Poultry Vets
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Raising slow-growing broilers in Holland and Italy: differences and similarities.

The Dutch point of view.

Content.

- Poultry Vets a Dutch private practice.
- Dutch market transition.
- Sanitary issues slow growing broilers.
  - Ventilation.
  - IB (vaccination challenges).
  - REO.
  - Marek.
  - Gumboro.
- Conclusions and take home message.

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Poultry Vets a Dutch private practice.

- 3 locations spread across the Netherlands.
  - 1 location in Germany.
- 13 veterinarians.
  - Specialists in poultry health.
- 7 supportive staff.

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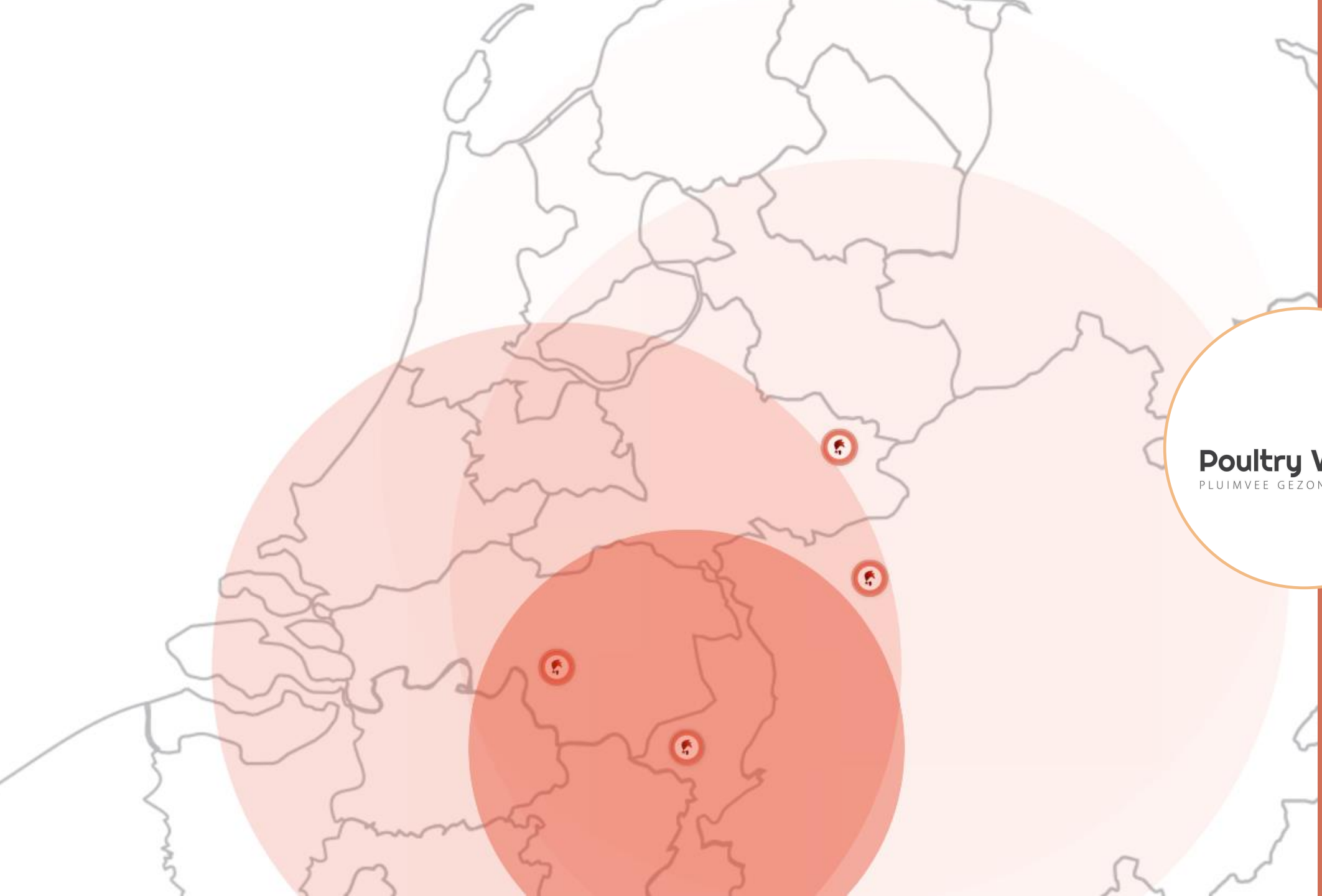

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Transition in the Dutch Broiler market “Exploding Chicken campaign” NGO.

