

Nobilis[®] REO Inac & Reo+IB+G+ND

Maternally derived uniform protection with
a high-titre count and proven longevity.



It's what they're born with that matters.

Protectotype



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 **MSD**
Animal Health

Respiratory enteric orphan (reo) Virus in Chickens

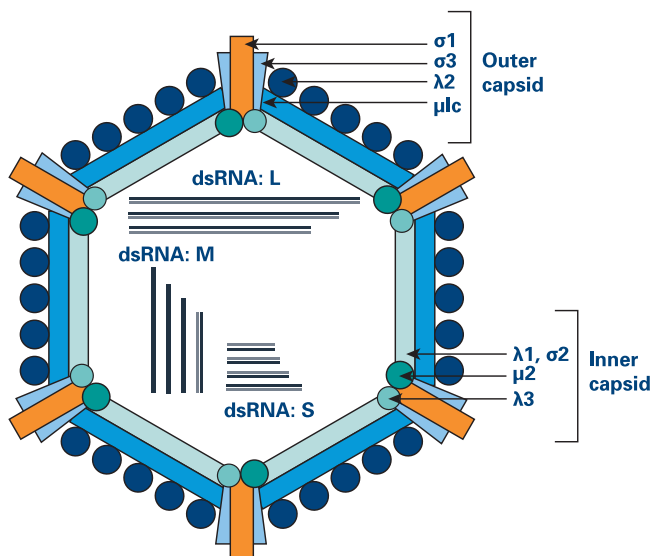
Various disease patterns

Avian reoviruses have been associated with:

- Tenosynovitis (viral arthritis)¹
- Malabsorption syndrome¹
- Diarrhoea and stunting¹
- Femoral head necrosis²
- Pale bird syndrome³
- Leg problems⁴
- Immunosuppression⁵
- Increased mortality⁷



Tenosynovitis (viral arthritis)

