



Animal health  
symposium 2024:  
NCDVAC

# Aims of the project

## NCDVAC



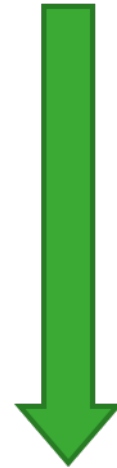
WP1



Evaluate the current vaccination protocols in hobby, broilers, layers and breeders

Consolidate Data

Identify points of improvement



WP3



Develop tools for vaccinal-immunoconversion measurement

More complete view of the IR

Field tools for measurement

Differentiate vaccination/infection

WP2

Improve currently obtained vaccinal protection when necessary

Alternative vaccination strategies







# Evaluation of current vaccination strategies

Joke Van Raemdonck (DGZ)

# Selection and serological evaluation of poultry flocks

15 farms completed the questionnaire  
→ insight in implementation of vaccination in the field

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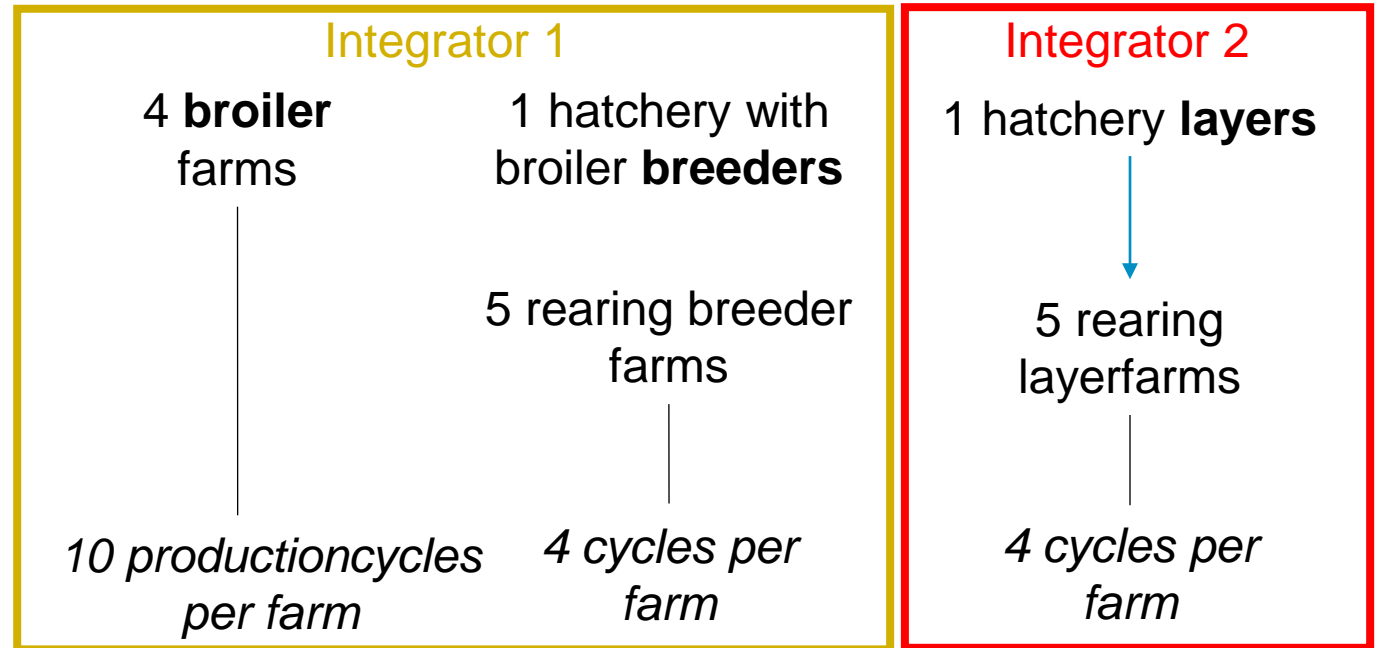
Call for voluntary participation and approaching hatcheries to participate in the project



