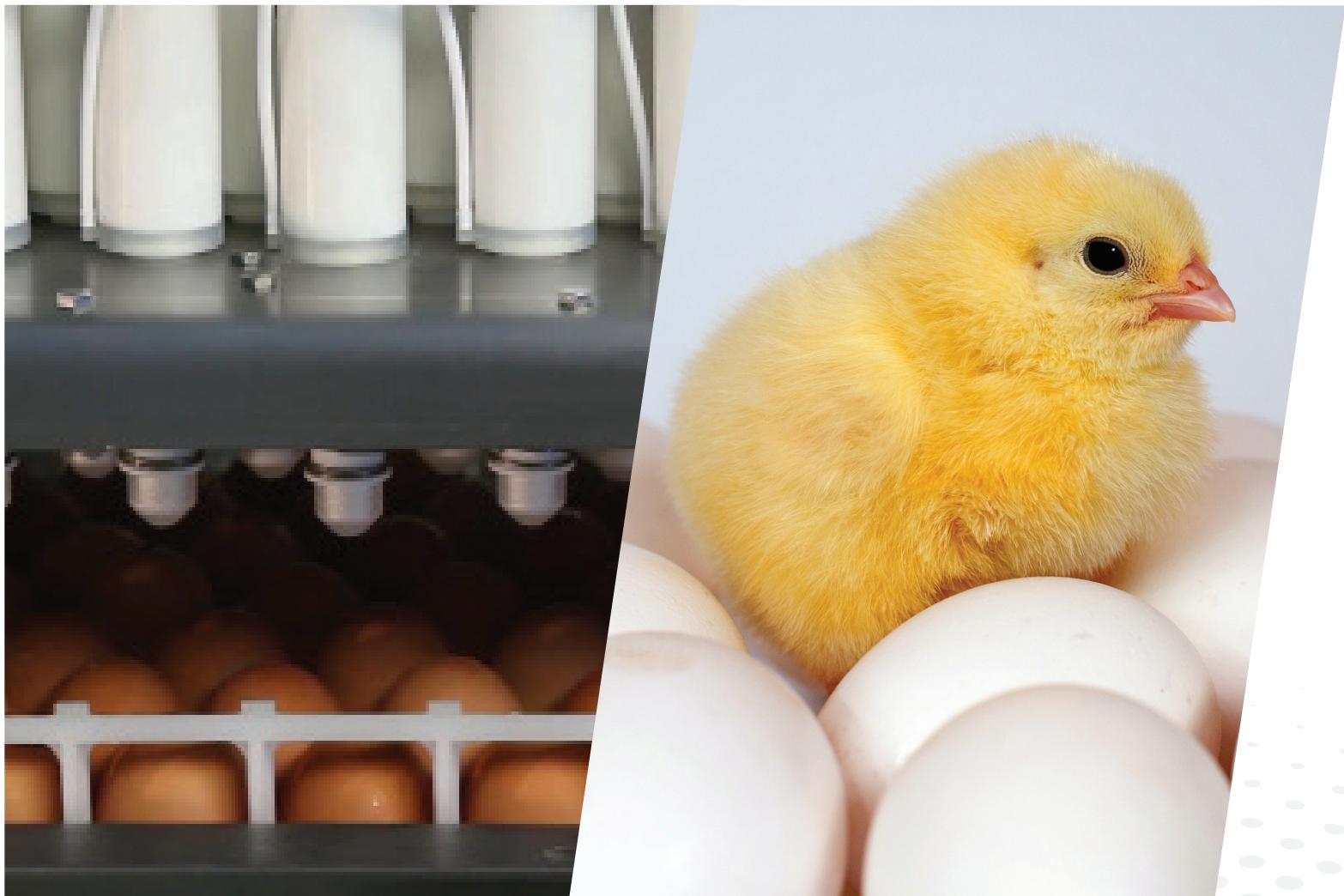




Live Gumboro Vaccine



An Evolution in IBD
Hatchery Vaccination

HEALTHY ANIMALS. HEALTHY FOOD. HEALTHY WORLD.®

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Infectious Bursal Disease (IBD) is a highly contagious viral disease of chickens that can lead to severe losses due to direct mortality, immunosuppression and secondary infections. The disease typically affects young chickens 1-6 weeks of age.