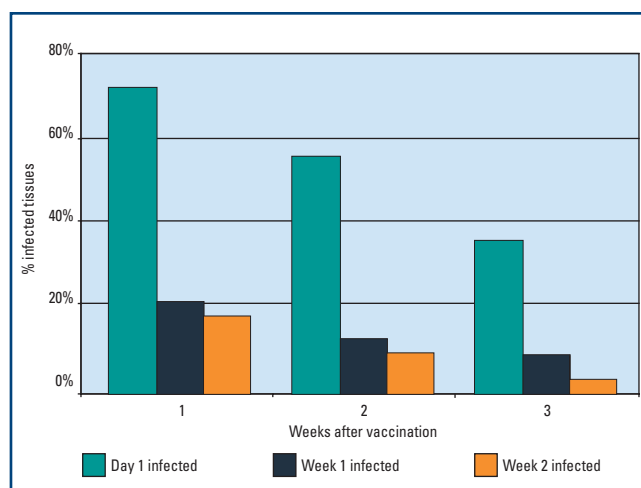


Malabsorption in broilers

Young birds more susceptible

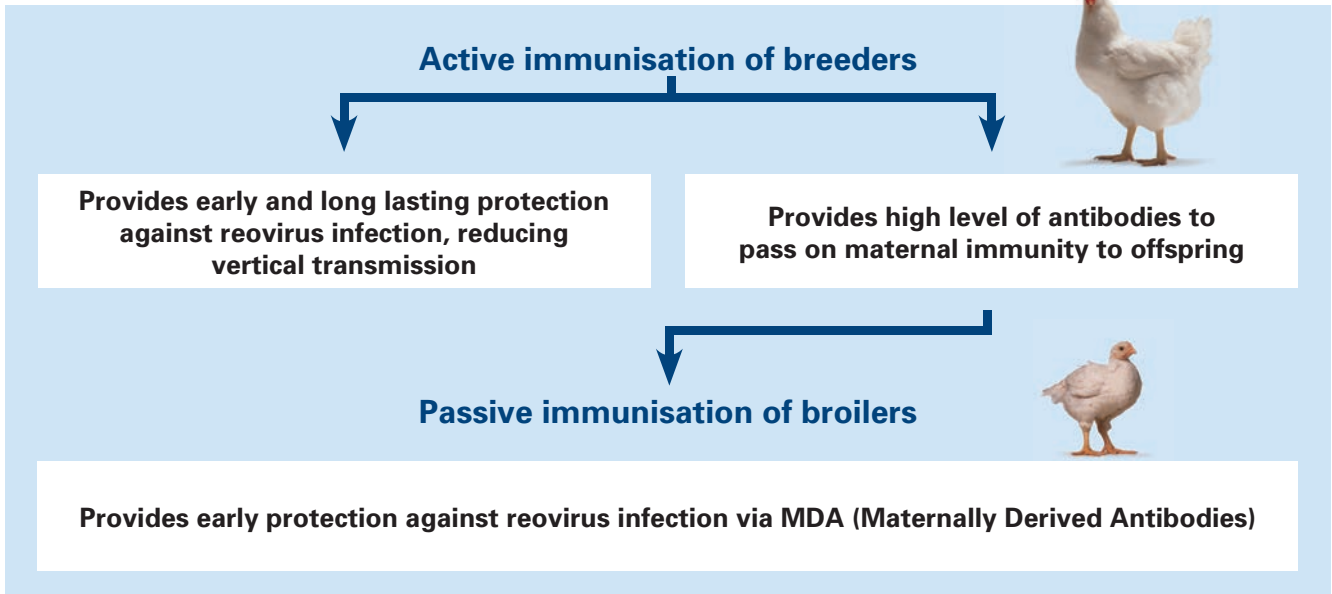
Laboratory trial⁶

- 3 groups of SPF chickens were infected with reovirus strain 1733 at 1 day, 1 week and 2 weeks of age, respectively
- At 1, 2, and 3 weeks after infection, tissues were analysed for reovirus
- Results clearly show that chickens infected at day 1 are more susceptible to reovirus infection than older chickens
- Therefore the progeny need high and uniform maternal antibodies to be protected during the critical susceptible period of life



High & uniform MDA level for early protection

Vaccination to protect breeders and progeny against reovirus infection



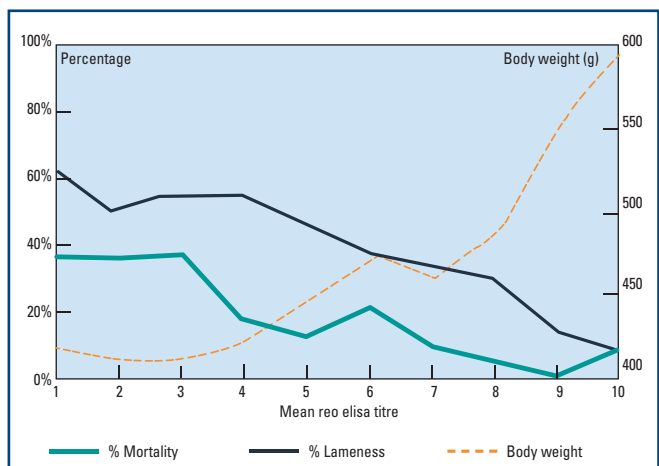
Reo: a matter of titres - the higher the better

Laboratory trial⁷

- Broilers with different levels of MDA at hatch were challenged at day 1 with a virulent field strain of reovirus
- Mortality, lameness and body weight were monitored at 22 days of age

Conclusion

As MDA concentrations increase, protection based on % mortality, % lameness, and body weight improves



Achieving high & uniform antibody titres in breeders

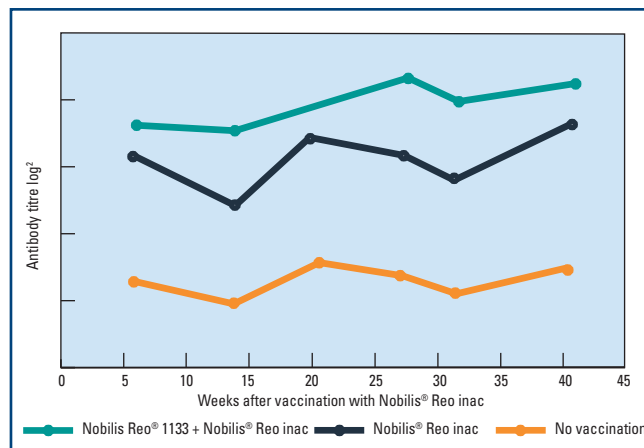
The best program is live priming with Nobilis® Reo 1133 followed by a boost vaccination with Nobilis® Reo inac

