



Interprofession des Oeufs



# Use of chemical anthelmintics in organic egg production

Current situation and consequences of the new regulation



# The resources



300 participants



**Observatory of helminth carriage in laying hens**

2019 - 2023



# New regulation, new constraints

## What changes for the egg industry with the new organic regulations?

Passed in 2018, the new organic regulations applicable from 1 January 2022 tighten up the rules on rearing pullets and laying hens.

- **New production rules for organic pullets, including free-range rearing**
- **The switch to 100% organic feed for layers, planned for pullets in 2027**
- **Allopathic veterinary treatments (including antiparasitic treatments), with waiting times doubled or set at a minimum of 48 hours.**

### ACCUMULATION OF NEGATIVE IMPACTS AND DIFFICULTIES

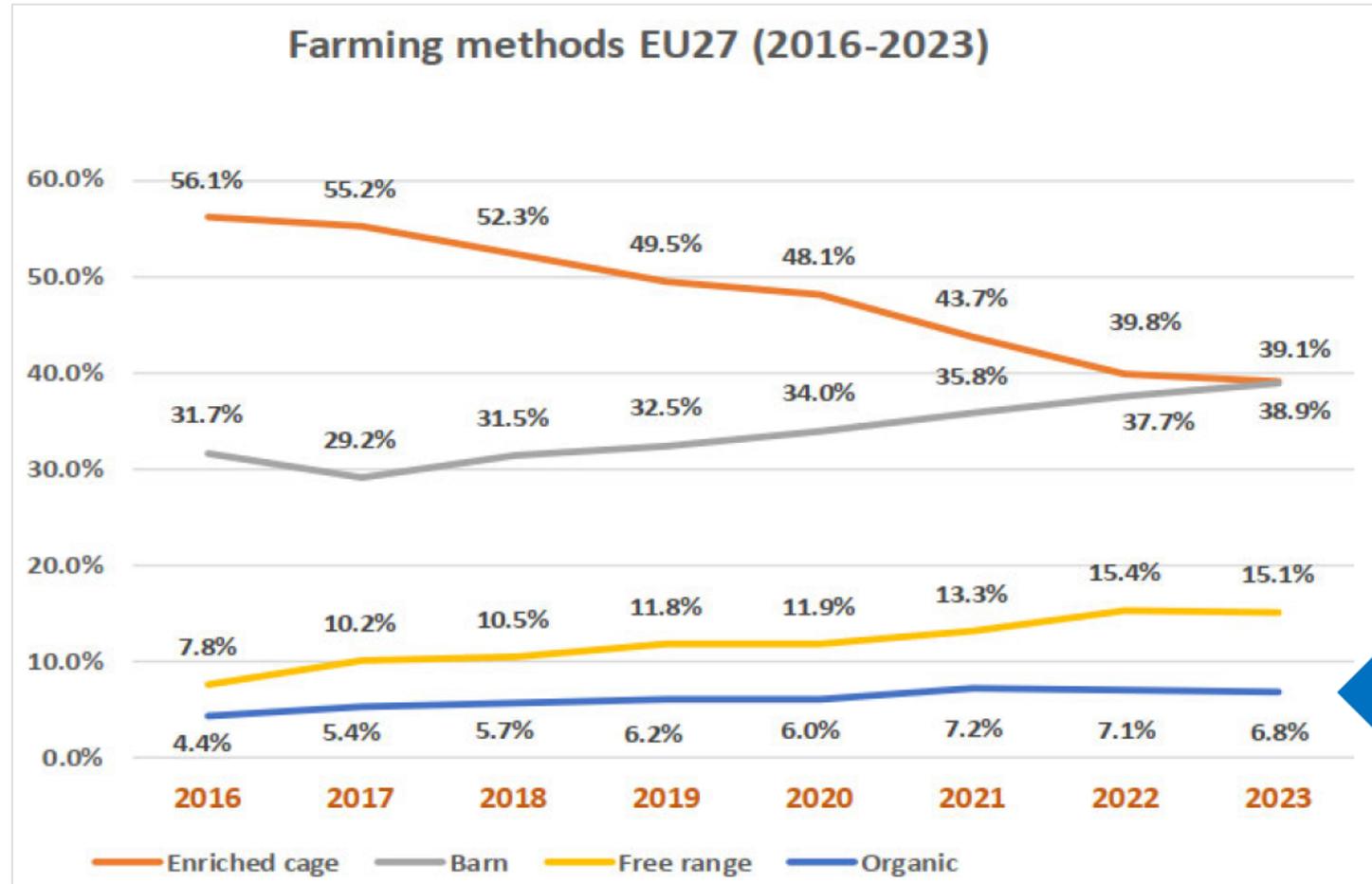
- behaviors more complicated to manage,
- higher mortality,
- lower productivity,
- more fragile eggs,
- increase in egg production costs (numerous additional costs, etc.)
- increased working time for farmers

