



# ORT

Data Pack

**Ornithobacterium rhinotracheitis Antibody ELISA**

## **BioChek ORT Data Pack**

### Contents:

package insert	page 1/2
technical fact sheet	page 3
key performance features	page 4
data sheets	
<i>specificity</i>	page 5
<i>active infection (challenge study, broilers)</i>	page 6/7
<i>active infection(case study, broilers)</i>	page 8/9
<i>vaccination SPF chickens, strain A &amp; G</i>	page 10/11
applications	page 12

## **Key Performance Features**

### **Species:**

Works both on Chicken and Turkey sera.

### **Sensitivity:**

The test will pick up antibodies 7 - 21 days after infection.

### **Specificity:**

The test is specific to antibodies against O.rhinotracheale. The test will detect antibodies for strain A, B, C, D, E, F and G.

### **Reproducibility:**

Plate CV's lower than 10%, lot to lot reproducibility less than 15% of standard kit.

## **Specificity:**

Specificity has been established on SPF sera negative for *O. rhinotracheale* and by testing samples serologically positive for other avian pathogens such as:

<b>Species</b>	<b>Strain</b>
<i>P. multocida</i>	X-73
<i>P. multocida</i>	P-1059
<i>P. multocida</i>	P-1662
<i>P. multocida</i>	P-1702
<i>R. anatipestifer</i>	PAA CV
<i>R. anatipestifer</i>	BAB BRD
<i>R. anatipestifer</i>	PAD CV
<i>R. paragallinarum</i>	0083
<i>R. paragallinarum</i>	Spross
<i>R. paragallinarum</i>	H-18
<i>R. paragallinarum</i>	281/91
<i>R. paragallinarum</i>	4620/91
<i>P. gallinarum.</i>	Field strain
<i>K. kingea</i>	ATCC 23330
<i>K. denitrificans</i>	ATCC 33394
<i>L. indologenes.</i>	ATCC 25869

(results courtesy Dr. Paul van Empel, Intervet International Boxmeer, published in journal of clinical bacteriology, Feb. 1997, p. 418 -421)

All above mentioned samples tested negative. Please keep in mind that only certain strains of above mentioned pathogens were tested.

**O. rhinotracheale challenge study** (data courtesy D.R. Mekkes GD Deventer, Dr. J.H.H. van Eck, R.U.U.)

SPF broilers of 2.5 weeks of age were infected in the trachea with O.rhinotracheale. Simultaneously they were infected with E. coli and IBV H52. A negative control group was infected with E. coli and H52 only.

Blood samples were taken 14 days after infection at 4.5 weeks of age.

**The conclusions are:**

- the ORT test picks up serological response to O. rhinotracheale infection very well.
- An O. rhinotracheale infection combined with other pathogens results in a even stronger serological response.

Following are the results on the serological testing of the samples on the BioChek ORT antibody ELISA.

**UNIT B5                      Challenged with H52 and E.coli (negative control group)**

*Please note that there is one clearly positive sample, which in theory should have been negative.*

**UNIT A6                      Challenged only with O. rhinotracheale**

**O. rhinotracheale Case study**

(data courtesy Drs. P.M. Cornelissen and R.H. Hettenga, Pluimveepraktijk Noord en Oost, Slagharen, Holland E-mail: poulvet@xs4all.nl)

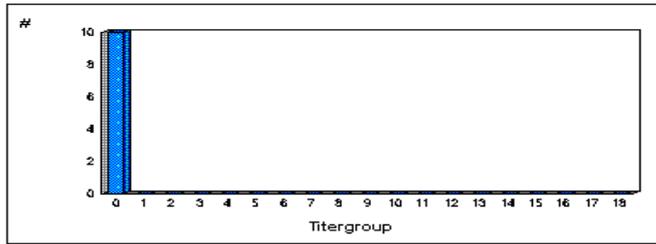
Commercial broiler flocks had clinical respiratory signs. The field veterinarian collected several 40 -50 day old chicks for Post Mortem. At further investigation 2 out of 4 flocks were diagnosed O.rhinotracheale and 2 as Bordetella avium (confirmed by Bacteriological investigation). From all chicks sera were collected and tested on the BioChek ORT antibody ELISA.

The 2 flocks with clear clinical signs of O. r. had antibody titers of 19 000 and 11 000. the 2 flocks infected with Bordetella avium tested negative.