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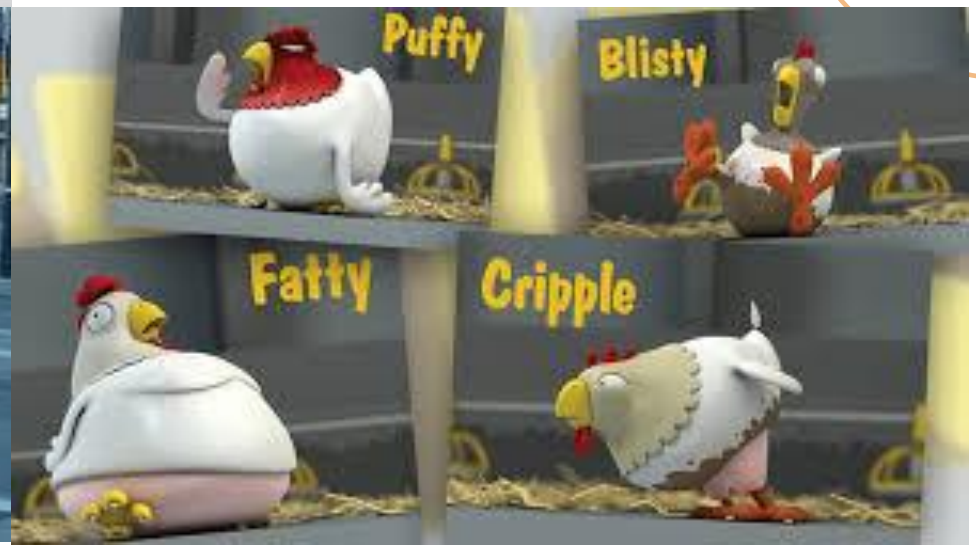

Transition of the Dutch Broiler market.

2007	2012	2013	2014	2016	2021
• Animal welfare starts “Better live” quality label.	• NGO “Wakker dier” starts “exploded chicken campaign.	• Grocery stores announce “Chicken of tomorrow”	• Competition authority prohibit “Chicken of Tomorrow”	• Every Supermarket chain has his own draft.	• Almost all supermarkets in the Netherlands shift to Better live fresh meat.

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- *Now due to this transition the broiler meat production in the Netherlands degreased 40% (410 million broilers 2015 -> 312 million in 2022).*
- *2023: 50% of the Dutch broilers are “1 star BLQ”.*

Chicken of Tomorrow (produced until 2022)

- Slow growing breed.
- 16 /m2 or 12 /m2.
- 49 days cycle.
- Maximum Daily weight gain <50gr / 45gr.

Price: 8 Euro/kg filet

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GOED NEST KIP
WWW.PLUKON.NL

Better Life * brand of NGO “Animal Protection”.

Beter Leven ★★★ DIEREN BESCHERMING

	Traditional	★☆☆ 1 star	★★☆ 2 stars	★★★ 3 stars
Indoor space	18-20 / m2	12/ m2	13 / m2	11 / m2
slower growing breed	no demand	✓	✓	✓
Distraction material	no demand	Obligated, grane spreading,bales of straw	obligated, grane spreading, bales of straw	obligated, grane spreading, bales of straw
Outdoor space	no demand	obligated, Winter garden (>20% of the total house surface	Obligated, free range 1 animal / m2	obligated, free range 1 animal / 2 m2

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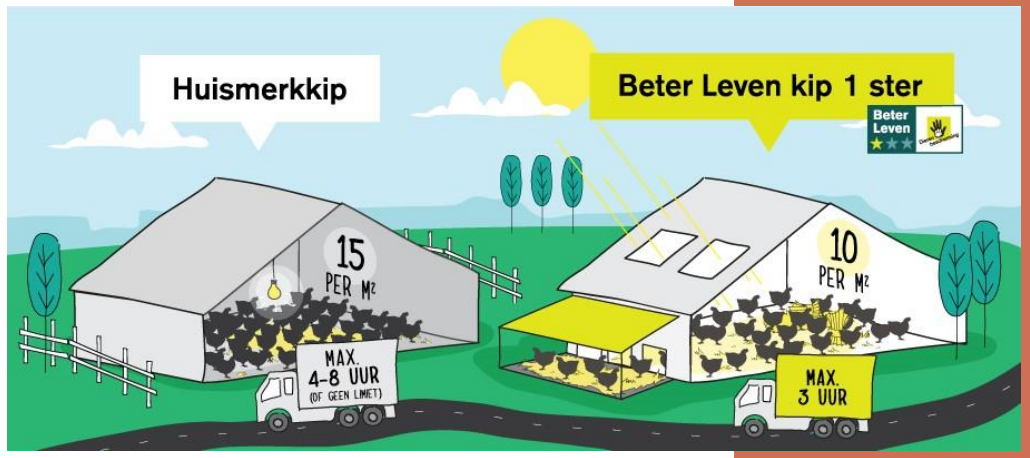
★☆☆ 1 Ster | ★★☆ 2 Sterren | ★★★ 3 Sterren

1 star better life brand

(BLK, 50% of Dutch broiler production in 2023)



- 25 kg/m2 (9,2/12 per m2).
- Winter garden outdoor space. *Price 14 euro/kg filet*
- Daylight.
- Slow growing breed: Hubbard 757 / Ross Ranger gold.
- Straw bales.
- Grain (daily 2gr pro animal).
- Only for the Dutch market.
  - Production challenges.
  - Optimised carcass yield.

