

A tojóállományok prevenciójának jövője: a legújabb generációs rekombináns vakcinák alkalmazása a keltetőben



Danuta Furmanek DVM tudományos és szakmai vezető - Európa
ESER régió, MSD AH

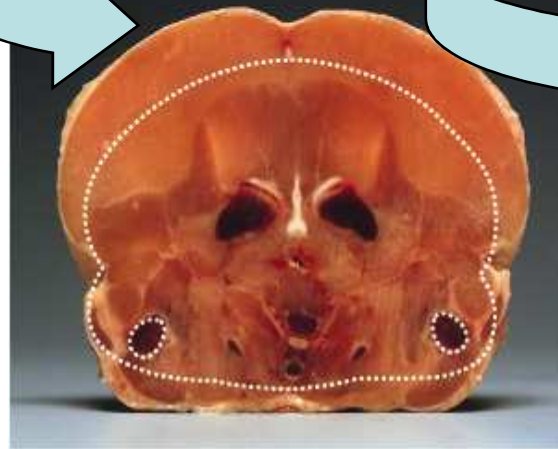
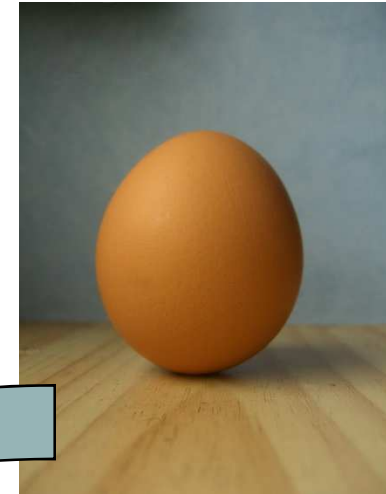
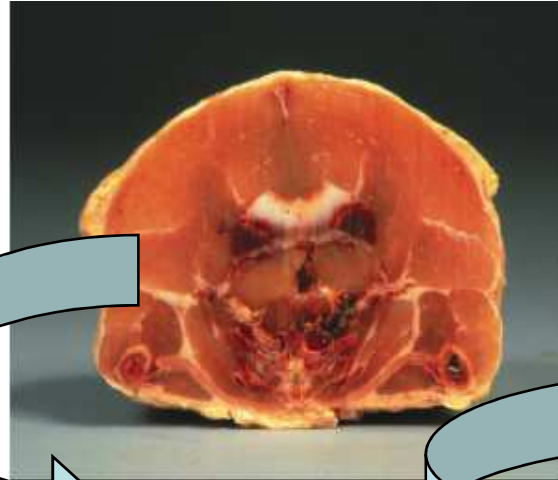
The future of prevention of Layer flocks: use of latest generation recombinant vaccines in the Hatchery

1. Recombinant vaccines – what does it mean..?

30y+ of research

2. Advantages of using recombinant vaccines

3. Vaccination in long living birds



Keep abreast of the time.....

Vector vaccines : Push for industry...

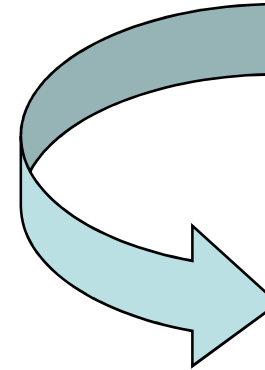
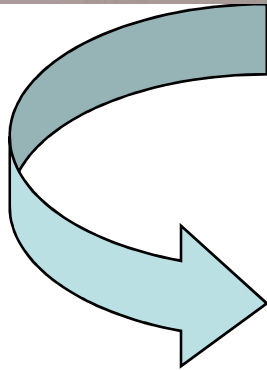
To produce more, more efficaciently, with more chances for ABF production