### → END OF POSSIBLE TECHNICAL OPTIONS

Many farmers choose to stop and will not restart even if the market improves



# A decline in organic egg production since 2022



EU Market situation for eggs on 17/09/2024 (source: European Commission)



# The most problematic intestinal worms

*Ascaridia galli*



- Type : Nematode
- Contamination : Direct cycle
- No intermediate host
- Size : 5-12 cm

**Nutrient absorption**  
**Intestinal occlusions**

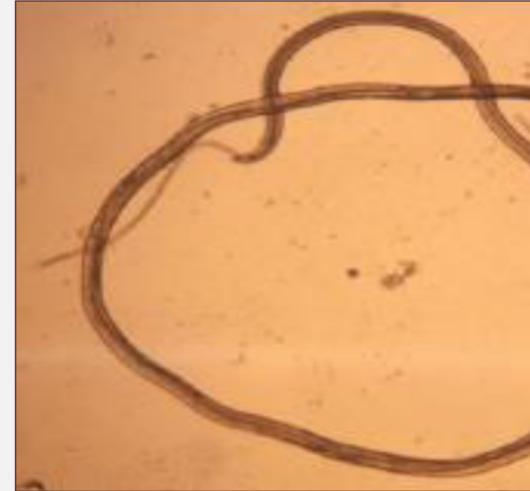
*Heterakis*



- Type : Nematode
- Contamination : Direct cycle
- No intermediate host
- Size : 7-15 mm

**Ability to carry**  
***Histomonas meleagridis***

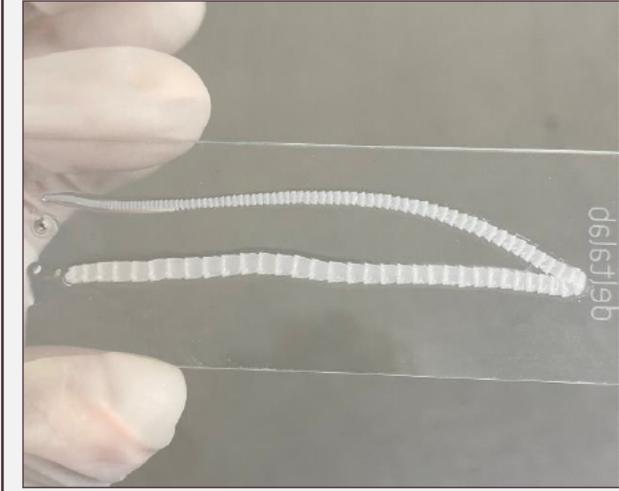
*Capillaria*



- Type : Nematode
- Contamination : (In)direct cycle
- Intermediate host : earthworm
- Size : 1-6 mm (very thin)

**In large quantities causes**  
**capillariosis**

*Raillietina*



- Type : Cestode
- Contamination : Indirect cycle
- Intermediate host : Coleoptera
- Size : 9-13 cm