Laboratory trial

- One group of breeders was primed at 6 weeks of age with Nobilis® Reo 1133 and boosted at 18 weeks of age with Nobilis Reo inac
- One group of breeders was vaccinated at 18 weeks of age with Nobilis® Reo inac only

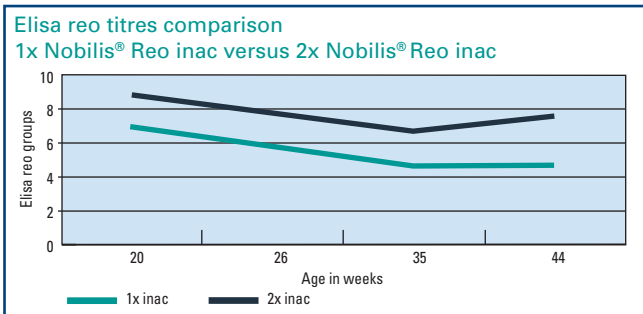
Conclusion

In breeders primed with Nobilis® Reo 1133, the Nobilis® Reo inac booster provides longer lasting, higher and more uniform antibody titres than in birds not previously primed



Field trial

- Live priming + inac vs live priming + inac + inac



Results of a Dutch integration comparing 1x and 2x Nobilis® Reo inac

Vaccination	Age in weeks	Average Elisa titre	% Animals with titre ≤ 2
1x	20	7.1	22
2x	20	9.0	6
1x	26	5.7	24
2x	26	7.8	9
1x	35	4.9	36
2x	35	6.8	10
1x	44	4.9	30
2x	44	7.7	4

Conclusion

Under strong reo infection pressure the reo control in progeny improved after adding an additional Reo-inac vaccination in the breeders optimizing titre levels and uniformity

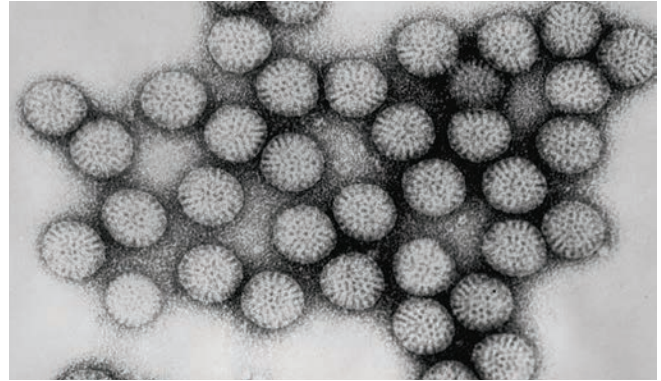


Optimum protection against the reovirus challenge

Demonstration of Reo inac's efficacy against the reovirus challenge.

Challenge experiment

- 3 week old SPF chickens were i.m. injected with one of 6 different oil emulsion reovirus vaccines
- Challenge by footpad inoculation with different reovirus strains, 4 weeks post vaccination
- Percentage protection and challenge index from 0-4 (0 = no signs; 4 = footpad swelling) were determined



The reovirus

Challenge strains	1733*		2408*		C08*		S1133**	
	Challenge Index	% protection	Challenge index	% protection	Challenge index	% protection	Challenge index	% protection
Nobilis® Reo inac (1733/2408)	1.4	87%	1.1	100%	0.4	100%	-	100%
1733	1.5	75%	0.8	100%	0.5	100%	-	60%
2408	1.6	75%	0.6	100%	0.9	100%	-	100%
S1133	2.3	83%	0.3	100%	0.0	100%	-	100%
C08	3.0	11%	0.9	100%	1.1	100%	-	87%
1733/2408/C08	2.3	45%	1.1	100%	0.7	100%	-	90%
Controls	3.7	0%	3.1	12%	2.6	33%	-	10%