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Sanitary Issues Slow Growing Broilers.

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Management: Nutrition problems.

- Restricted daily weight gain / maximum 25kg/m2.
- Breed with more potential.
  - Especially in the wintertime.

Protein level start feed 19,2%, feed 1: 19,2 and 10% wheat, feed 2 20,3% and 20% wheat, end feed 20,3% and 30% wheat.

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Management: Ventilation.

- Winter garden non heated outdoor space.
  - Dutch winters and falls: cold, windy and wet.
- Total different ventilation pattern.
-

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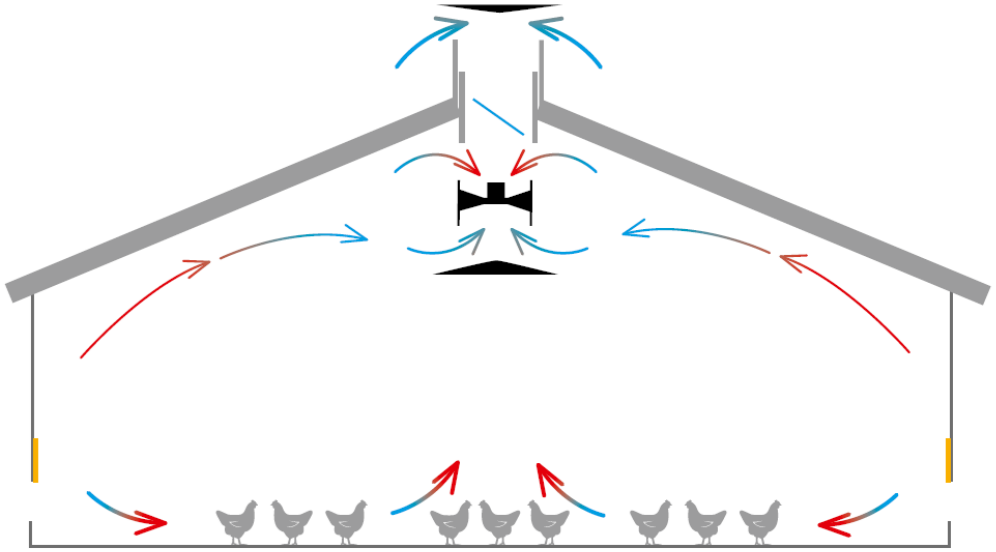
IB virus (vaccination challenges).

- Most found strains IB qx and IB 4-91.
- Due to suboptimum ventilation (mostly during winter/fall)
  - Shutter openings of the winter garden: function as inlet.
  - Optimum: even pressure system (when shutters are open).



IB virus (vaccination challenges).

- Normal vaccination strategy.
  - First day prime vaccination.
  - Booster vaccination d14 on farm.
- First day vaccination hatchery/on farm.
  - Good manageable.
- Booster vaccination d14 more challenging.
  - To much light (daylight windows/ventilators/inlet).
  - More anxious breed.
  - Less birds per square meter.

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Marek.

- Semi integrated market (cost efficient) *prox 6,5ct/animal*.
  - No Marek vaccination is normal practice.
  - Without any problems in 6 weeks lifecycle.

- First signs: a typical for Marek.
  - Botulisme like
  - Transient paralyse of the neck.

