extra-legal by industry

Category	Measure questioned	Frequency
External	Visitors that require contact with animals such as veterinarians, hoof-trimmers, etc, are provided with boots/shoe covers on the farm	4
External	Cattle are purchased only from farms with an equal or higher health status	3
External	Visitors that are not essential to have contact with animals, such as salesman, advisors, etc, are not allowed to have contact with the animals	3
External	Visitors that require contact with animals such as veterinarians, hoof-trimmers, etc, are provided with overalls on the farm	3
External	Measures are in place to prevent the direct contact between cattle and other livestock species	3
Internal	Quality of drinking water checked by bacteriological analysis at least once a year?	3
Internal	There are any written protocols for hygiene procedures	3
Internal	Maternity pens for calving are in place	3
Internal	Separate pens (from maternity and quarantine) for diseased animals (hospital pens) used	3
Internal	Hospital pens disinfected after each use	3



BETTER



Results: measures extra-legal by industry

Category	Measure questioned	Frequency
External	Has the house hygiene lock a separation between "clean" and "dirty" area?	12
External	Are house-specific or disposable clothes and footwear used?	12
External	Are the surroundings of the house clean (e.g., cut grass, free from objects)?	11
External	Is a house hygiene lock present at the entrance of the house?	11
Internal	Is the inside of the house provided with washable and disinfect able floor, walls and roof?	11
External	Is the house protected by the entry of birds or other vermin by using proper tools (e.g., nets)?	11
Internal	Is the house cleaned and disinfected after each production cycle?	11
External	Is the farm provided with a cooled and closed carcass storage container?	11
External	Is manure stored in a dedicated closed area inside the farm area?	11

Discussion and conclusion

- High heterogeneity in number of measures
 - ✓ Not influenced by pig production or EU-status
- EU legislation for EU-member states
- Influence of legislation on compliance?
 - ✓ More data and research needed
- Increasing biosecurity on farms
 - ✓ Obligation (legislation or industry)
 - ✓ Auditing biosecurity
 - ✓ Actions upon results

Thank you for your attention!

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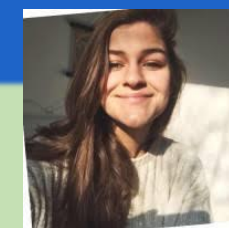
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Chair of Biosecurity in Animal Production

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Acknowledgements

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