*Malabsorption strain^{8,9} **Tenosynovitis strain¹⁰

Conclusion

Nobilis® Reo inac demonstrated the optimum protection against reovirus challenge



Good maternal antibody titres for better performance

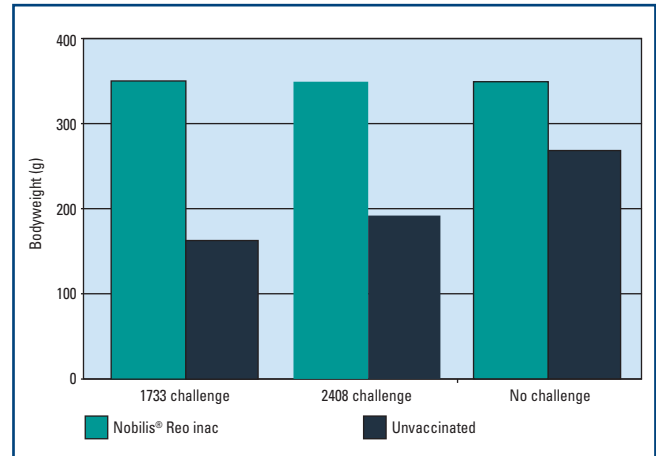
Better growth

Laboratory trial

- Progeny from Nobilis® Reo inac field vaccinated breeders (at 20-22 weeks of age) were challenged at day old with reovirus strain 1733 or 2408
- Both strains 1733 and 2408 are capable of stunting growth in chickens⁸
- Body weight was measured at 14 days of age

Conclusion

Passively conferred maternal antibodies induced by Nobilis® Reo inac prevented growth suppression caused by the 1733 and 2408 virus strains



Higher profits

Field trial

- Flock of 16,100 broilers from non-reovirus vaccinated breeders
- Flock of 21,200 broilers from reovirus vaccinated breeders (Nobilis® Reo 1133 at 9 weeks; Nobilis® Reo inac at 18 weeks)
- Breeders of the same age; broilers processed at the same age

	Un-vaccinated	Vaccinated	Difference
Weight (g)	1.869	1.986	+117
FCR	2.16	2.02	-0.14
Mortality (%)	4.83	2.76	-2.07
Condemnat. (%)	3.18	1.30	-1.88

Conclusion

Broilers from reovirus vaccinated breeders achieved better performance compared to broilers from non-reovirus vaccinated breeders



Breeder vaccination - the key to integrated reo control

For the active reo protection of breeders and the transfer of high and uniform maternally derived antibody titres to their broiler progeny

Vaccination of breeders;

- Prevents reo clinical signs in the breeders
- Reduces vertical transmission
- Induces high and uniform antibody titres in breeders
- Establishes high maternal immunity transfer to the progeny

Suggested vaccination schedule for breeders

REO PROGRAM	Reo 1133 priming	Reo Inac	Reo Inac
LIVE + 1x INAC Reo 1133 + Reo Inac	7-21 days	N/A	16-18 weeks
LIVE + 2x INAC* Reo1133 + Reo Inac + Reo Inac	7-21 days	8-10 weeks	16-18 weeks

* In case of heavy infection pressure it is recommended that 2 vaccinations with Nobilis® Reo inac are required; the first one at 8-10 weeks of age.



The MSD Animal Health reo portfolio - for solid reo protection

Nobilis® Reo 1133

Description:

Nobilis® Reo 1133 is an attenuated live freeze-dried vaccine against avian reovirus infection. Each dose contains at least $3.1 \log_{10}$ TCID₅₀ of reovirus strain S1133.

Indication:

Active immunisation of chickens against tenosynovitis (viral arthritis).

Administration:

The dosage is 0.2 ml per chicken. The reconstituted vaccine should be administered by subcutaneous injection in the back of the neck.

Presentation:

Nobilis® Reo 1133 is available in 1000 dose presentations.

Nobilis® Reo Inac / Reo+IB+G+ND

Description:

Nobilis® Reo inac is an inactivated oil emulsion vaccine against reovirus infections containing reovirus strains 1733 and 2408, each inducing at least $5 \log_2$ VN units per dose.

Indication:

Booster vaccination of breeding stock against avian reovirus in order to protect the progeny of the vaccinated birds against avian reovirus infections.

Administration:

The dosage is 0.5 ml per chicken. The vaccine should be administered by intramuscular injection in the thigh or breast muscle or by subcutaneous injection in the back of the neck.

Presentation:

Nobilis® Reo inac is available as single and combined vaccine (e.g. Nobilis® Reo+IB+G+ND) in 1000 dose presentations.

References

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For more information contact your local MSD Animal Health representative.

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Protectotype



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