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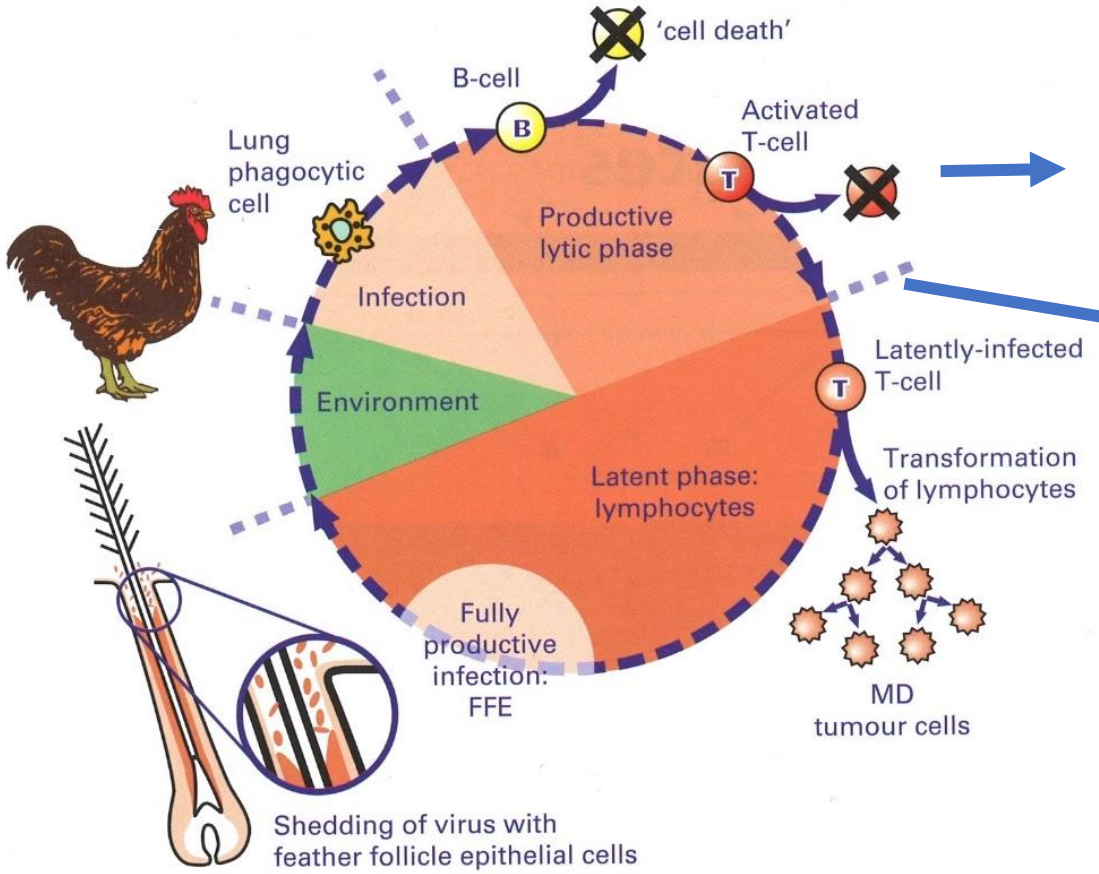
Marek.



Davison & Nair, 2004

Death of immuuncells: sensitive for pathogens.

- **Less efficient cycles.**

Infiltrates of immuuncells in nerves and brains:

- **Paralyses**
- **Microscopic visible**

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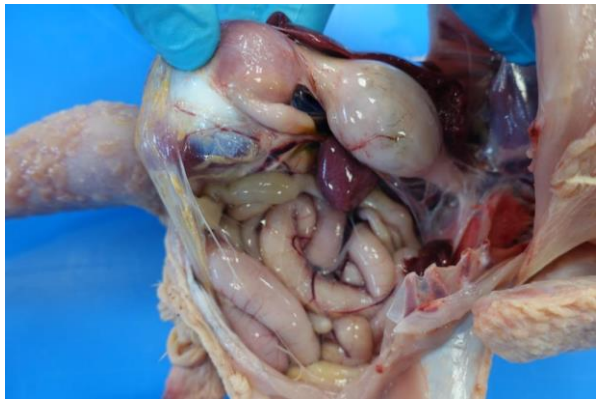
Marek.

- Most problems:
  - in poultry dense area’s.
  - Multi-age farms.

Source GD Deventer

- Immunosuppression (less efficient cycles).

- Tumours:
  - Spleen.
  - Gizzard.
  - skin.



Source GD Deventer

- Transient paralyses neck.

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Marek.

- Shedding 2-3 wks after infection.
  - Life long carriers.
  - Vehicle carriers (beetles).

- Virus in dust very persistent.
  - Infectious:
    - several months at 20-25 degrees
    - Years at 4 degrees.

- Vaccination strategy in ovo (HVT and or Rispens)
- Cleaning and disinfection!!!
    - Herpes virus: persistent environment.

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Source: Koos van der Spek nieuwe oogst.

Marek.

- In search of an early diagnosis.
  - Dust test PCR end of cycle.
    - Problem/ No problem houses.
- No quantitative differences problem/no problem.
  - SB1 Marek virus found (50% of tested houses).
    - Relevance is unsure.
- Diagnosis: virus isolation, microscopic lesions.