**Nutrient absorption**  
**Intestinal occlusions**

# A high risk of infestation

Survival of parasite eggs for more than 1 year in the environment => **CUMULATIVE RISK**

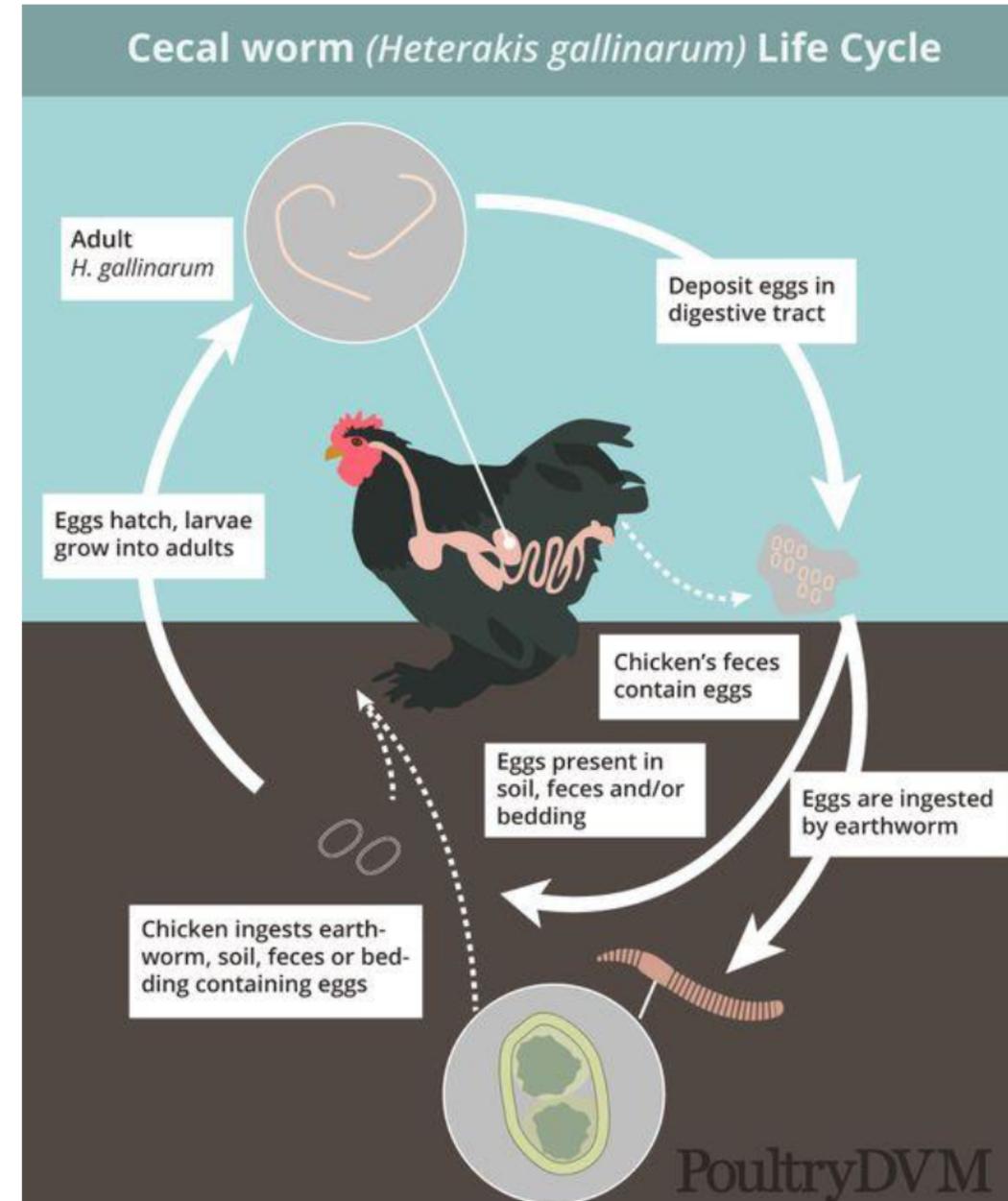
## Direct infestation :

- Excretion of thousands of parasite eggs in droppings
- Environmental contamination
- Ingestion of soil => (re)infestation

## Indirect infestation :

Intermediate hosts:  
flies, earthworms,  
slugs, etc.