Historical data: preference for farms with low titres or high variation



14 participants distributed across Flanders



# Analyse and improve the vaccination outcome and protocols

## DMAIC

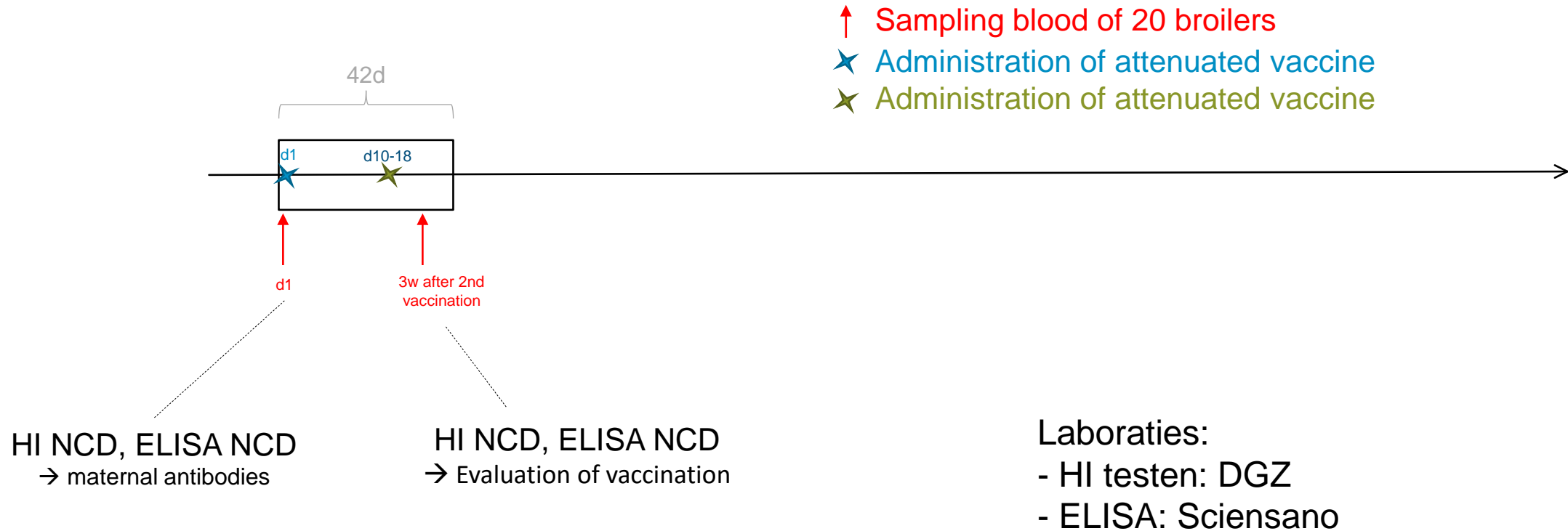
### Target

- 1) Improvement immunity levels after vaccination
- 2) Vaccination manual based on what we learned



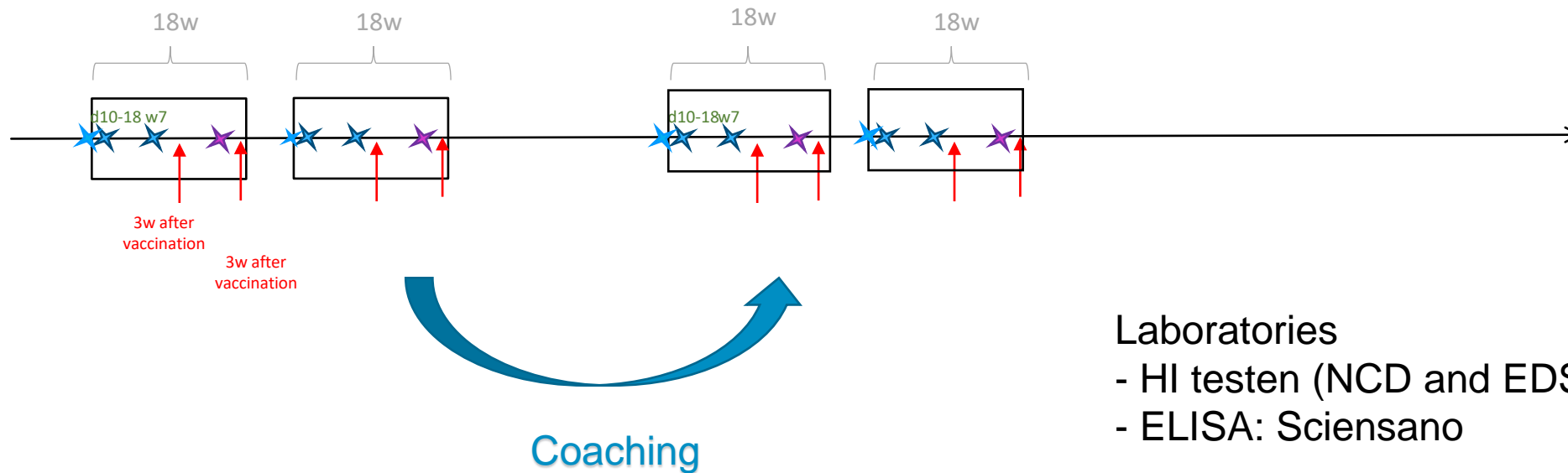
Source: Virginia Hospital and Healthcare Association

# Measure phase: Broilers



# Measure phase: Layers

- ↑ Sampling blood of 20 broilers
- ✦ Administrating vector vaccine (D1)
- ✦ Administrating attenuated vaccine
- ✦ Inactivated vaccine



Laboratories

- HI testen (NCD and EDS): DGZ
- ELISA: Sciensano



# Improve phase

- Broilers farms
  - Turning down/off ventilation during spraying
  - Adding the correct dosage of vaccine stabilizer
  - Lower the lines when vaccine solution is visible at the end
  - C&D material used for vaccination
  - Not too early (<14d)
- Layer farms
  - Temperature monitoring
  - C&D material used for vaccination
  - Sampling of the vaccine solution
- Breeder farms
  - Correct dosage of vaccine stabilizer
  - Temperature monitoring
  - C&D material used for vaccination
  - Sampling of the vaccine solution