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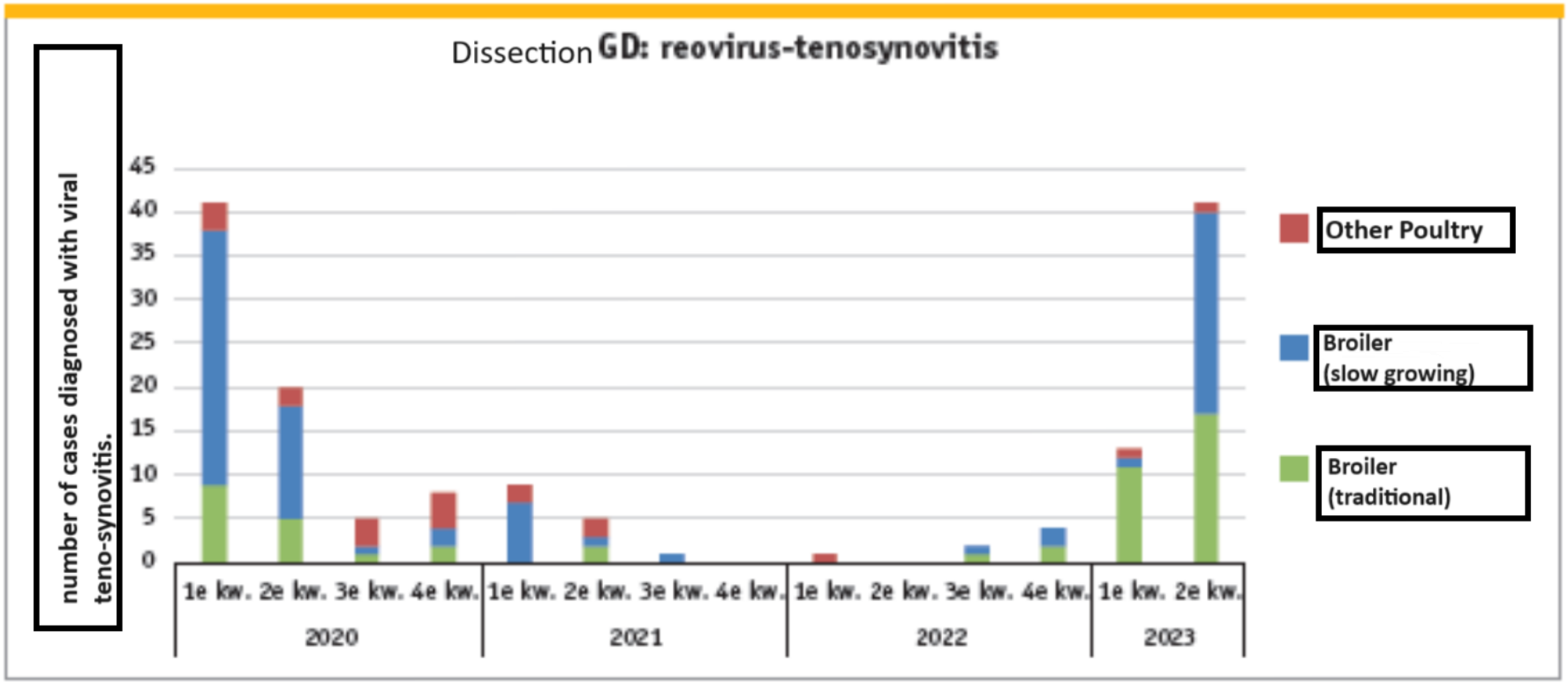
REO virus.

- Last year revitalization of confirmed REO diagnosis.
  - More in slow growing breed.



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Reo virus.

- Clinical signs
  - Early in cycle:
    - Uneven Herd.
    - More leg problems (spread leg).
  - Very low feed intake.
  - Tenosynovitis.
- Immunosuppression.

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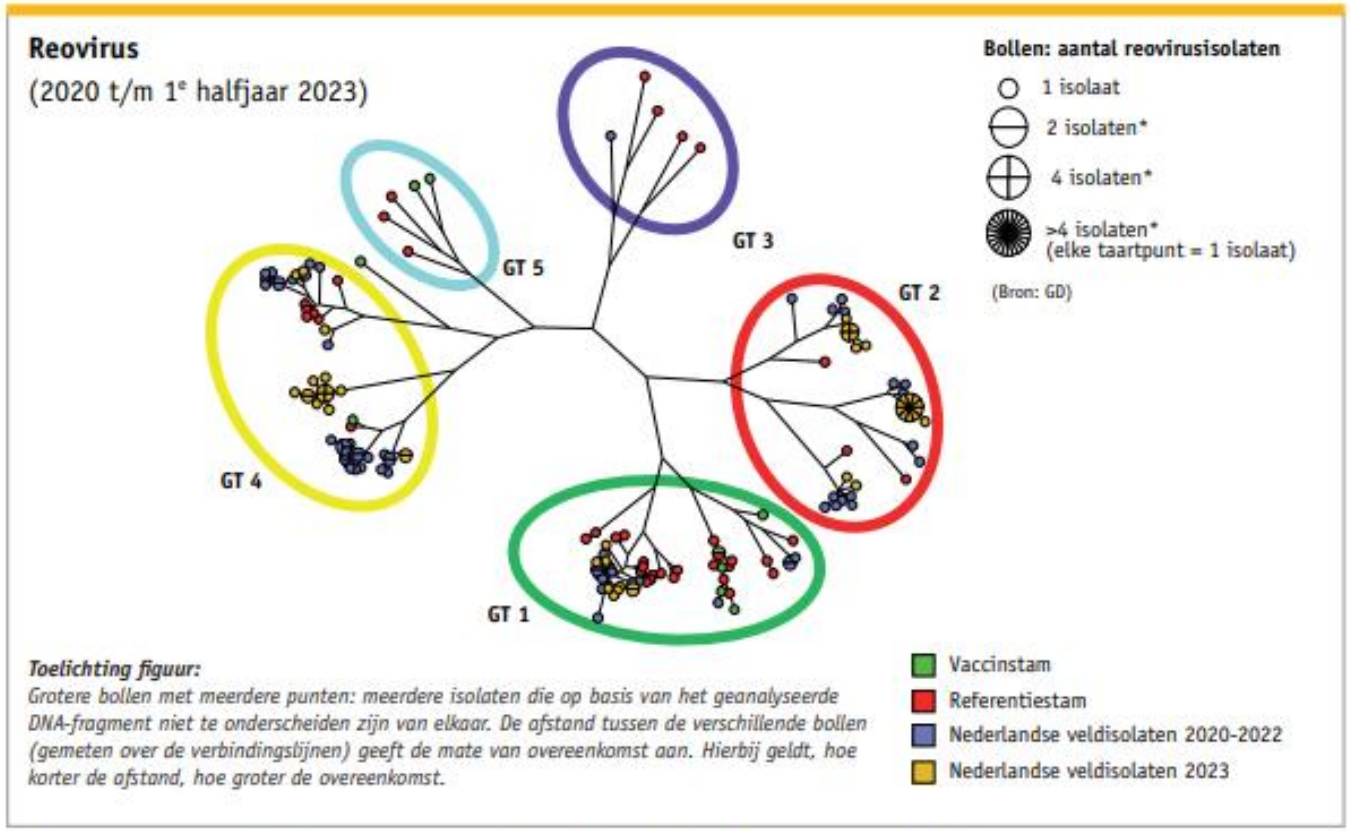
Reo virus.



