



## Case study of a newly-developed genotype for dual-purpose rearing of male chicks

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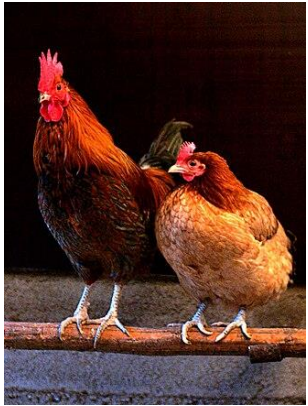
EAAP, Lyon  
August 30, 2023



# PPILOW Status of chick culling in Germany and France

## Layer strain

*Selection based on egg production, egg quality traits*



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## Progeny

### Fertilized eggs



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### Chicks



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~~Culling of day-old male chicks~~

### FR: Article R214-17

- From 1/1/2023 : all hatcheries have to be equipped with operational material to avoid culling chick  
-> Special case when it is not possible to respect the decree

### DE: Article TierSchtG Art. 1 § 4c

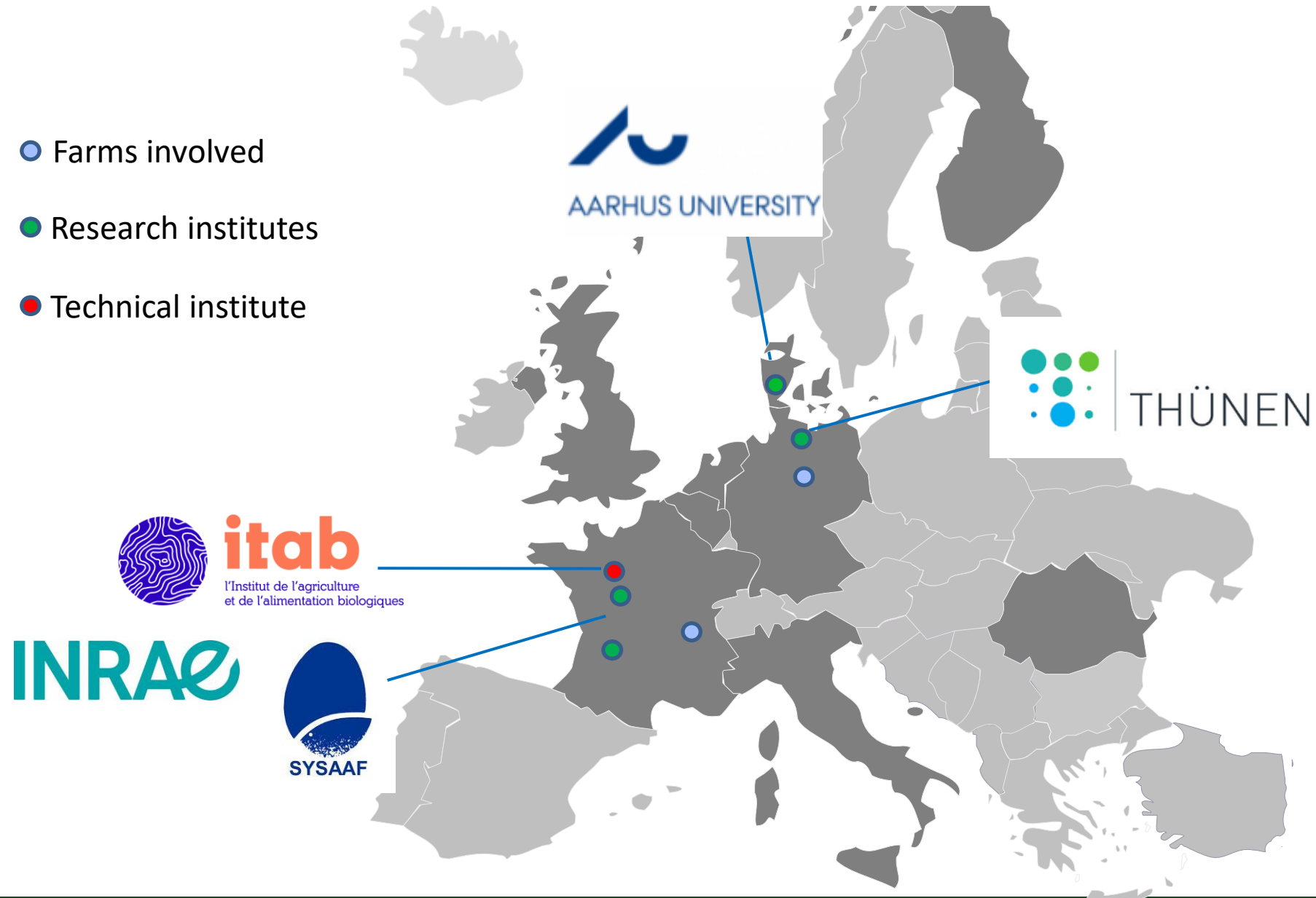
- From 1/1/2022 : makes it a punishable offence to kill a vertebrate animal "without reasonable cause" (unprofitability) or to cause it suffering and pain