MB-1 is a live attenuated vaccine for Infectious Bursal disease, developed from the M.B. strain, adapted for *in-ovo* or subcutaneous (SC) injection at the hatchery

MB-1 is proven to be safe and highly effective against IBDV, in numerous laboratory trials as well as in protecting commercial flocks under diverse conditions and challenges

MB-1 Advantages

- MB-1 attenuation level enables the vaccine to successfully protect against vvIBD viruses and at the same time be safe
- MB-1 can be applied *in-ovo* at 18.5 days of incubation or by subcutaneous route at the 1st day of age
- MB-1 does not generate immunosuppression
- MB-1 adjusts to IBD maternally derived antibodies of the individual chick



Efficacy

1. Earlier onset of immunity compared to immune-complex and IBD recombinant vaccines.

MB-1 comparison study (Brazil 2017): IBD ELISA titers from commercial broilers vaccinated with MB-1 were compared to commercial broilers vaccinated with an immune-complex vaccine

MB-1 provided an earlier onset of immunity and higher antibody titers compared to the immune complex vaccines

IBD Elisa titers

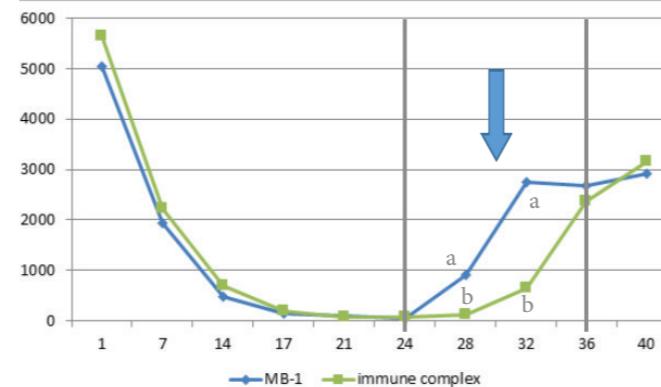
Age / days	MB-1	Immune-complex vaccine
1	5045	5634
7	1940	2231
14	482	691
17	132	193
21	90	72
24	50	65
28	898 a	112 b
32	2753 a	650 b
36	2668	2358
40	2911	3155

GMT, t-test P=< 0.05.

Different letters indicates statistical difference. (SR-MB-1 - E- 495/01)

ELISA titers

MB-1 registered an earlier seroconversion vs. the immune-complex vaccine, resulting in at least 4 day earlier onset of protection to the flock



2. Earlier identification of MB-1 vaccine strain in the targeted immune organs by PCR (Brazil 2017)

Age / days	MB-1 (%)	Immune-complex vaccine (%)
24	33.33	0.00
28	100.00	33.00
32	100.00	100.00
36	100.00	100.00
40	100.00	83.33

At 24 days of age the M.B. strain was identified in 33.33% of the samples followed by positive identifications in 100% of the samples up to 40 days of age.

The immune-complex vaccine strain was identified 4 days later, at 28 days of age in 33% and onwards up to 100% of the tested samples.

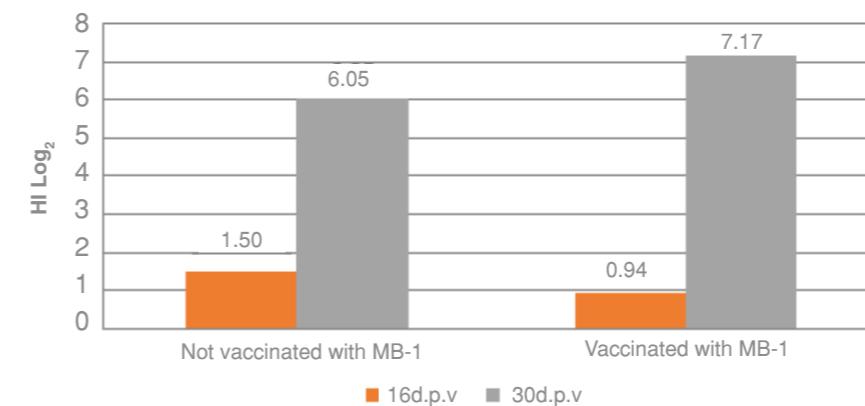
Safety

MB-1 does not interfere with the immune response to other vaccines

Commercial broilers were divided into 2 groups, the first group was vaccinated with MB-1 and the second group was not vaccinated and used as a positive control group. Both groups were vaccinated at 1d of age with live Newcastle V.H. vaccine by coarse spray.

MB-1 vaccine does not interfere with the immune response to NDV- V.H. strain vaccination

Newcastle disease virus HI titer



Reff. Phibro's file: SR-MB-1 Efficacy 01

MB-1 is safe, and can be used for the immunization of healthy layers, breeders and broiler chickens

Convenience

Either applied *in-ovo* at 18.5 days of incubation or by subcutaneous injection route at the 1st day of age, the same selected vaccination schedule will fit all flocks, in every location, all year round.

The hatchery is a superior environment for the vaccination crews to enhance the vaccination process. Better coverage leads to better protection and consequently to enhanced health and productivity of the flock.

MB-1 provides reliable and convenient IBD protection

- Flexibly adjusts to IBD maternally derived antibodies
- Single dose protects for the lifetime of the bird
- Hatchery controlled vaccination process
- Protects against all forms of the IBD virus: Classic, variant and very virulent
- Four day earlier onset of protection compared to immune-complex vaccines
- Proven to be safe and highly effective against IBDV
- Cost-effective

Storage

MB-1 should be stored between 2°C to 8°C



TAbic® family – TAbic® V.H., TAbic® IBVAR206 and TAbic® IB Var, TAbic® H-120 and TAbic® M.B.

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