**NEED TO STOP THE CYCLE**



# Intestinal worms, a very real and often underestimated problem



## Observatory of helminth carriage in laying hens

2019 - 2023



64 organic laying hens farms  
Throughout France



**94% of farms infested**

*Ottmann et al. 2024*

18 organic laying hens farms  
In Germany



**100% of farms infested**

*Faiko Kaufmann et al. 2011*



# Major health problem for poultry and eggs

Their pathogenicity depends on the species, its location in the digestive tract and the parasite load.

**These worms can cause poultry to suffer from :**

- intestinal irritation and inflammation,
- diarrhoea,
- intestinal obstruction => migration into the oviduct (*Ascaridia - Piergili Fioretti et al. 2005*),
- reduced appetite => reduced absorption of nutrients
- reduced egg-laying, growth and increased CI
- contamination by *Histomonas*, *E. Coli*, *Pasteurella* and *Salmonella*,
- in extreme cases, mortality.



*Reperant et al. 2020, Pleidrup et al. 2014, Das et al. 2010, Sharma et al. 2018, Torres et al. 2019, Feyera et al. 2022, Skallerup et al. 2005, Hinrichsen et al. 2016, Dahl et al. 2002, Permin et al. 2006, McDougald, 2003, Chasfield et al. 2001*

# Major health problem for poultry and eggs

Their pathogenicity depends on the species, its location in the digestive tract and the parasite load.



- Colouring / shell fragility
- Nervousness, pecking
- Feed consumption
- Drop in egg laying
- Mortality

*Information collected from 300 organic laying hens farmers*

**Real impact on welfare, health, performance and egg quality**



# How do you manage them?

- **Initial monitoring** (pullets) **then routine monitoring** (coproscopies/necropsies)
- **Controlling intermediate hosts**
- **Deworming**
  - Adapt the frequency to the parasite's reproductive cycles (*recommendation : treatment every 6 weeks*)
- **Cleaning and disinfection of buildings and equipment**
- **Use of alternative solutions**

**96% of organic hens farms using alternative products (digestive stabilisers) are infested** (*Ottmann et al. 2024*)

**THERE ARE NO EFFECTIVE ALTERNATIVE SOLUTIONS !**



“ I use natural products to limit worms impact,  
but I'm sadly forced to use chemical dewormers ”

**If an infestation is detected, chemical anthelmintics are mainly used as 1st or 2nd-line treatment (95%)**

- Pest control products available for layers (laying phase)
  - 3 specialities,
  - 2 active ingredients (Flubendazole and Fenbendazole),
  - a single family ! (Benzimidazole)
- All with a waiting time of 0 days !
- In case of heavy infestation, repeat treatment possible 3 weeks after 1st treatment (if infest.)
- 1 to 5 chemical pest control treatments/batch => **on average 2 treatments/flock**



# Impact study on the downgrading of eggs following the use of a chemical anthelmintics



**Before the new regulation**

**With the new regulation**

140-160€ for 2 chemical anthelmintics

7 days of downgrading

5 250€ of loss of earnings

**X 35**

## References

Organic eggs weight (61g)

Laying rate (80%)

Organic egg prices 2780€/T

Free-range eggs price 1500€/T



# The economic impact is already considerable, what about tomorrow?

Based on an income reference of 1 minimum wage for 6,000 hens  
(€18,400 /flock)