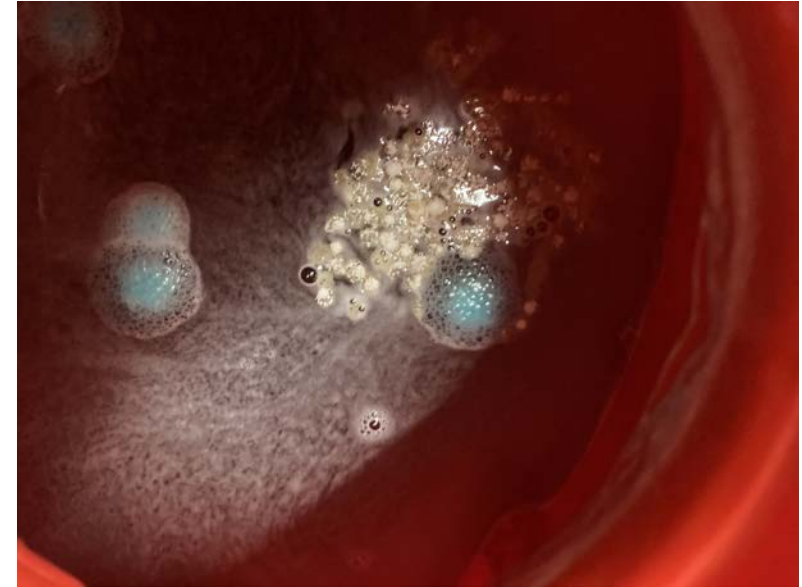




## Improve phase: examples

### Recommendations

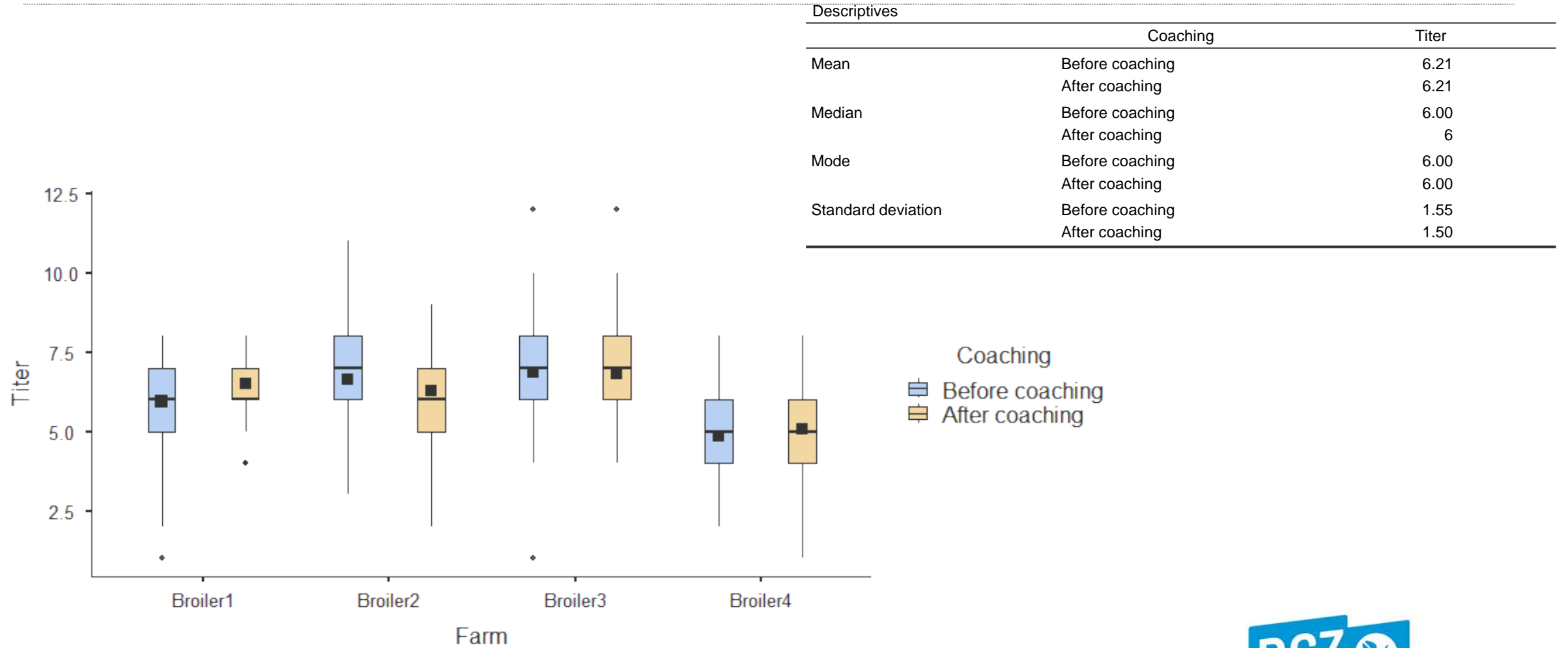
- Continuous monitoring of water quality to ensure consistent high quality.
- Monitoring temperature in the refrigerator, for example, by placing a thermometer in the fridge and checking it weekly.
- Using a vaccination stabilizer, not only for visual control during waterline vaccination but also for pH stabilization, chlorine capture, etc.
- Turning off ventilation during vaccination.
- Protocol for cleaning and disinfecting the sprayer.