**Flock 1: positive for B. avium; serologically and clinically negative for O. r.:**

**Flock:**

Name : BERGVD  
Company : SLAGH  
Age : 47D  
Reason : BO B.AVIUM POS  
Type : BR  
BleedDate : 9-10-97

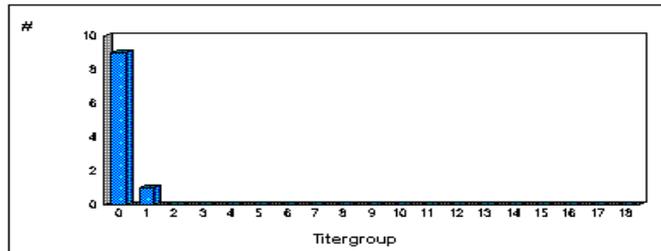


Assay : O.r.  
Bleeding Date : 9-10-97  
Samples : 10  
Mean Titer : 211  
Std.Dev. : 95  
%CV : 45  
Mean Titer : 211  
Dilution : 100

**Flock 2: positive for B. avium; serologically and clinically negative for O. r.:**

**Flock:**

Name : BERGVD  
Company : SLAGH  
Age : 40D  
Reason : BO B.AVIUM POS  
Type : BR  
BleedDate : 9-10-97

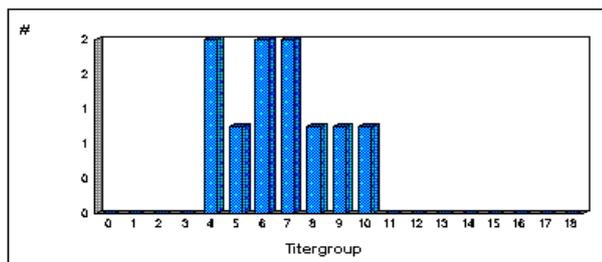


Assay : O.r.  
Bleeding Date : 9-10-97  
Samples : 10  
Mean Titer : 305  
Std.Dev. : 139  
%CV : 45.67  
Mean Titer : 305  
Dilution : 100

**Flock 3: negative for B. avium, serologically and clinically positive for O. r.**

**Flock:**

Name : LUIMES  
Company : SLAGH  
Age : 46D  
Reason : OR ON PM  
Type : BR  
BleedDate : 9-10-97

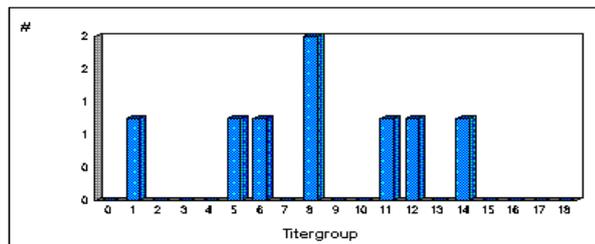


Assay : O.r.  
Bleeding Date : 9-10-97  
Samples : 10  
Mean Titer : 11418  
Std.Dev. : 6226  
%CV : 54  
Mean Titer : 11418  
Dilution : 100

## Flock 4: negative for B. avium, serologically and clinically positive for O.r.

### **Flock:**

Name : UHBROEK  
Company : SLAGH  
Age : 50D  
Reason : OR ON PM  
Type : BR  
BleedDate : 9-10-97



Assay : O.r.  
Bleeding Date : 9-10-97

Samples : 8  
Mean Titer : 19778  
Std.Dev. : 15541  
%CV : 78  
Mean Titer : 19778  
Dilution : 100

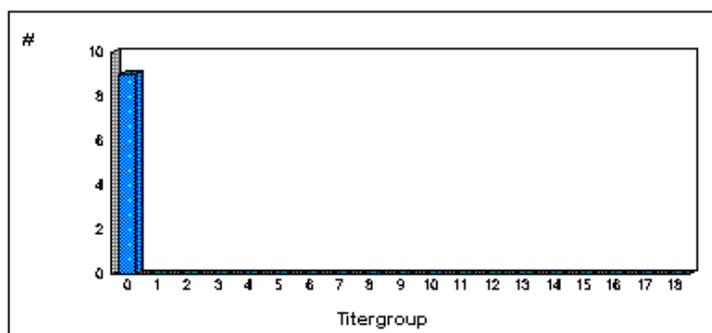
## Vaccination study

SPF chickens were vaccinated with O.r. strain A and G. For the group vaccinated with vaccine A samples were taken 7 and 42 days post vaccination. For the group vaccinated with strain G blood samples were collected only at 7 days post vaccination.