+



+



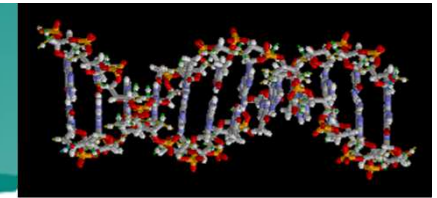
Benefits of recombinant vaccines

SECURING CONTROL OF VACCINATION

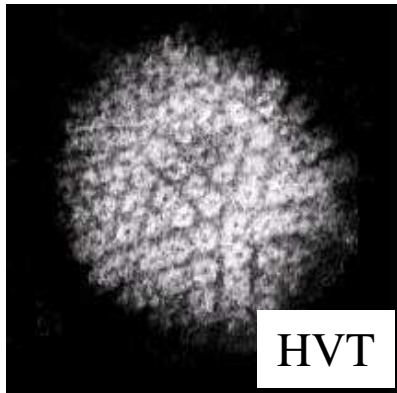
Moving field vaccination to hatchery to make it more reliable and accurate

VECTOR + INSERT (S) = Multivalent vaccination without pv reactions → more chances for ABF production

- Vector (HVT), the carrier of all genes : harmless for chickens
- Inserts - not full viruses :
cannot recombine
cannot reverse to virulence (no latency)
cannot stimulate pv reactions (e.g. growth retardation / resp symptoms)