- 7 days of downgrading: loss of €5,250 on €18,400 = **29% of income**

**THE ECONOMIC IMPACT IS SUCH THAT, IN CASE OF INFESTATION, FARMERS  
DELAY THE APPLICATION OF CHEMICAL ANTHELMINTICS  
When they have the means**

*Does not include simulation of reduced performance !!!  
(laying, mortality, additional downgrading linked to shell quality...)*



# A few comments from the farmers surveyed

*“ It is very difficult to manage without synthetic allopathic treatment - you have to wonder whether we need to protect our animals ????? **This is an infringement of the animal welfare.** ”*

*“ **No effective alternative products** when the pressure is present, I **systematically** end up with a chemical treatment that has an economic impact on me.” (resignation, distraught)*

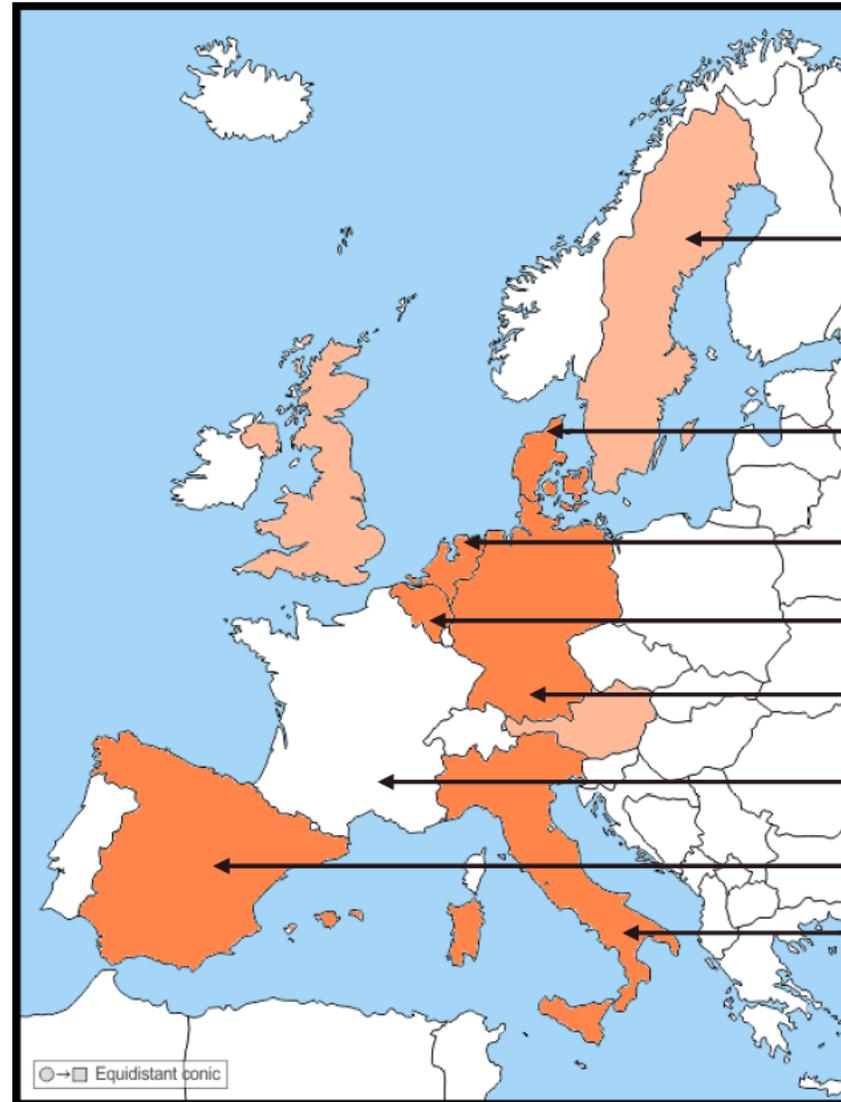
*“After using alternative products for the first 2 flocks, the conclusion is clear: **no lasting effectiveness and exorbitant cost.** Without eradicating the adult worms, reproduction is exponential and increasingly unmanageable with alternative products. The downgrading of eggs by synthetic products discourages the use of these products, but does not encourage the use of alternative products either, since they are ineffective and costly in spite of everything. So animal welfare is being undermined, just as production is. This heretical regulation is plunging us into real dilemmas and economic difficulties.”*



