Chicken Anaemia

"CAV - The hidden menace"

S.A. Lister, 1996

Signs

Clinical disease[1]

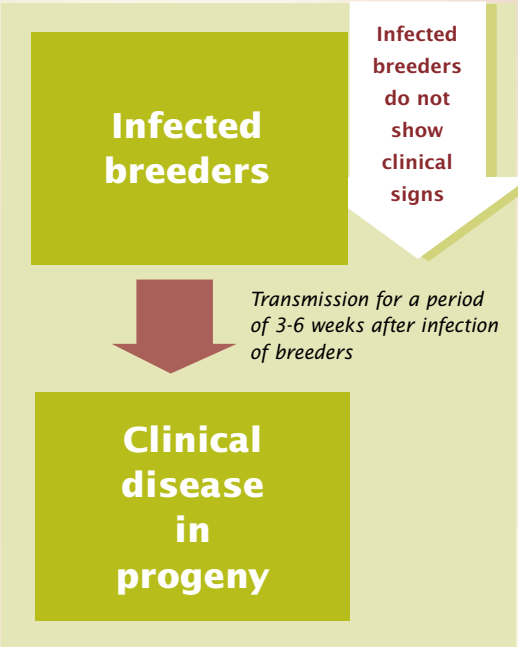
- Occurs relatively infrequently
- Birds susceptible *up to* 2-3 weeks of age
- 10-20% mortality
- Growth retardation
- Anaemia

Subclinical disease

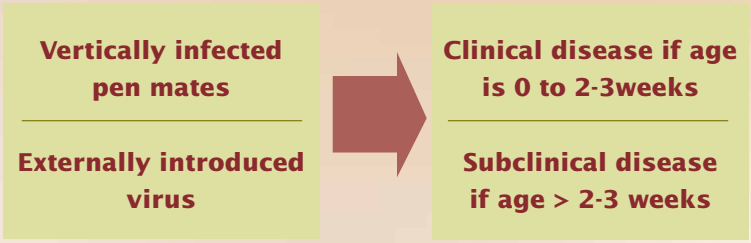
- Occurs commonly
- Birds susceptible *from* 2-3 weeks of age
- Severe economic losses[2]:
  - 13% lower net income
  - 2.5% lower weight
  - 2.0% higher FCR (feed conversion rate)

Transmission

Vertical transmission



Horizontal transmission



Objective of vaccination

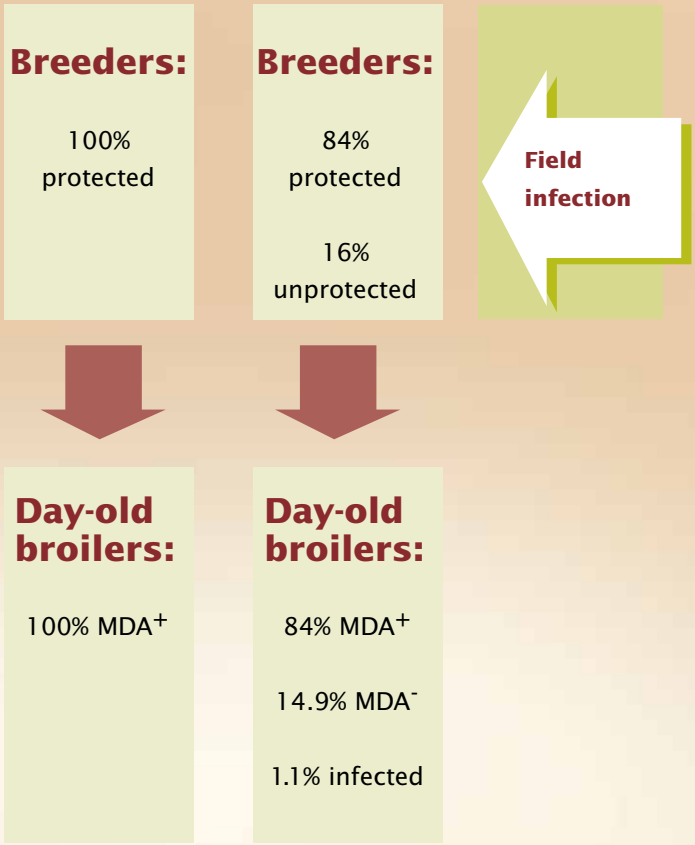
Provide breeders with high antibody level:

- to prevent vertical transmission to progeny
- to provide progeny with high MDA (Maternally Derived Antibody) level to protect against clinical and subclinical disease

Chicken Anaemia

Complete protection necessary

Complete protection of breeders required



Field observation

- Broilers from a partially protected and a fully protected breeder flock were monitored
- Partially protected breeder flock suffered from a CAV field infection
- 1.1% of the offspring from partially protected flock estimated to be clinically infected through vertical transmission of 7% of the unprotected breeders [3,4]
- 90% CAV positive serum samples in the infected broilers at 46 days of age indicates horizontal spread
- Results show a 13% higher production figure of uninfected broiler flock as compared to infected broiler flock