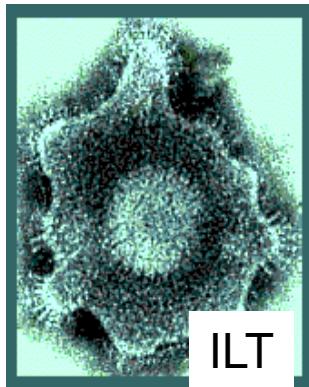


Innovax ILT - 2 in 1 Marek + ILT protection



HVT

Herpes virus



ILT

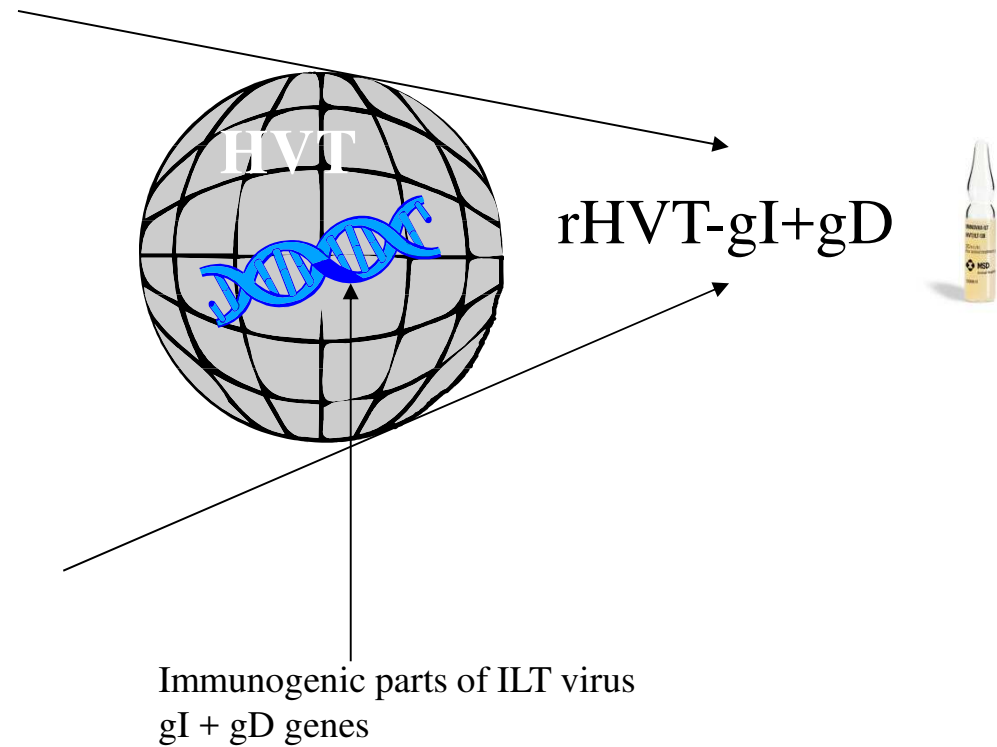
Herpes virus



**Marexine CA
Vector**



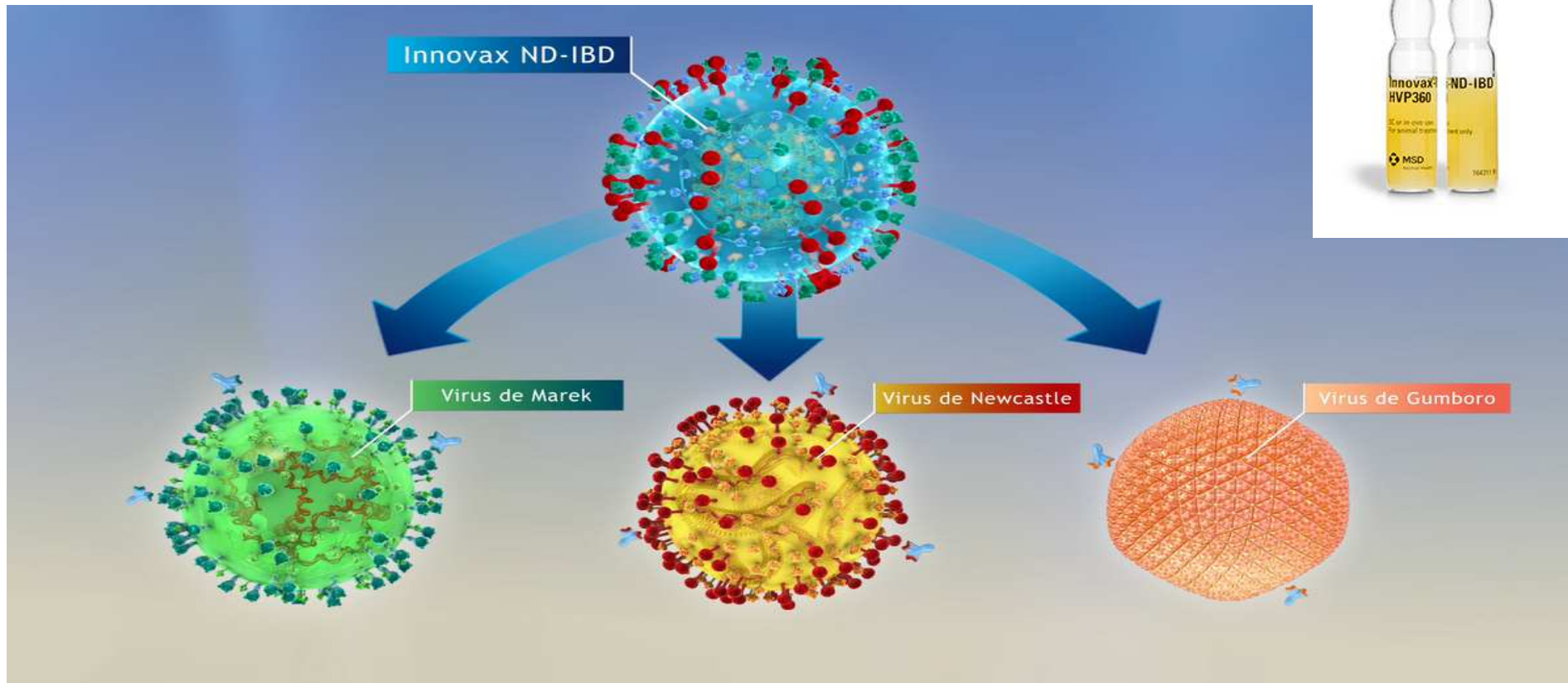
**Nobilis ILT
Donor**



gI + gD surface glycoproteins

INNOVAX ND-IBD : THE FIRST DUAL-CONSTRUCT VACCINE - 3 IN 1

The first HVT vector dual construct vaccine protecting against Marek disease (HVT), Newcastle disease (ND) and Infectious Bursal Disease (IBD) with a single injection.