### Strategies :

- fattening of males of layer lines
- In ovo sexing
- dual-purpose genotypes

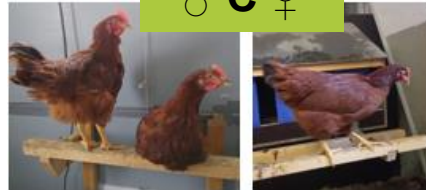
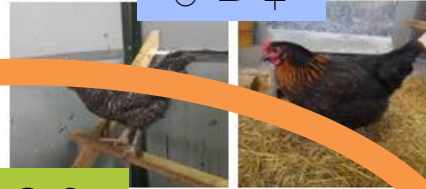
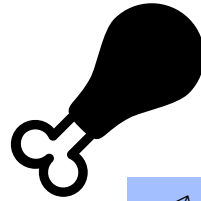
# PPILOW Partners : on-farm trials of dual-purpose genotypes

- Farms involved
- Research institutes
- Technical institute



# PPILOW Genotypes & National Practitioner Group decision

On-station results on the fattening of males



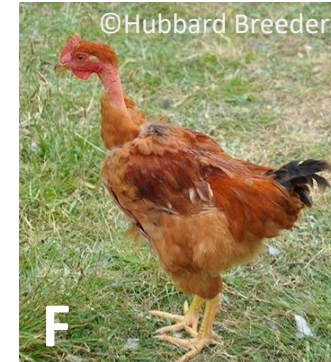
On-station results on the egg production of laying hens



Based on these results, the NPG in each country selected the most promising genotype to be tested on the farm

## Different rearing conditions in France and Germany

	France	Germany
Number of birds	C' 220/F 220	C 220/D 520
Same hatch for C	✓	✓
Diet	Different	Different
Feed consumption	✓	✓
FCR	✓	✓
Behaviour observations	✗	✓
Welfare indicators	✗	✓
Mortality	✓	✓
Age at slaughter, wks	13 and 15	C 16 / D 13
Carcass weight	✓	✓
Valuable cuts	✓	✗