Conclusion

Control of CAV infection in broilers must be aimed at producing complete protection of broiler breeders

	Uninfected broiler flock	Infected broiler flock	Difference
Body weight (g)	2,186	2,036	+150
FCR	1.68	1.77	-0.09
Mortality (%)	3.6	5.0	-1.4
Production figure	273	237	+36

Nobilis® CAV P4

Solid protection by high antibody titres

Minimum protective log_2 VN titre against CAV is 8

CAV log_2 VN antibody titre at day of challenge	Virus re-isolation
3	+
4	+
5	+
7	+/-
8	-
9	-
10	-
12	-

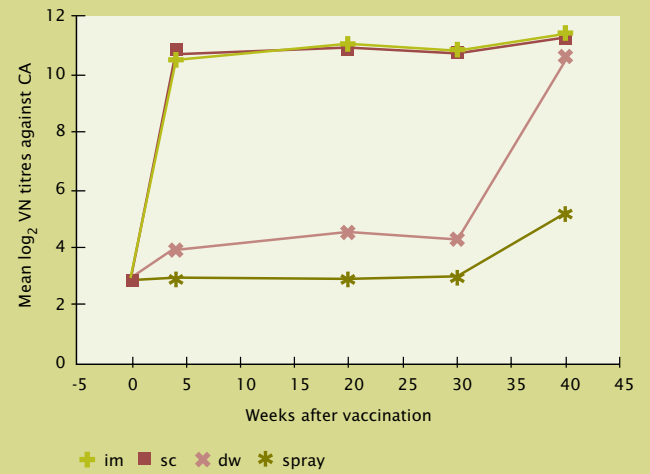
Laboratory trial

- 8 groups of chickens of 78 weeks of age possessed log_2 virus neutralising (VN) antibody titres against CAV ranging from 3 to 12
- Birds were challenged with virulent CAV and individual faecal samples were taken regularly to establish the presence of CAV
- Absence of CAV in the faeces means that CAV is not excreted through the eggs either[3]

Conclusion

To prevent vertical transmission of CAV during field exposure, breeders should have at least log_2 VN antibody titre of 8.

Nobilis CAV P4 provides early and long lasting high antibody titres



Field trial[5]

- 65 breeder flocks
- Nobilis CAV P4 vaccination between 6-18 weeks of age by different routes
- Log_2 VN antibody titres against CAV were determined regularly

Conclusion

Breeders vaccinated with Nobilis CAV P4 by i.m. or s.c. injection, showed uniformly high antibody titres within 4 weeks of vaccination in contrast to drinking water or spray vaccinated breeders

Nobilis® CAV P4

Easy to combine

Combination with Nobilis Reo 1133

Vaccine	Mean log_2 VN titres against CAV	Mean log_2 VN titres against Reo
Nobilis CAV P4	9.5	-
Nobilis CAV P4+ Nobilis Reo 1133	9.8	4.3
Nobilis Reo 1133	-	4.5

- SPF chickens were i.m. vaccinated with Nobilis CAV P4, live reovirus vaccine Nobilis Reo 1133 or a combination of both vaccines
- 6 weeks post vaccination CAV and Reovirus antibody titres were determined

Conclusion:

Nobilis CAV P4 and Nobilis Reo 1133 can be combined without interference

Combination with inactivated Nobilis vaccines

- A group of breeders was vaccinated by i.m. route with inactivated vaccine Nobilis Reo + IB + G + ND to which reconstituted live Nobilis CAV P4 was added
- One group only received Nobilis Reo + IB + G + ND
- 3,5 weeks after vaccination log_2 VN titres against CAV, reovirus, IB, Gumboro and ND, were determined

	Mean antibody response to individual vaccine components in log2 VN titres				
	CAV	Reo	IB	Gumboro	ND
Nobilis Reo + IB + G + ND	3.0	7.3	5.2	15.6	8.8
Nobilis Reo + IB + G + ND combined with Nobilis CAV P4	11.6	6.9	6.5	15.5	8.7

Conclusion:

Nobilis CAV P4 added to an inactivated Nobilis vaccine will provoke high antibody levels against CAV without interference

Nobilis® CAV P4

The first *attenuated* live vaccine against CAV

Individual administration of attenuated live vaccine

+ After individual application (i.m. or s.c.) with attenuated Nobilis CAV P4, early uniformly high antibody titres can be measured

− After field infection with CAV or mass application (by drinking water or coarse spray) of a live unattenuated CAV vaccine, not all breeders will respond with equally high CAV antibody titres

Vaccination schedule

Vaccination possible from 8 weeks of age until 4 weeks before onset of lay

Description

Nobilis CAV P4 is an attenuated live freeze-dried vaccine against chicken anaemia. Each dose contains at least 3.0 $\log_{10}$ $TCID_{50}$ of CAV strain 26P4.