Benefits of recombinant vaccines

- **No negative impact on performance**
- **Early then persistent life-long replication within a flock**
- **Ease of use – *in ovo*, s/c or i/m**
- HVT fraction : protection vs Marek's disease neoplasia and immunosuppression
- ILT fraction : protection vs ILT clinical signs and mortality; **or interference with IBV vaccination**
- ND fraction : protection vs lento- , meso- and velogenic strains, clinical signs and mortality **or interference with IBV vaccination**
- IBD fraction : protection vs variant and std strains – clinics, immunosuppression; **protection vs IBDV without loss of lymphoid tissue**

Breaks through maternally derived antibody (MDA)

HVT is not neutralized by ND, ILT or IBD maternal a-bodies (MDA help to protect chicks within first weeks, before active immunity is there)

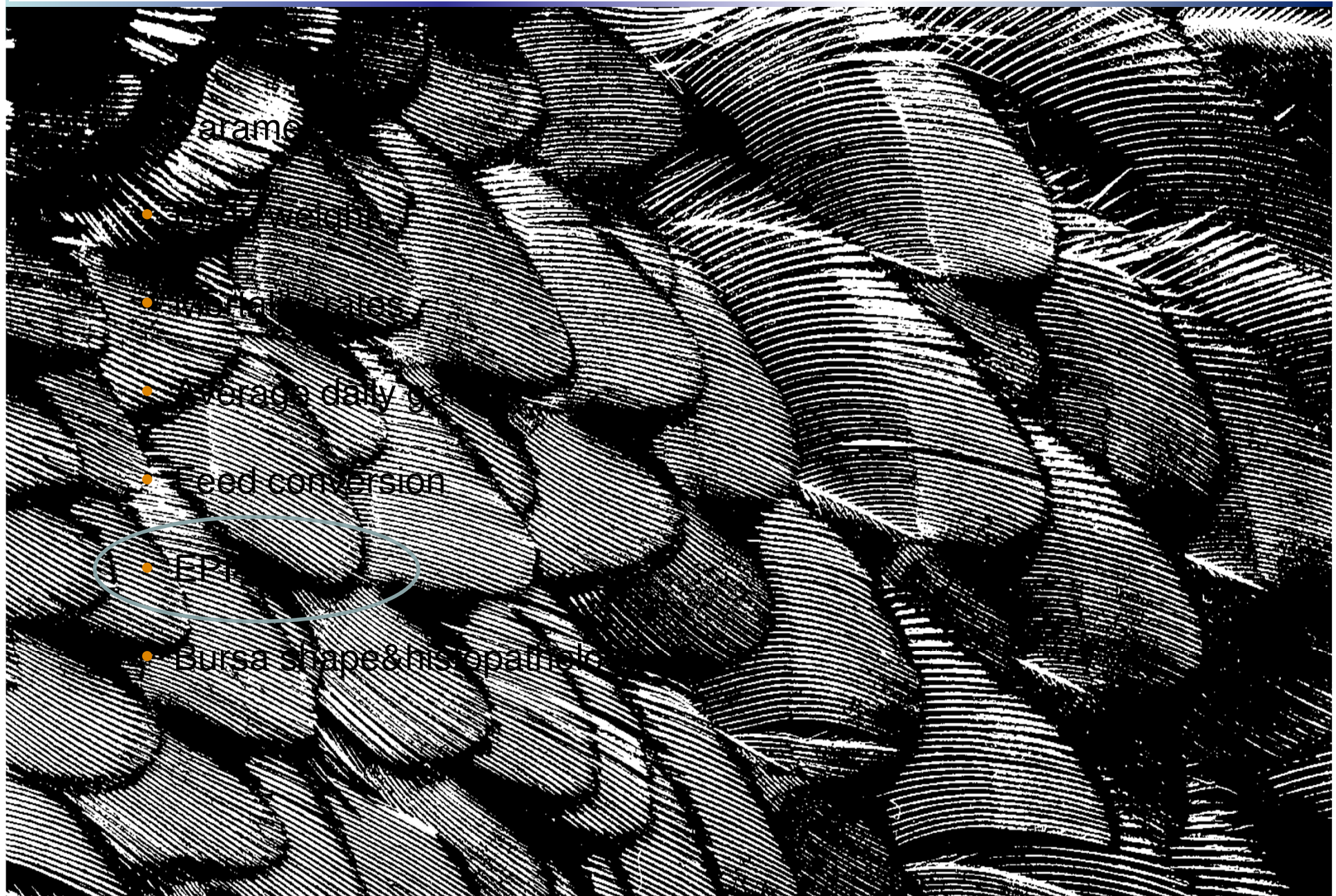
Current conventional tests to control might be dissapointing (not the whole virus)