# Current situation in Europe : very high infestation rates

Declarations from **poultry experts** (veterinarians and producer organisation managers in organic egg production) interviewed in European countries with important organic egg productions

**Sweden**  
**Denmark**  
**Netherlands**  
**Belgium**  
**Germany**  
**Spain**  
**Italy**



## Infestation rates

- 100%
- 85-100%, increasing since the last 10 years
- 85-100%
- 100%
- 85-100%
- 94%
- 85-100%
- 100%



# Preventive strategy

Surveyed countries	Monitoring methods	Preventive measures: cleaning and disinfection procedures
Germany	<ul style="list-style-type: none"> <li>• <b>Regular coproscopies:</b> to monitor infestation</li> <li>• <b>Necropsy:</b> high infestation level suspected</li> </ul>	Poultry house C&D
Belgium (Wallonie)	<ul style="list-style-type: none"> <li>• <b>Occasional coproscopies:</b> veterinary control visits every 5 weeks</li> </ul>	Poultry house C&D before the hens arrival (peroxyde)
Denmark	<ul style="list-style-type: none"> <li>• <b>Regular coproscopies:</b> every 8-10 weeks</li> </ul>	Floor burning/liming, dry cleaning, changing the sand on the 10 first meters outside
Spain	<ul style="list-style-type: none"> <li>• <b>Coproscopy or necropsy :</b> high infestation level suspected</li> <li>• <b>Necropsy:</b> at the end of the flock (82-89 weeks)</li> </ul>	Liming, dry or wet cleaning
Italy	<ul style="list-style-type: none"> <li>• <b>Regular necropsies:</b> at each veterinary check-up</li> </ul>	Litter acidification and C&D
Netherlands	<ul style="list-style-type: none"> <li>• <b>Regular coproscopies for some farmers:</b> infestation monitoring every 3 weeks</li> </ul>	Dry cleaning, sometimes with floor burning and organic detergents
Sweden	<ul style="list-style-type: none"> <li>• « <b>Health control program for birds</b> » : coproscopy at 25-27 weeks, then every 8 weeks</li> </ul>	Floor disinfection after each flock on vet's prescription (Interkokask)
France	<ul style="list-style-type: none"> <li>• <b>Occasional coproscopies:</b> to monitor infestation</li> <li>• <b>Necropsy:</b> high infestation level suspected</li> </ul>	Poultry house and free-range area C&D

## Changes in strategy following the new regulation

Overall, more alternatives tried (very varied, mainly to maintain intestinal health), but **a shared observation of ineffectiveness**

**There are few to no effective means of prevention apart from C&D !**



# Curative strategy

Same antiparasitic treatments used in all countries (flubendazole & fenbendazole) when the infestation rate is considered **too high** and that there are **symptoms**.

## Changes in strategy following the new regulation

**General reduction of chemical treatments due to their delayed application** (appearance of symptoms), may fluctuate depending on demand for organic eggs

Global reduction of chemical treatments for economic reasons, but with a **general deterioration of animal welfare, health and performances !**