### Recommendations

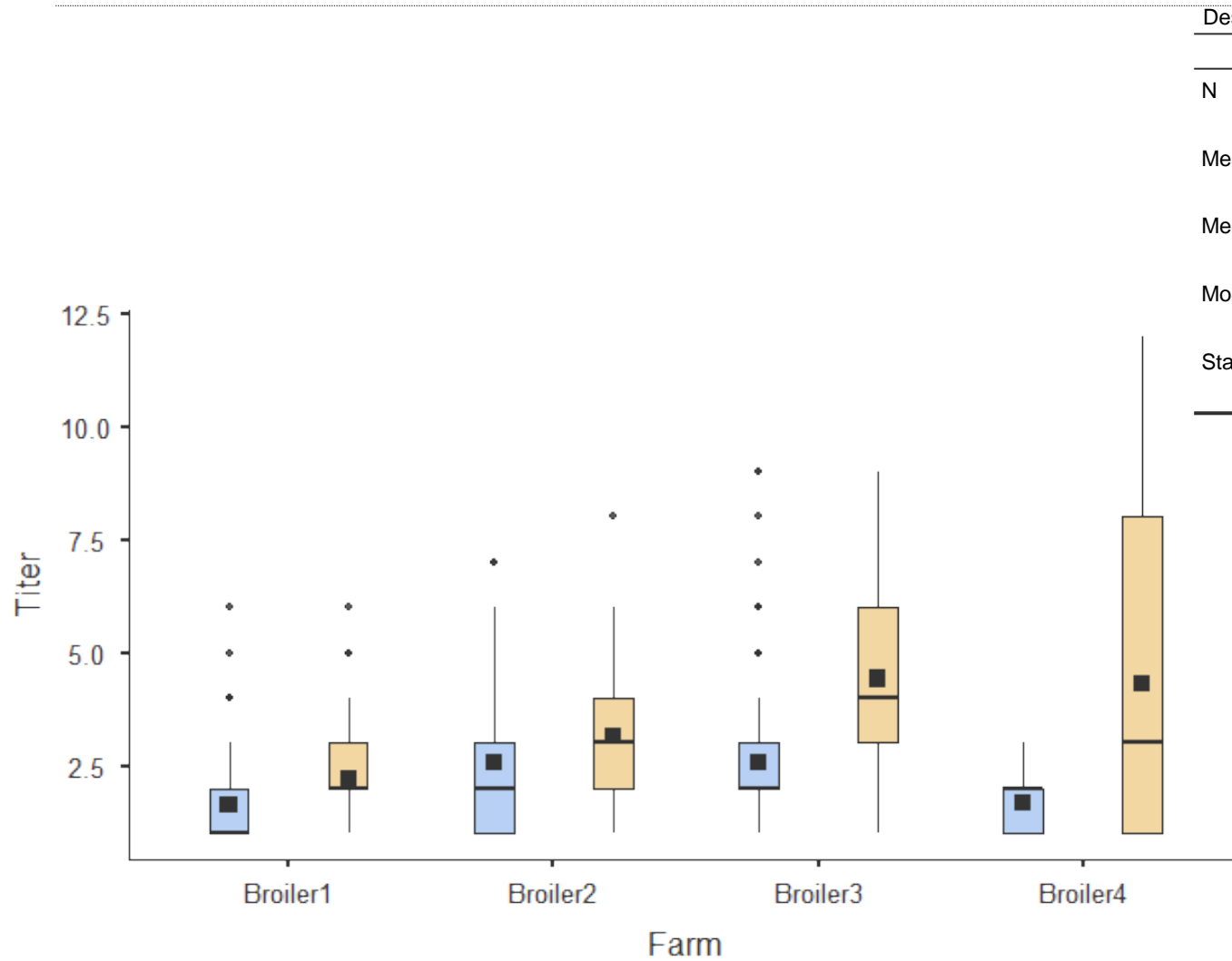
- Optimize cleaning and disinfection protocol for the sprayer, a protocol will follow.
- Correct dosing of vaccine stabilizer: 125 grams per 1000 liters (1 cap = 25 grams)

# Improve phase: Broilers D1



Descriptives		
	Coaching	
	Before coaching	After coaching
Mean	6.21	6.21
Median	6.00	6
Mode	6.00	6.00
Standard deviation	1.55	1.50