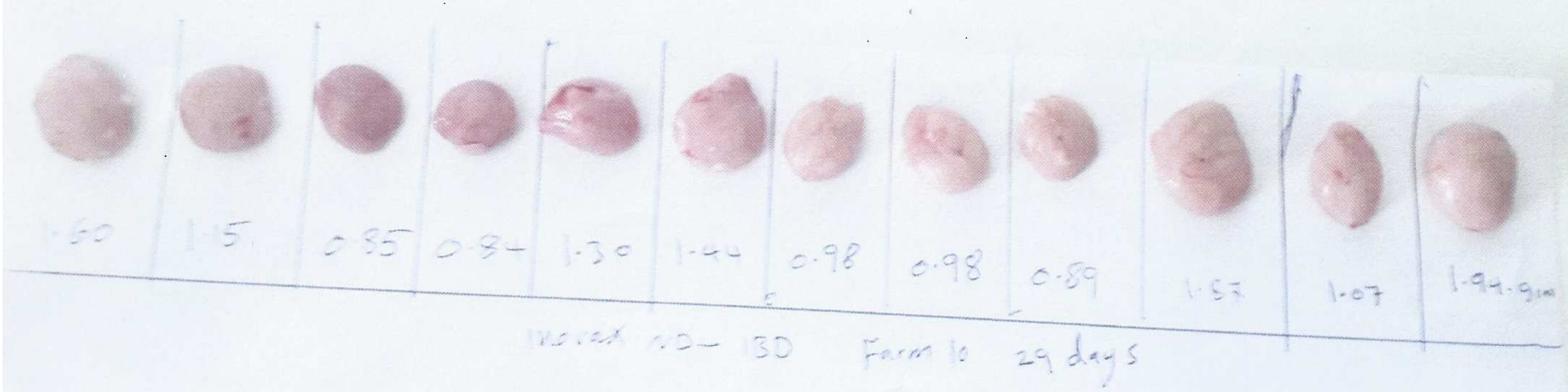
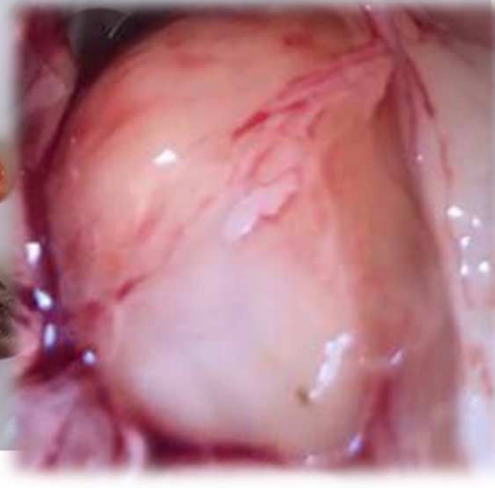
More expensive - cost compensated by performance improvement

▪ ROI :

1:8 ; 1;12 ; 1:18

POLAND , GREECE , CYPRUS, PERU, UAE (ME),PHILLIPINES





IBD vaccination:

In the field , immunity system is challenged by various factors other than IBD

- CAV
- Reovirus
- Adenovirus
- Mycotoxin

Innovax ND-IBD increases immunocompetence

- Gentle vaccine
- Allows the Bursa to fulfill its role

RESULTS

Parameter	Poland	Peru	UAE	Greece	Cyprus
FCR	1,61	1,65	1,37	1,82	1,55
BW gr at slaughter/ days	2590 gr / 42	2914 /42	1320 / 29	2860 /43	2260 /38
Mortality %	2.93	2.5	5.98 ^x (AI)	5.45	2.35
Average daily gain gr	61,6	69,9	58,0	67,1	59,5

^x ND - H9N2 presence

At this point, the production index of broilers runs between 340 and 440

Parameter	POLAND	PERU	UEA	GREECE	CYPRUS	PHILIPINES
EPI	373 (341→373)	420 (410-443)	397	348	374	345

All CB flocks, regardless rearing conditions and country showed profitable EPI

Innovax ND-IBD in commercial layers ?