Surveyed countries	Frequency of chemical treatments
Germany	
Belgium (Wallonie)	<ul style="list-style-type: none"> <li>• <b>2 treatments for pullets</b></li> <li>• Approximately <b>1 treatment every 3-4 months</b></li> </ul>
Denmark	<ul style="list-style-type: none"> <li>• <b>1 treatment at 19-21 weeks</b> (to lower the pressure)</li> <li>• Approximately <b>1 treatment per year</b> (pressure too high)</li> </ul>
Spain	<ul style="list-style-type: none"> <li>• Application varies widely from region to region</li> </ul>
Italy	<ul style="list-style-type: none"> <li>• No more than <b>3 treatments per year</b> authorised</li> </ul>
Netherlands	<ul style="list-style-type: none"> <li>• <b>2 treatments</b>, at 22-23 weeks and at 60 weeks</li> </ul>
Sweden	<ul style="list-style-type: none"> <li>• <b>1 to 2 treatments</b> during the production period</li> </ul>
France	<ul style="list-style-type: none"> <li>• <b>Mean of 2 treatments per flock</b> (1 to 5 maximum)</li> </ul>



# Regulation management

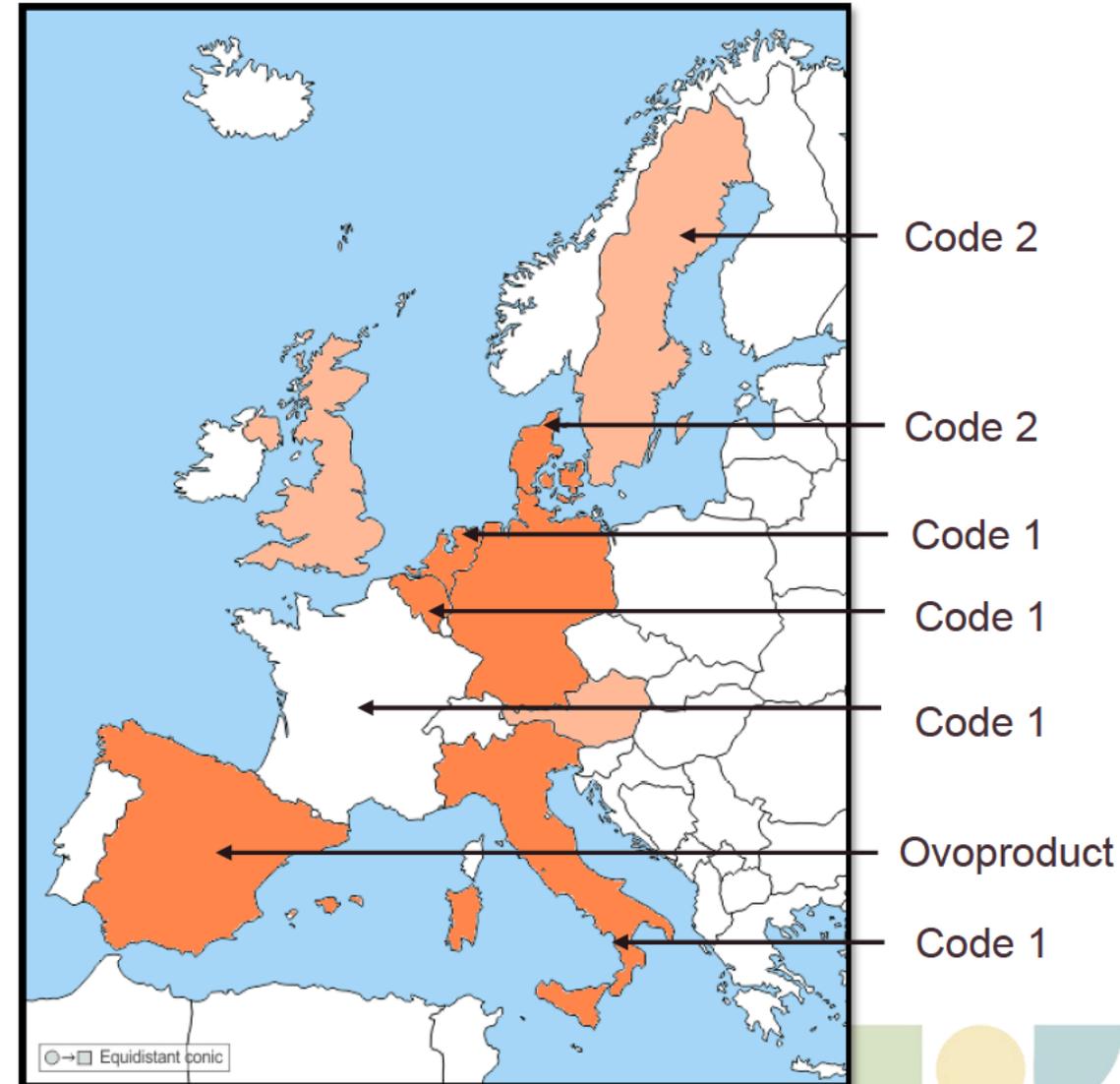
The egg downgrading varies between countries  
(contracts, egg stock and demands and poultry sheltering)