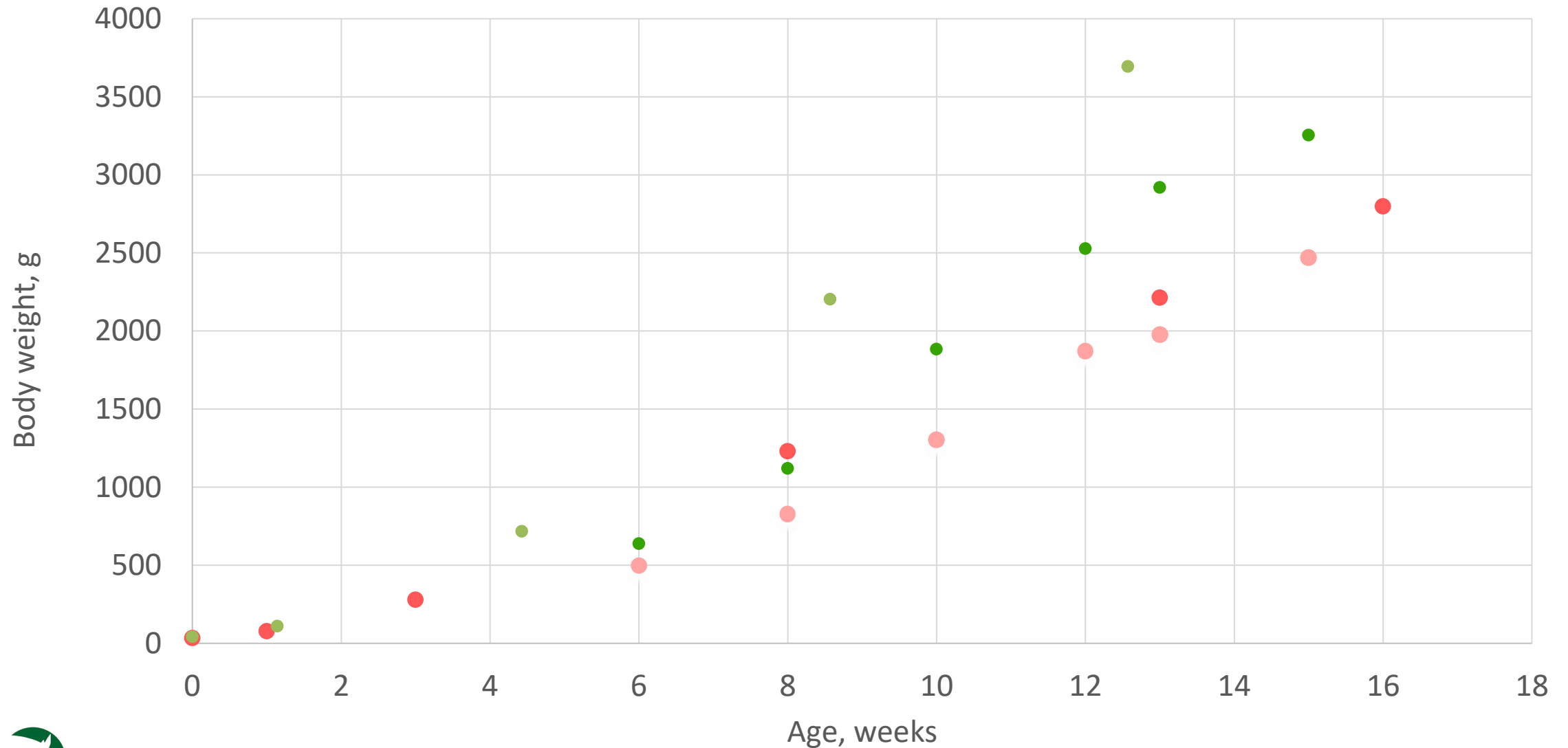
FR: Control genotype (S757N)



DE: Control genotype (JA757)