### **Flock 1: negative control group:**

### **Flock:**

Name : PVANEMPEL  
Company : INTV  
Reason : OR NOT VACCINAT  
BleedDate : 5-8-97



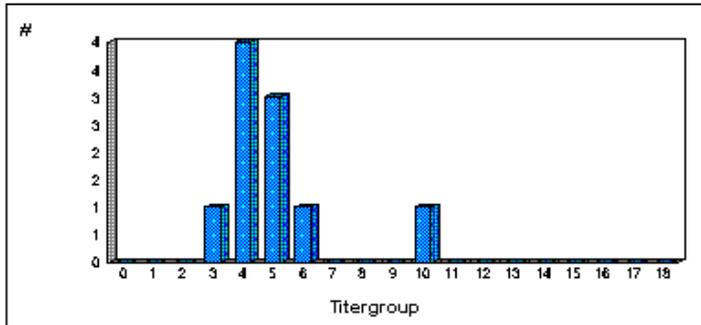
Assay : O.r.  
Bleeding Date : 5-8-97

Samples : 9  
Mean Titer : 27  
Std.Dev. : 31  
%CV : 116  
Mean Titer : 27  
Dilution : 100

**Flock 2: vaccinated with strain A, 7 days post vaccination:**

**Flock:**

Name : PVANEMPEL  
 Company : INTV  
 Housno : A  
 Reason : 7DAYSPOSTACHALL  
 BleedDate : 5-8-97



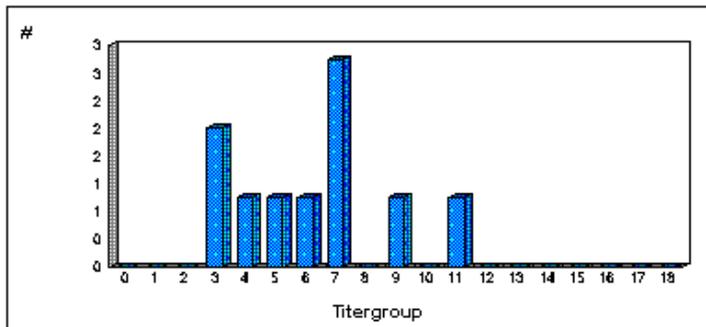
Assay : O.r.  
 Bleeding Date : 5-8-97

Samples : 10  
 Mean Titer : 5352  
 Std.Dev. : 4463  
 %CV : 83  
 Mean Titer : 5352  
 Dilution : 100

**Flock 3: vaccinated with strain A, 42 days post vaccination:**

**Flock:**

Name : PVANEMPEL  
 Company : INTV  
 Housno : A  
 Reason : 42DAYS POSTCHAL  
 BleedDate : 5-8-97



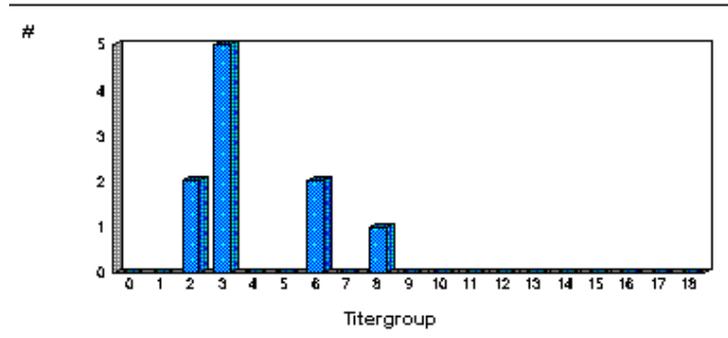
Assay : O.r.  
 Bleeding Date : 5-8-97

Samples : 10  
 Mean Titer : 8417  
 Std.Dev. : 7217  
 %CV : 85  
 Mean Titer : 8417  
 Dilution : 100

## Flock 4: vaccinated with strain G, 7 days post vaccination:

### ***Flock:***

Name : PVANEMPEL  
Company : INTV  
Housno : G  
Reason : 7DAYSPOSTGCHALL  
BleedDate : 5-8-97



Assay : O.r.  
Bleeding Date : 5-8-97

Samples : 10  
Mean Titer : 3584  
Std.Dev. : 2959  
%CV : 82  
Mean Titer : 3584  
Dilution : 100

## **Applications:**

### **Diagnosis of *O. rhinotracheale* infection:**

Aid in diagnosing disease. Based on the limited data available so far there is a clear and rapid seroconversion after infection/vaccination. This is based on data both on chickens and Turkeys.

When not having the option to compare paired sera, please be aware that clinically healthy flocks might very well test positive. It seems that S/P ratio's higher than 3 - 4 BioChek titer > 10 000 - 15 000, often correlate with clinical disease.

### **Vaccination check:**

Check if a vaccination has met the predefined criteria for a successful vaccination.