## Consequences of the downgrading following the new regulation

Downgrading of **7 to 9 days**

Economic losses **always borne by the farmer**, with estimates from the field of around **€5,000 for 2 treatments on 6,000 hens** (Denmark, Netherlands, Wallonia, France).

A real problem, a systematic pressure, with significant impacts from an animal health, welfare and economic point of view, and one that is **worrying all European countries with shared observations and experiences !**



# Conclusion

## The consequences

### for animals :

- worms: a real health problem, affecting all farms and all countries
- hens infested earlier and more heavily (pullets outside / infestation+++)
- degradation of welfare and health (risks of over-infections)

### for farmers :

- technical deadlock because there are few means of control and no effective alternative solutions,
- obligation to use chemical antiparasitics, but late treatments when impacts already visible
- considerable loss of income,
- fewer treatments because farmers don't have the financial resources,
- lack of understanding of regulations (waiting time=0 day)
- discouragement



# Conclusion

## The consequences

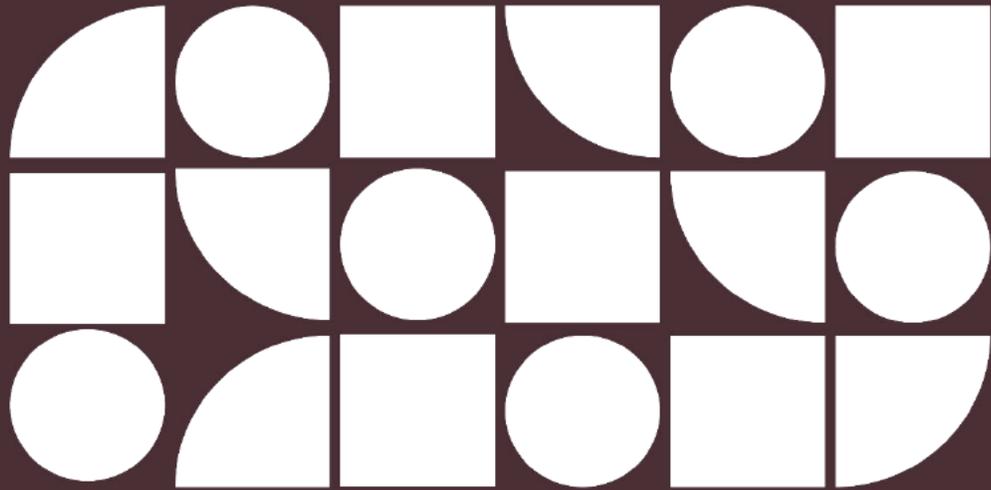
### for consumers :

- no better protection under the regulations because the waiting time is already 0 days
- increased health risk
  - over-infections
  - parasites in eggs

### for the image of organic farming :

- increased health risk
- over-infections
- parasites in eggs
- cessation of producers' activities





## Acknowledgements



Thank you to the farmers and producers who responded to the survey, and to all the European contacts interviewed !