Indication

Nobilis CAV P4 is indicated for the active immunisation of healthy chickens against chicken anaemia.

Administration

The vaccine should be administered by intramuscular or subcutanaeous injection or by the wing web method. Before application by injection, the vaccine should be reconstituted in Intervet's diluent Dilavia. The dose is 0.2 ml. Before application by wing web method, the vaccine should be reconstituted in Intervet's diluent Unisolve.

Presentation

Nobilis CAV P4 is available in vials of 1000 doses.

References
1. Lister SA, 1996. World Poultry 7: 61-63
2. McNulty MS et al, 1991. Avian Dis 35: 263-268
3. Hoop RK, 1992. Avian Pathol 21: 493-501
4. Yuasa N and I Yoshida, 1983. Nat Inst An Health Quarterly 23: 99-100
5. Steenhuisen W et al, 1994. Proc Int Symp on IBD and CAA: 482-497

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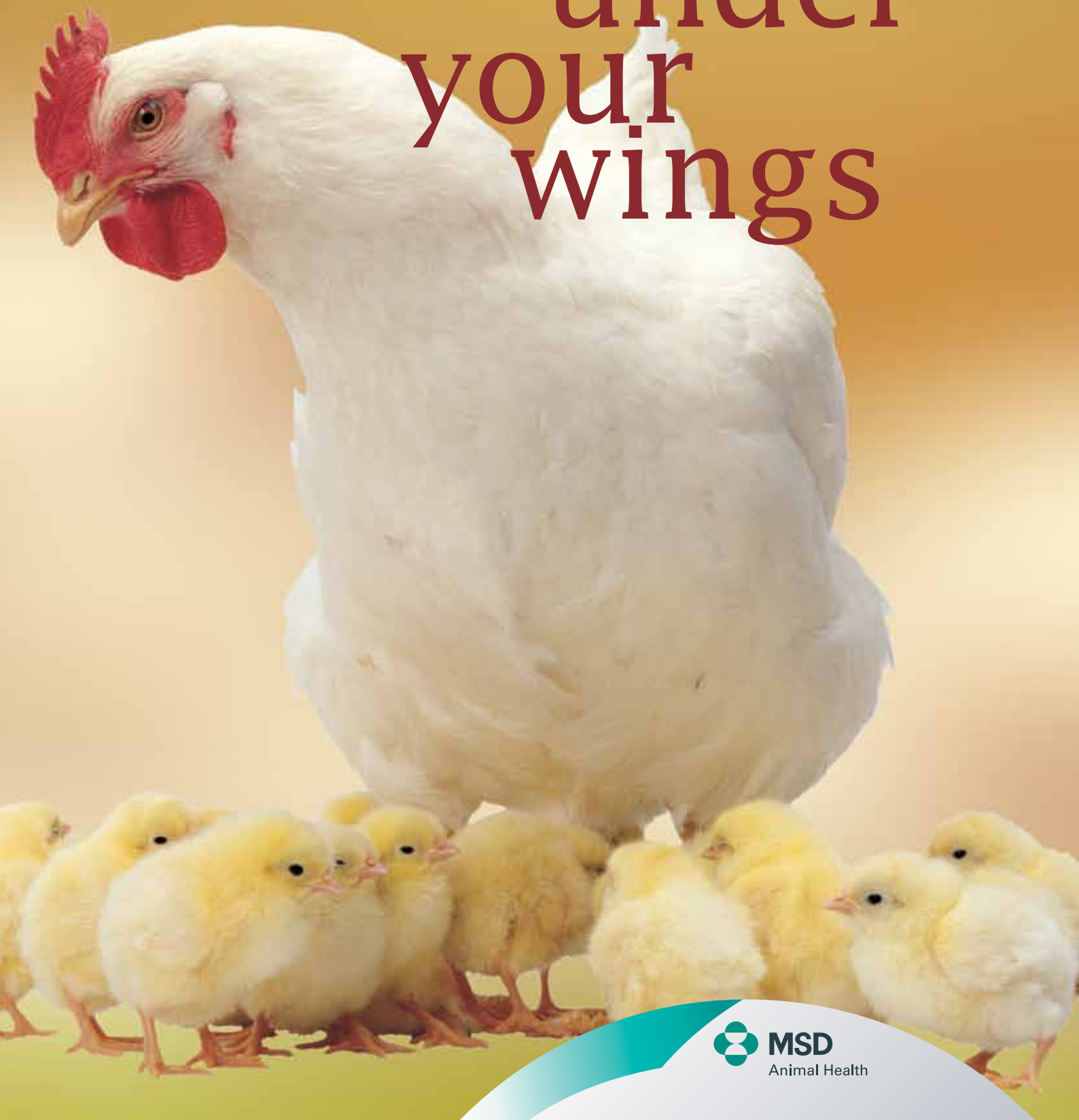
Nobilis® CAV P4

The first *attenuated* live vaccine against CAV

Take them under your wings



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