



Innovax[®]-ND: Effective Against a Strong Newcastle Disease Challenge In the Middle East

Introduction

Newcastle Disease (ND) challenge in the Middle East is severe. It can result in mortality rates in broilers of 45 to 50% and cause a significant drop in egg production in commercial egg layers and broiler breeder flocks. The disease is normally controlled with live, inactivated or a combination of both live and inactivated ND vaccines.

A study was conducted on a Middle East commercial layer farm that failed to achieve expected peaks between 25 to 30 weeks of age due to a severe challenge with ND. The peaks of farms in this region fell below expected levels by up to 30% despite an excellent ND vaccination program consisting of inactivated ND at day 1, day 38 and day 60, plus live **NOBILIS[®] ND CLONE 30** at day 7, day 14 and day 28. The farm chosen for the study did not

suffer such low peaks, but flocks tended to peak below desired levels due to the endemic ND challenge.

For the study, one house was vaccinated with **INNOVAX-ND** (recombinant HVT-ND vaccine) instead of inactivated ND at day 1, and **INNOVAX-ND** was followed by one **NOBILIS ND CLONE 30** vaccination at day 14 and one inactivated ND at 15 weeks of age. The matched house on the same farm was given the control program of three live and three inactivated ND vaccines. Performance parameters were compared.

MATERIALS AND METHODS

The trial was conducted in two houses of a six-house farm with open-sided housing and floor-reared pullets. Twenty thousand (20,000) Hyline W36 pullets were placed in each house. The vaccination protocol is outlined in Table 1.

SUMMARY OF KEY POINTS

-  The flock vaccinated with Innovax-ND achieved a 2% higher peak of egg production compared to the control vaccination protocol, despite serological evidence of ND challenge.
-  Over the 54-week monitoring period, the Innovax-ND flock produced four (4) more eggs per bird.
-  The weekly mortality was reduced from 0.20% per week in the controls to 0.10% per week in the Innovax-ND flock.
-  The feed consumption in the Innovax-ND flock was 3 grams less per bird per day compared to the control flock: a total savings of 1.134 kg/bird during the 54-week monitoring period.
-  The Innovax-ND flock required fewer vaccinations against ND and yet produced a higher profit of USD 17,000 from 20,000 birds compared to hens vaccinated with the standard live and inactivated ND vaccination protocol.

Table 1 Vaccination Protocol

Age (Days)	Innovax-ND Test	Control
1	Innovax ND + Nobilis® Rismavac Nobilis IB 4/91, IB Ma5 (spray)	Nobilis Influenza H9N2 + ND Inactivated Nobilis IB 4/91, IB Ma5 (Spray) Nobilis Rismavac + CA 126 HVT
4	Coccivac-D®	Coccivac-D
7	Nobilis REO 1133	Nobilis REO 1133
14	Nobilis ND Clone 30 (Eyedrop) + Nobilis Influenza H9N2	Nobilis ND Clone 30 (Coarse Spray)
18	Nobilis Gumboro D78	Nobilis Gumboro D78
28	Nobilis Gumboro D78	Nobilis Gumboro D78
30	Nobilis IB Ma5	Nobilis IB Ma5 + ND Clone 30
38	Nobilis Gumboro D78	Nobilis Gumboro D78
55	Nobilis IB Ma5	Nobilis IB Ma5 + ND Clone 30
60	Nobilis AE + Pox Nobilis Influenza H9N2	Nobilis AE + Pox Nobilis Influenza H9N2+ND
70	Nobilis IB 4/91	Nobilis IB 4/91
85	Nobilis IB Ma5	Nobilis IB Ma5
105	Nobilis IB+ND+EDS Nobilis Influenza H9N2 Nobilis ILT	Nobilis IB+ND+EDS Nobilis Influenza H9N2 Nobilis ILT

The houses were monitored for egg production and peak production level, and for feed consumption and weekly mortality through 54 weeks of age. Serology was monitored at day 1 and at weeks 2, 3, 4, 8, 16, 23, 25, 30 to demonstrate that the usual ND challenge was present in these flocks as they approached peak production.

RESULTS

A four-fold rise in HI serology at 23 weeks of age, continuing through 30 weeks of age verified that the flocks were challenged with ND.

The **INNOVAX-ND** flock consumed less feed, produced 4 more eggs per bird and peaked 2% higher than the control flock. Production parameters are summarized in Table 4.

The total feed savings for the **INNOVAX-ND** flock amounted to 1.134 kg/ bird, for a total of USD \$9000 for the **INNOVAX-ND** flock through 54 weeks of age.

Four additional eggs per bird at USD \$0.10/egg produced a total extra profit of \$8000 through 54 weeks of age.

Table 1 Vaccination Protocol

	House 1 INNOVAX-ND	House 2 Control
Feed consumption grams/bird/day	92	95
Feed saved per bird vs. control (USD based upon USD 400/MT FF)	USD 0.45	--
Egg Production Peak %	94	92
Mortality per week %	0.10	0.20
Eggs per bird vs. control	+4	--
Value of eggs per bird vs. control	+USD0.40/bird	--

The production parameters measured through 54 weeks of age produced an overall profit of USD \$17,000 vs. the control house. Fewer live and inactivated vaccines were required to achieve better protection against the effects of a strong ND challenge when Innovax-ND was a part of the program.