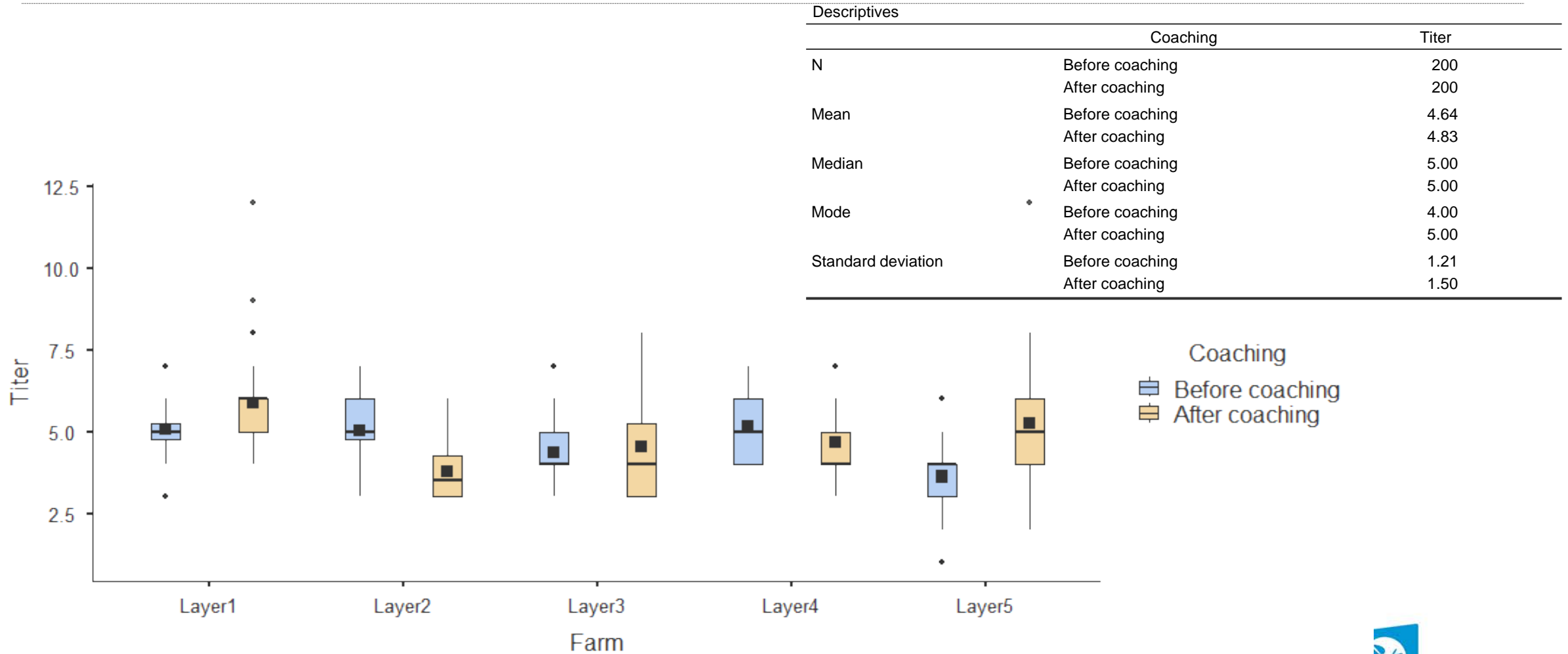
# Improve phase: Broilers W5



Descriptives		
	Coaching	
	Before coaching	After coaching
N	360	280
Mean	2.17	3.56
Median	2.00	3.00
Mode	1.00	2.00
Standard deviation	1.44	2.19