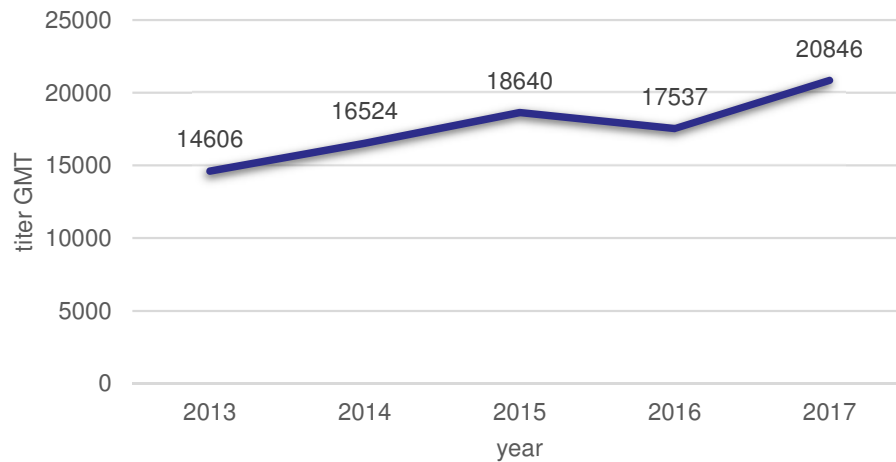


Long lived birds show what's circulating in the field

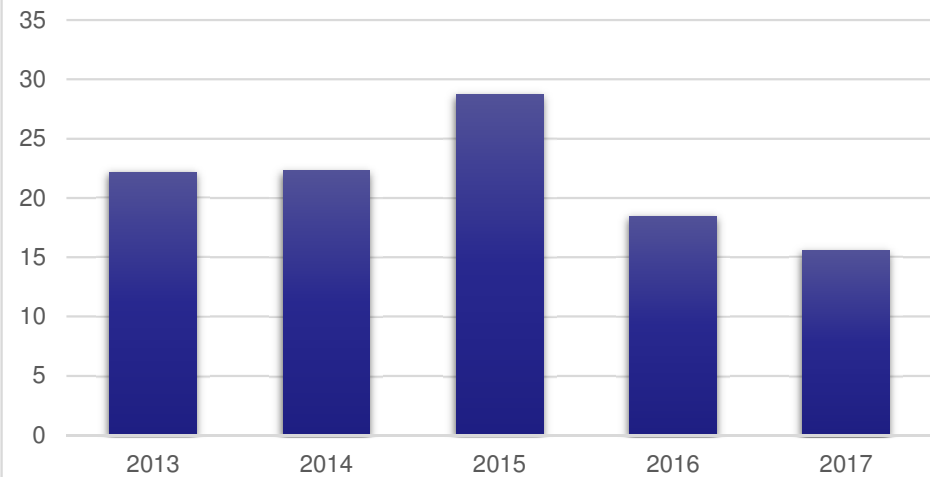
14606	22,15
16524	22,27
18640	28,71
17537	18,43
20846	15,53

75 BB flocksx20k Ross 308 birds

GMT



%CV



day 1 Nobilis NDC2
28 d Cevac Vitapest L
55 d Clone 30
126 d (18w) : Nobilis combo (ND included)

Lab Report

Diagnostic Services Laboratory

Poultry Diagnostic & Research Center
953 College Station Road
Athens, GA 30605
Phone: 706-542-5657 Fax: 706-542-0252
Email: pdrc@uga.edu

Case #: 125701
Ref#: Poland
Date: 06/18/18
PO#: 7100262448

Report To: MSD AH Intervet Sp. zoo
ATTN: Danuta Furmanek
Ul. Chlodna 51
Warsaw, 00867

Grower:  Hs: Flk:
Company: 
Complex: Age: 6.0
Species: CB
Breed: Ross 308
Email: Danuta.furmanek@merck.com
piotr.stachow@merck.com

Poland 48 /605-2753

VIRAL PCR

Sample ID	S#	TEST DESCRIPTION	RESULTS	ISOLATE	COMPLETED
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FTA-Bursa	1	Inf. bursal disease virus	+		
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The original IBDV RT-PCR for this sample was negative using the IBDV VP2 primer set. An additional RT-PCR using primers VP2 FP1 and RP4 (amplifies a larger piece of VP2). The second RT-PCR was performed based on clinical signs consistent with IBDV and the negative result using the first pair of primers.