# PPILOW Results – Growth curves of genotypes

- Genotype C Germany
- Genotype C France
- Control Germany
- Control France

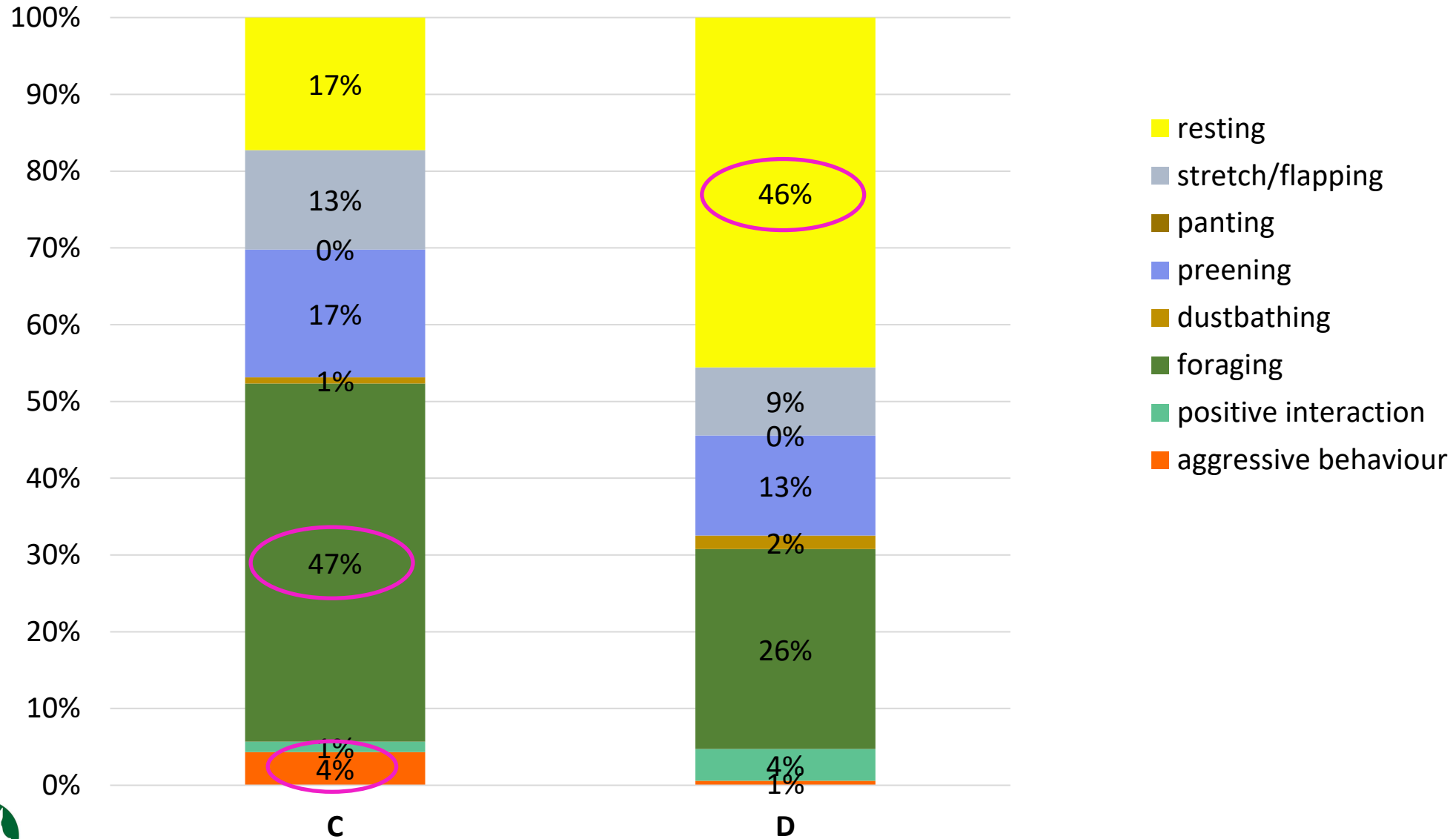


	France		Germany	
	C'	F	C	D
Mortality, %	4.5	1.4	11	1.2
FCR (13 wk)	3.7	2.6	3.7	2.7
Carcass weights at 13 wk, kg	1.4*	2.0*		2.4
Carcass weights at 15 wk, kg	1.7*	2.4*		
Carcass weights at 16 wk, kg			1.8	