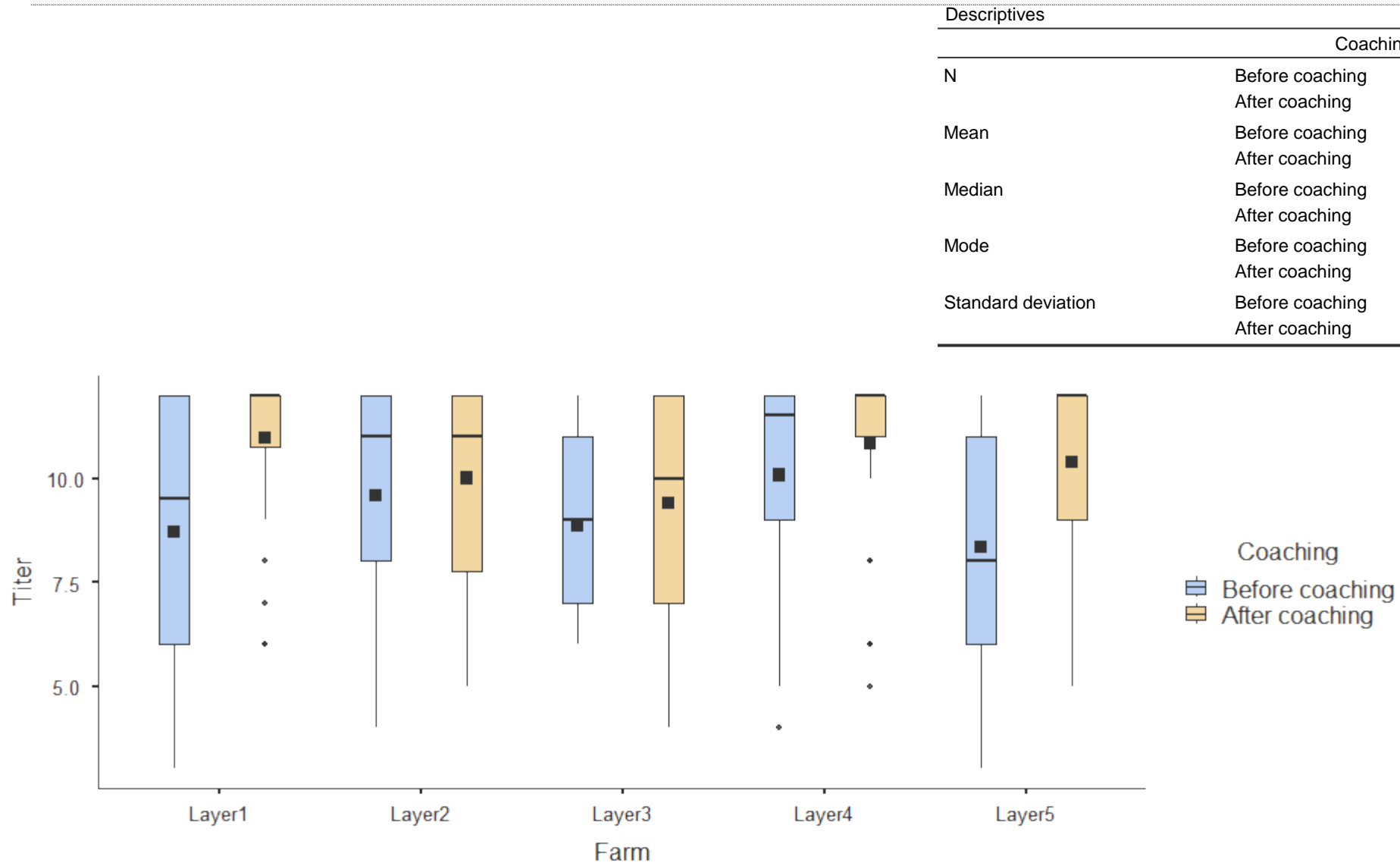
Coaching  
■ Before coaching  
■ After coaching