The FTA-bursa sample was positive for IBDV by RT-PCR using primers VP2 FP1 and RP4.

The amino acid sequence of the IBDV VP2 product was 99.9% similar to vvIBDV strains.

Final results

Lab Report

Diagnostic Services Laboratory

Poultry Diagnostic & Research Center
953 College Station Road
Athens, GA 30605
Phone: 706-542-5657 Fax: 706-542-0252
Email: pdrc@uga.edu

Case #: 125886
Ref#: Poland
Date: 07/05/18
PO#: 7100262448

Report To: MSD AH Intervet Sp. zoo
ATTN: Danuta Furmanek
Ul. Chlodna 51
Warsaw, 00867

Grower: Hs: Fik:K1
Company: Merck Animal Health
Complex: Age: 6.0
Species: L
Breed:
Email: Danuta.furmanek@merck.com
sylvia.doner@merck.com

Poland 48 /605-2753

Specimens Submitted

1 FTA Filter paper

Tests Requested

IBDV PCR

Reason For Submission

Vet Service: Andrzej Sadowski DVM
Warszawa, Poland
Hemorrhages in muscles, hemorrhages between proventriculus and gizzard. Bursas are very small, vet is suspecting IBD. Decreased feed/ water intake for about 3 days and after that normal. Mortality is ~30%- a situation has now stabilized.
Sampled: 15/05/2018
Please additionally write on invoice: PL 526 18 92 773

sylvia.doner@merck.com

VIRAL PCR

Sample ID	S#	TEST DESCRIPTION	RESULTS	ISOLATE	COMPLETED
FTA-Bursa	1	Inf. bursal disease virus	+		
The FTA-bursa sample was positive for IBDV by RT-PCR.					
The amino acid sequence of the IBDV VP2 product was 99.7% similar to vvIBDV strains.					

Final results

CL – vaccination program

AGE	Disease	Vaccine	Route of application
1 d	MD	Nobilis Rismavac CA 126	i.m./ s.c
	ND +IB	Nobilis Ma 5 + Nobilis C2	spray
1 w	coccidiosis	Paracox	p.o.
14 d	IB	Nobilis IB 4/91	spray
14– 17 d	IBD	Nobilis Gumboro D78	dw
21 - 28 d	IBD	Nobilis Gumboro D78	dw
4 w	ND	Nobilis Clone 30	spray/dw
6 w	SG (SE+ST)	Nobilis SG 9R	s.c.
	or/and ILT	Nobilis ILT	e.d.
8 w	ND+IB	Nobilis Ma 5 + Clone 30	spray/dw
10 w	IB	Nobilis IB 4/91	spray
12 w	SG	Nobilis SG 9R	s.c.
	or/and ILT	Nobilis ILT	e.d.
13 w	AE	Nobilis AE 1143	dw
16 w	IB+ND+EDS	Nobilis IB+ND+EDS (RT+IBmulti+ND+EDS)	i.m.

* Option : Nobilis MG 6/85 aerosol – 14 - 16 woa

CL – vaccination program

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	ND +IB	Nobilis Ma 5	spray
1 w	coccidiosis	Paracox	p.o.
14 d	IB	Nobilis IB 4/91	spray
6 w	SG (SE+ST)	Nobilis SG 9R	s.c.
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Cautions:

- **HVT does not spread horizontally – missed bird is missed for MD but also for ILT/ND-IBD**
- **Double HVT vaccination (competition)**
- Storage and coverage (hatchery vaccination) – vaccination error
- Vaccine fractioning may compromise protection
- Sometimes is necessary to complete with traditional programs (ILT CEO/TCO; LaSota;C2)

Possible reasons of failures (ILT outbreaks)

- Poor biosecurity (MD field infection before onset of immunity)
- Poor vaccination technique (vaccine storage, preparation, administration – vaccination error)
- ILT : Concurrent diseases as outbreak predisposing factor (MS, MG, IB, TRT ?) ,high field pressure – older, conventional vaccine vaccinated flock in close neighbourhood,etc.

Thank you for attention