\* Including neck

# PPILOW Results – Behaviour Observations in Germany

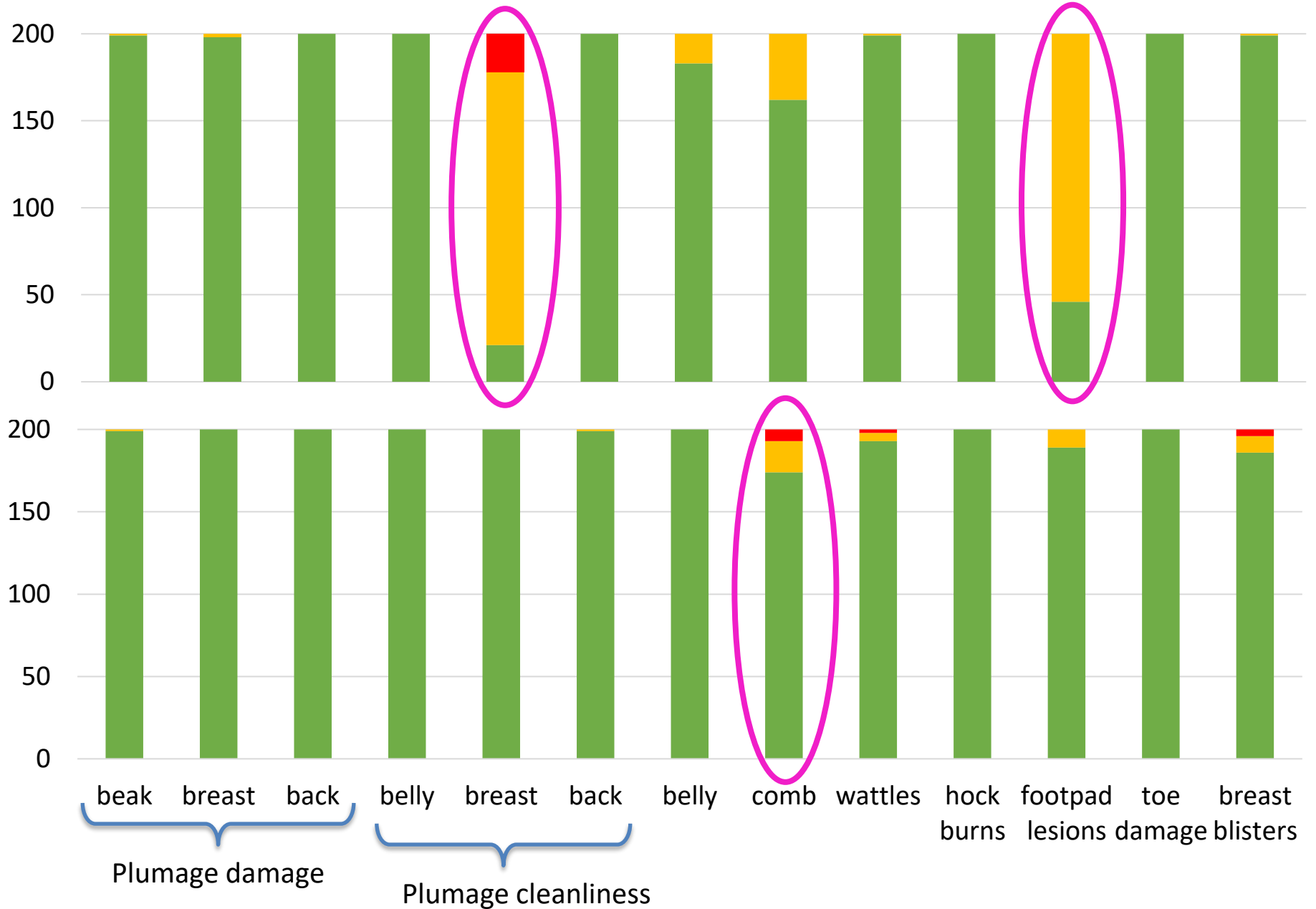
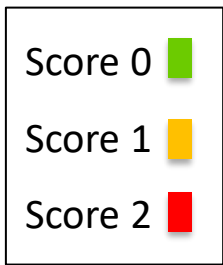
Proportions of behaviours during continuous observation in week before slaughter





# PPILOW Results – Welfare Indicators in Germany

Control D  
n=200



# PPILOW Results – Carcass Characteristics in France

At week 13: Avg ± SE

	C'	F
Legs weight (g)	448 ± 9	668 ± 12
Wings weight (g)	180 ± 3	246 ± 4
Breast weight (g)	201 ± 5	354 ± 11

At week 15 : Avg ± SE

	C'	F
Legs weight (g)	574 ± 12	838 ± 9
Wings weight (g)	219 ± 6	286 ± 3
Breast weight (g)	269 ± 4	462 ± 6

## Carcass conformation scores



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	Genotype	Score 0	Score 1	Score 2
Wk 13	F	<b>100%</b>	0	0
	C	0	0	<b>100%</b>
Wk 15	F	<b>97%</b>	3%	0
	C	4%	<b>39%</b>	<b>58%</b>

### Genotype C

- reared in two different environments (same batch)
  - Up to 15 and 16 weeks of age
- Similar FCR & carcass weights in both countries  
→ Very good welfare  
→ Very active birds



### Around Europe :

- More farmers interested to test dual-purpose breeds on their farms
- Some farmers from NPG are implementing the innovation

## An economic analysis of rearing dual-purpose will be presented in this session -> Niemi, J., et al., 2023

1. Longer fattening period with higher FCR → higher feed costs than control genotypes
2. May be economically feasible if meat is sold at higher price
3. Perspectives :
  - Productivity of the females should be considered for a complete economic analysis of dual-purpose genotype: selling eggs a higher price?
  - Could males from dual-purpose genotypes valorize side products of the food industry to decrease feeding cost?

# PPILOW PARTNERS



*Thank you for your attention*

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