Figuur 2. Fylogenetische boom van reovirussen aangetoond in 2020 t/m het 1e halfjaar van 2023 (Bron: GD)

Source GD-Deventer

Fylogenetic tree:

- Dutch Reo isolates 2020-first half year 2023.
- Green: vaccin isolate.
- Red: Reference strain.
- Blue: Dutch field isolates 2020-2022.
- Yellow: Dutch field isolates 2023.

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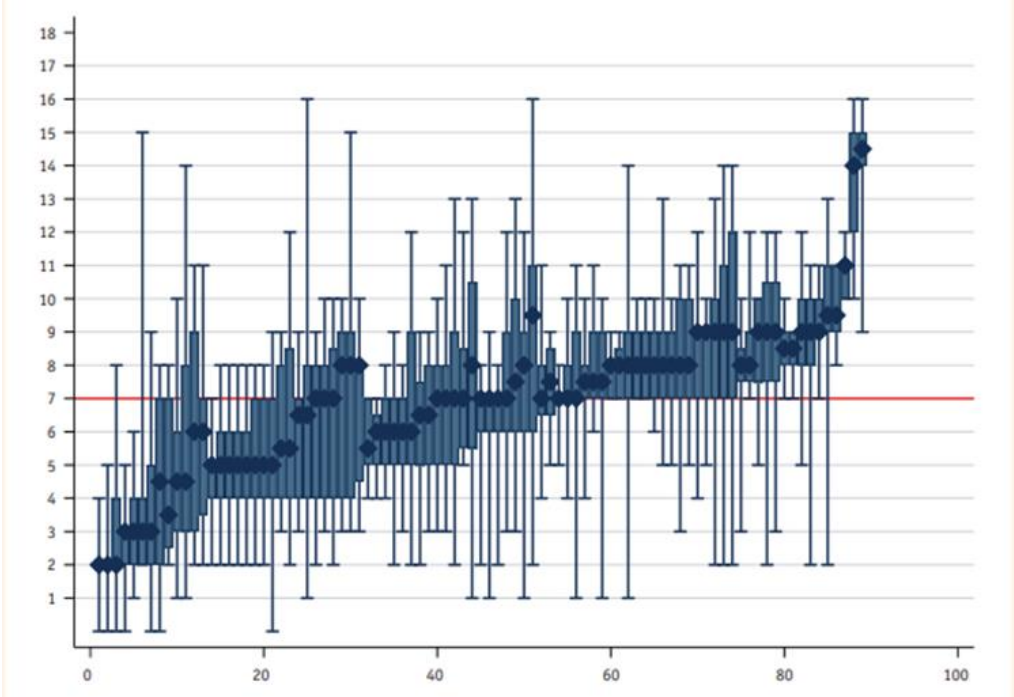
Reo virus.

- Reo virus titres broiler breeders.

  NL first half year 2023, end of rear.
  - For a good maternal AB protection in offspring:
  - 75% of the titres should be titre group 7 or higher.



Source GD Deventer

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Reo virus.

- Maternal Antibodies.
  - Mean titre is too low.
  - Very wide spread of titres.
- Genotype 4, cross protection unknown.