# Improve phase: Layers W10 NCD HI



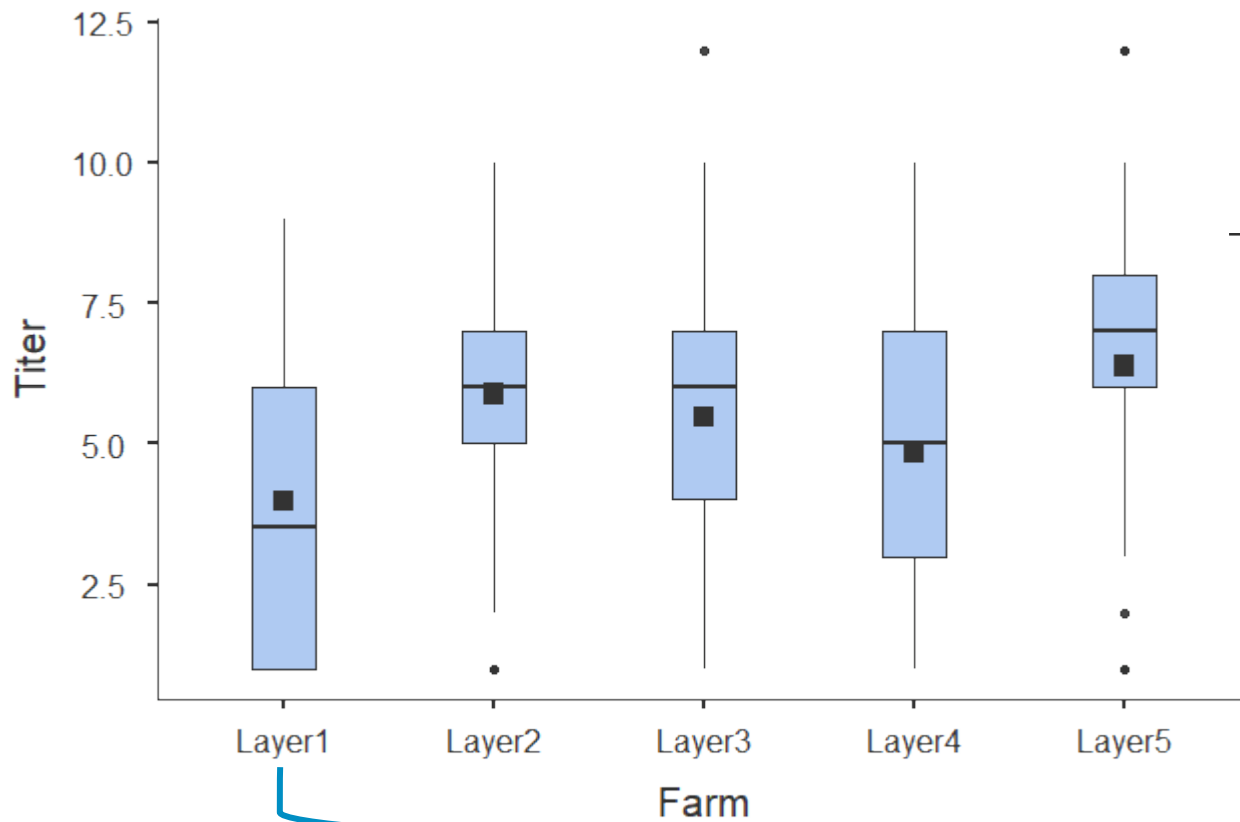


# Improve phase: Layers W15

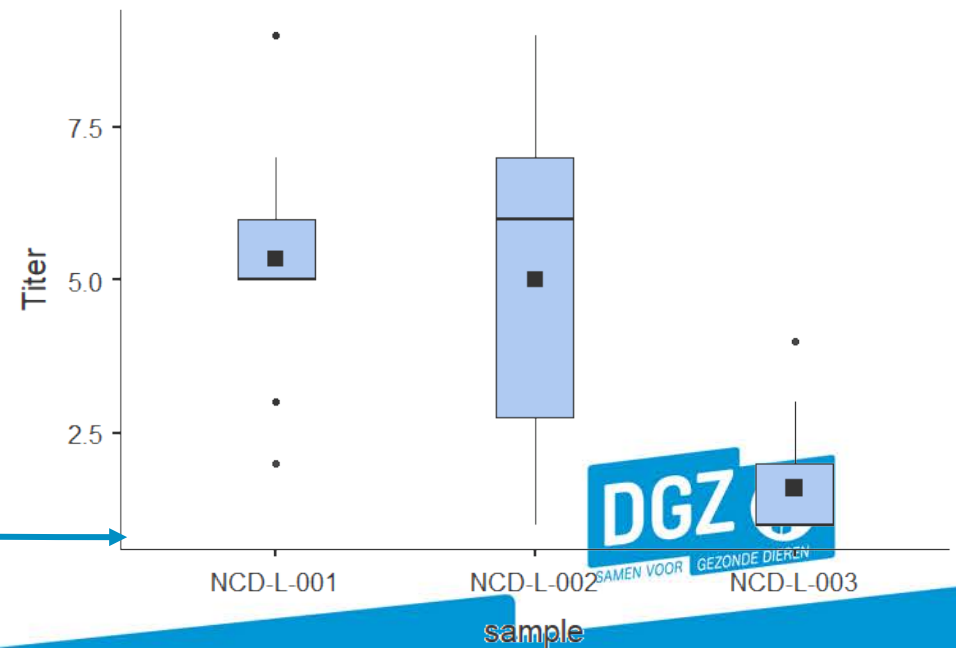


Descriptives	Coaching	
	Before coaching	After coaching
N	200	200
Mean	9.11	10.3
Median	10.0	11.0
Mode	12.0	12.0
Standard deviation	2.71	2.15

# Improve phase: Layers EDS analyses (W15)

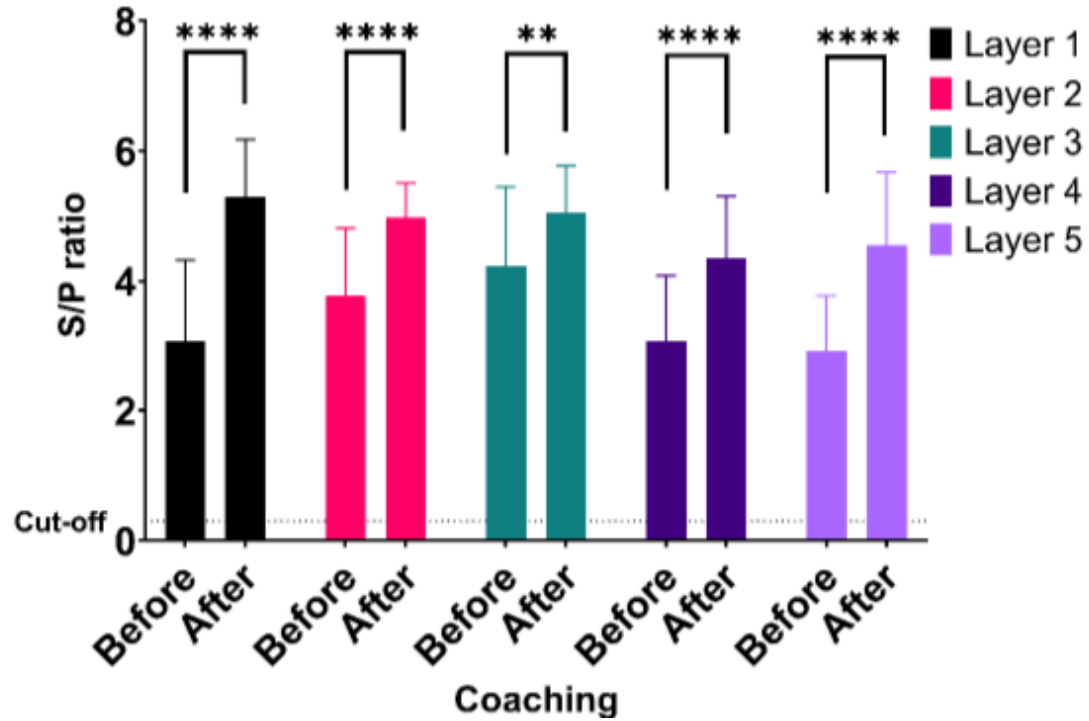


Descriptives							
	Farm	N	Missing	Mean	Median	Mode	SD
Titer	Layer1	60	0	3.98	3.50	1.00	2.59
	Layer2	60	0	5.88	6.00	7.00	2.04
	Layer3	80	0	5.47	6.00	6.00	2.08
	Layer4	80	0	4.84	5.00	5.00	2.62
	Layer5	60	0	6.38	7.00	7.00	2.53

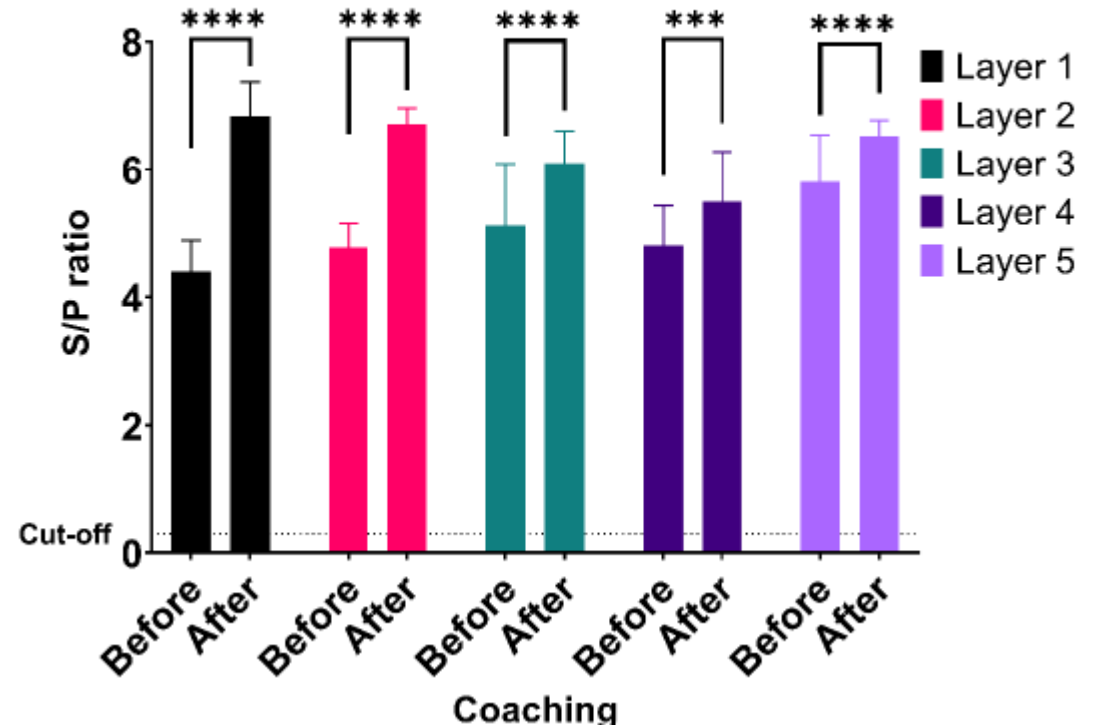


# Improve phase: Layers - ELISA NCD

Layers: 10-week-old  
Commercial NDV-S ELISA



Layers: 16-week-old  
Commercial NDV-S ELISA



## Conclusion

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- It is difficult to interpret the historical data, due to a lack of metadata such as time of vaccination, interval vaccination-sampling...
- The DMAIC method allowed to identify potential **critical points** for efficient vaccination and to get a better view on the **vaccination practices** in the field.
- Significantly better vaccination outcomes on the layer farms and on some breeder farms by **ELISA**, not confirmed by **HI**.
- Effect of **maternal immunity** on vaccination outcome in broilers requires further investigation.
- The small number of samples and rounds followed post coaching **does not yet allow for clear conclusions** about the impact of the coaching on the participating farms.
- The manual on good vaccination practices can be used to **spread knowledge** in the poultry sector.
  
- More information:
  - [NCD VAC | DGZ](#)
  - [Gids voor goede vaccinatietechnieken bij pluimvee | DGZ](#)





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