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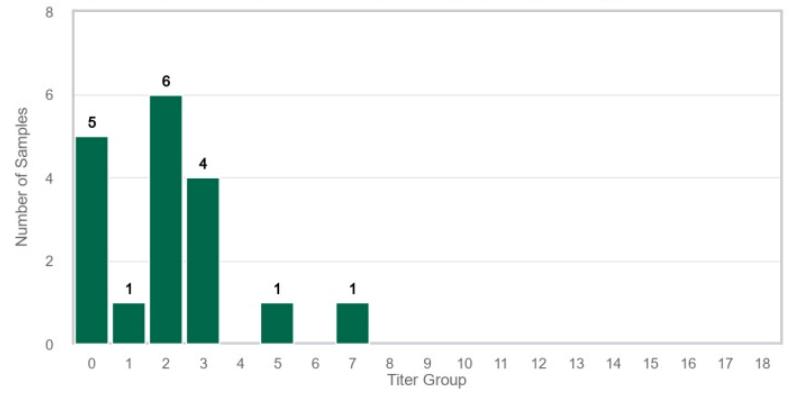
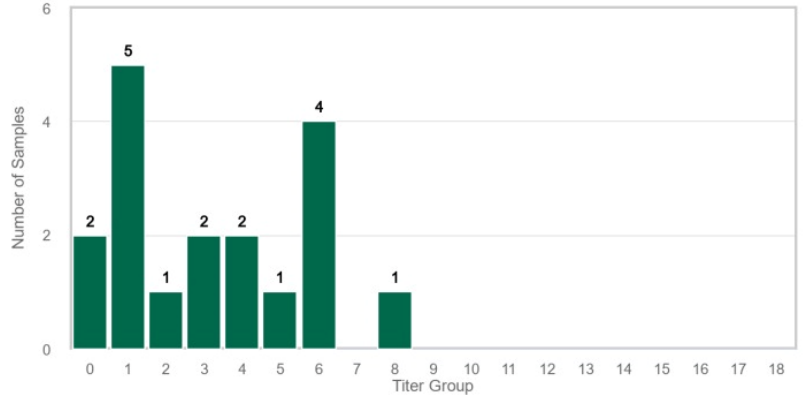
Parameter: antibodies against avian Reovirus
Method: Avian Reovirus Antibody Test Kit indirect ELISA [BioChek], rev. 05 (a)



Mean	Minimum	Maximum	STDDV	CV %
2739	799	8223	1793.61	65.49

Parameter: antibodies against avian Reovirus
Method: Avian Reovirus Antibody Test Kit indirect ELISA [BioChek], rev. 05 (a)



Mean	Minimum	Maximum	STDDV	CV %
3970	1109	10430	2541.83	64.03

Reo virus.

- Cleaning and disinfection.
- Degreasing most important step.
  - Caustic soda/ good foaming agent.
  - Warm water.
- Disinfection: formaldehyde.

VIR- check:
5 different persistent viruses tested.
Cloacal swab 7 days old chick (10 samples).
Indicator cleaning and disinfection.

ONDERZOEKSRESULTATEN:

Nr	Identificatie	Onderzoek/Methode	Resultaat	Hoeveelheid (10log-titer)
001	stal 1	Chicken astrovirus	Aangetoond	1,59
001	stal 1	Avian nephritis virus-3	Niet aangetoond	
001	stal 1	Reovirus	Aangetoond	0,63
001	stal 1	Rotavirus A	Niet aangetoond	
001	stal 1	Rotavirus D	Niet aangetoond	

VIR-check score : 16
Relatieve score : Groen

Conclusie : De VIR-check-score geeft aan dat de reiniging en desinfectie van het bemonsterde hok grondig en succesvol was. Gemiddeld vertonen koppels vleeskuikens met een groene VIR-check-score de hoogste daggroei.

Reo virus Conclusions en solutions.

- Conclusions:
  - Mostly found in slow growing broilers.
    - One semi-integration most effected.
  - Genotype 4 virus.
  - Titers day old chicks varying.
- Solutions:
  - Vaccination Broiler Breeders.
    - Titre check, 3 vaccination strategy.
  - Cleaning and disinfection hatchery.
  - Contamination management hatchery.

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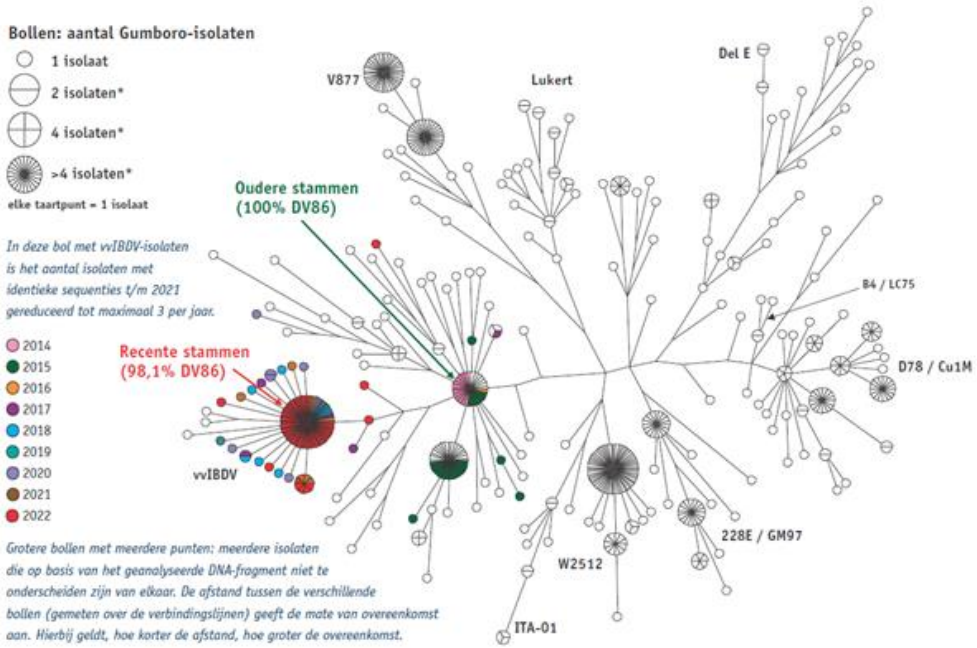
Gumboro disease.

- Since 2014 genetic changes in vv IBD field strains NL.
- Since 2017 DV86 vvIBD field strain.
- Most recent 98,1% DV86 vv IBD field strain



Fylogenetic tree vv IBD
Source GD Deventer.

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Gumboro disease.

- new vvIBD strain acts like subclinical strain.
  - Due to prolonged severe Bursa damage.
  - No acute mortality.
- Breakthrough titer very high (>Elisa 1000)
  - The virus can cause an infection before life vaccine is applicable.

- Conclusion:
  - Cleaning and disinfection is crucial.
    - So no virus is already present in the house by chick placement

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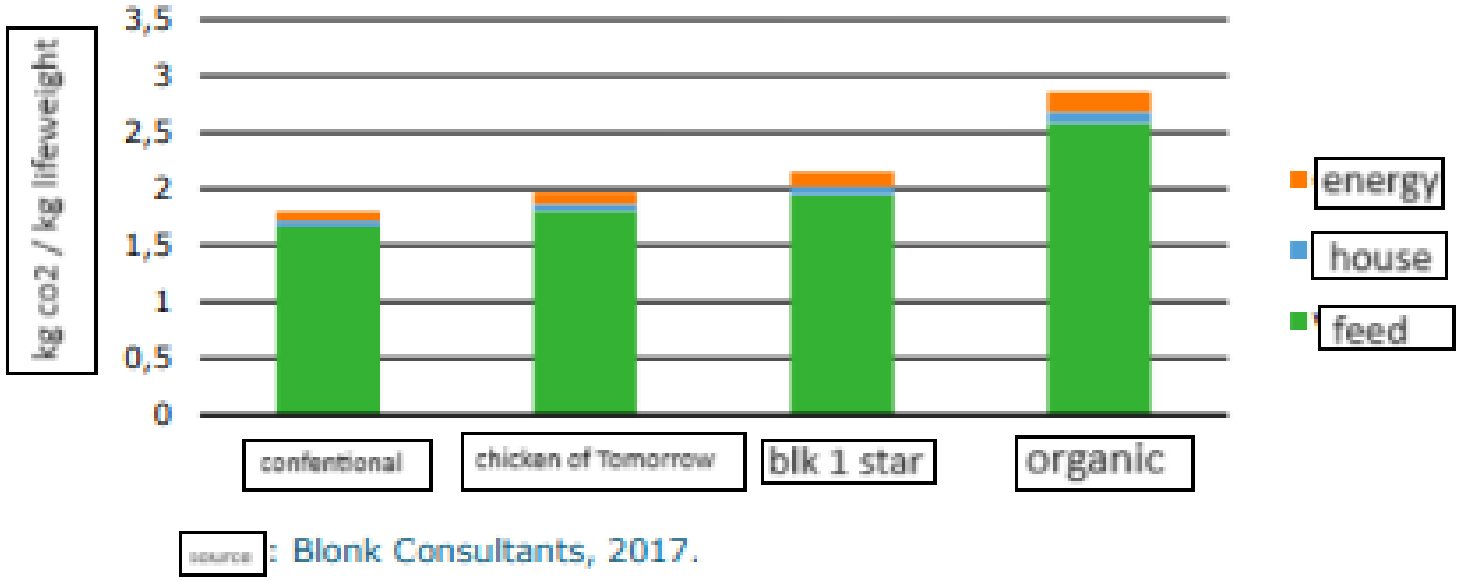
Conclusions and take home message.

- Carbon dioxide footprint different systems.



source: Blonk Consultants, 2017.

- Soya use is the negative factor in poultry meat.
  - Land Use Change: a very high factor for Soya (Brazilian soya, 20 years calculation greenhouse gas effect caused by deforestation).

Conclusions and take home message.

- Slow growing market functions only if there is no choice for consumer.
- NGO’s are very powerful / sector has forgotten to positive promote themselves?
- Proactive approach sector is needed in order to avoid imposed concepts. Which often are not better for the welfare of the animal and the farmer/sector.

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Grazie mille!

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