TABLEAU I Titre envers le virus RSB.

Numéro de l'animal	Date de la prise de sang		
	9/11/88	9/12/88	11/01/89
1301	–	16	
1302	–	7	
1305	4	⩾ 91	
1307	4	32	
1308	–	?	⩾ 20
1310	–	–	–
1311	–	–	–
1312	–	–	–
1316	16	–	–
1320	–	–	+
1322	–	23	?
1325	32	23	
1328	–	–	–
1329	–	–	–
1330	–	4	
1335	16	?	45
1336	–	64	?
1337	11	16	
1340	–	23	
1341	23	32	
1342	23	64	
1344	–	32	
1345	16	4	
1346	23	8	
1347	–	–	–
1349	–	–	+

– : négatif à la dilution 1/4 ; ? : pas de prélèvement disponible ; + : animal mort.

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JETTEUR (P.), LEFEBVRE (P.), SCHANDEVYL (P.). Seroconversion to bovine respiratory syncytial virus in goats in Zaire. *Revue Élev. Méd. vét. Pays trop.*, 1989, **42** (4) : 493-494.
Coupled sera were taken among goats suffering from pneumonia in Zaire. The presence of antibodies to bovine syncytial respiratory virus was investigated by a seroneutralization test. Out of 26 animals, 9 already had antibodies at the time of the first blood sampling, 9 presented a seroconversion and 8 remained seronegative during the two months of observation. These results suggest it would be useful to study the frequency of the infection of small ruminants with this virus and its clinical and economical impact in Central Africa. *Key words* : Goat - Pneumonia - Respiratory syncytial virus - Serology - Zaire.

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Detection of rotavirus antigen in diarrhoeic and non-diarrhoeic piglets in Nigeria

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ATII (D. J. I.), OJEH (C. K.), DUROJAIYE (O. A.). Détection d'antigène de rotavirus chez des porcelets diarrhéiques ou non au Nigeria. *Revue Élev. Méd. vét. Pays trop.*, 1989, **42** (4) : 494-496.
Les échantillons de fèces de 96 porcelets souffrant de gastro-entérites aiguës et 41 échantillons provenant de porcelets non diarrhéiques ont été testés par la technique ELISA pour la recherche des antigènes de rotavirus porcin. Le rotavirus porcin a été mis en évidence chez 43 des 96 porcelets du lot diarrhéique (soit 44,8 p. 100) alors qu'aucun échantillon du lot non diarrhéique n'était positif vis-à-vis du rotavirus porcin ($P < 0,01$). La répartition de l'infection par classe d'âge révèle un taux d'infection de 30,2 p. 100 chez les porcelets de 1 à 3 semaines, taux significativement plus élevé ($P < 0,05$) que chez les porcelets de 4 à 6 semaines, chez lesquels le taux d'infection est de 14,6 p. 100. Aucun antigène de rotavirus porcin n'a été détecté chez les porcelets diarrhéiques de plus de 6 semaines. Le titrage de 10 échantillons positifs en ELISA pris au hasard a mis en évidence des titres s'échelonnant de 512 à ⩾ 4 096. *Mots clés* : Porcelet - Rotavirus - Antigène - Diarrhée - Test ELISA - Nigeria.

Introduction

Rotaviruses cause acute gastroenteritis in the neonates of many mammals (4). The virus has been reported in the porcine species from several countries including Australia (7), Belgium (2), UK (5) and the USA (1).

Morphologically, all rotaviruses, irrespective of their species of isolation, are identical but are distinct antigenically. Based on these antigenic differences,

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they have been recently subdivided into groups A, B, C, D and E (6). Members of each group share a common antigen, which, for the well characterized group A, can be detected by a variety of serological methods including the ELISA (3). To date, no studies have shown evidence of PRV infection in pigs in Nigeria. In this report, results on the incidence of PRV in both diarrhoeic and non-diarrhoeic piglets from different management practices in 5 states of Nigeria are presented, using the ELISA technique.

Materials and methods

Ninety-six faecal samples from diarrhoeic and 41 from non-diarrhoeic piglets, aged 1-8 weeks were collected

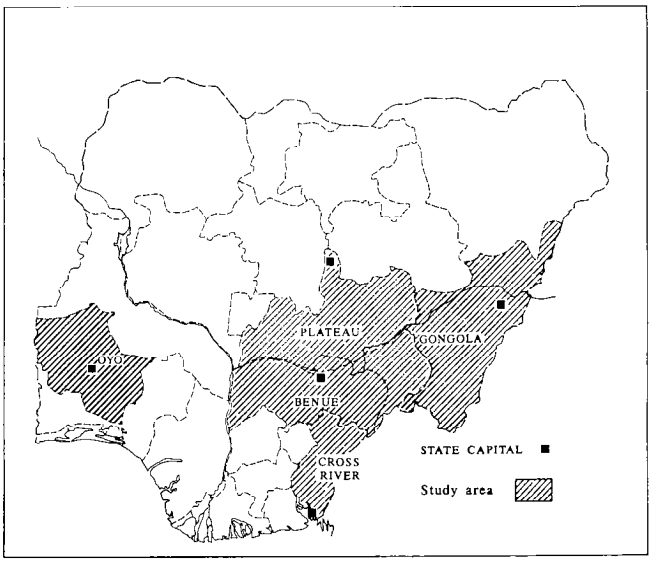

Fig. 1 : States distribution of piglets with rotavirus infection in Nigeria.

from 5 states of Nigeria (Benue, Cross-River, Gongola, Oyo and Plateau) between September 1987 and January 1988 (Fig. 1). Ten per cent w/v suspension of faecal samples were prepared in PBS 7.4 and were clarified by low speed centrifugation. The resultant supernatants were used as antigen for the ELISA.

All faecal samples were screened by the double sandwich micro-ELISA technique as described by EKERN *et al.* (3). Rabbit anti-rotavirus immunoglobulin (IgG), alkaline phosphatase labelled goat anti-rabbit IgG were kindly supplied by Dr. L. J. SAIF, Wooster, OH, USA. Known positive and negative controls were included in each test plates. Tests were read both visually and by spectrophotometer (Titertekmultiscan, Flow labs Ltd., UK), at 405 nm absorbence. Samples were considered positive if absorbence values were higher than the mean of negative control samples plus 3 times the standard deviation (9).

Two fold serial dilution of randomly selected positive samples for PRV by ELISA were then titrated to determine their antigen concentrations. Results were analysed by both the Student's t test and χ^2 distribution.

Results

Of the 96 samples with acute gastroenteritis, 43 (44.8 per cent) were positive for PRV, while none of the 41 samples from non-diarrhoeic piglets were positive ($P < 0.01$).

A higher percentage of positive samples (87.5 per cent) was found in samples from Cross-River State followed by Benue (57.7 per cent), Plateau (42.9 per cent), Oyo (20.8 per cent) and Gongola States (4.6 per cent).

When analysed according to age distribution, it was observed that PRV was encountered frequently in piglets aged 1-3 weeks with 55.8 per cent (29/52) ; followed by those between 4-6 weeks of age with 34.2 per cent (14/41) while no sample was positive in the age group above 6 weeks. The association between age and incidence of PRV acute gastroenteritis was age dependent ($P < 0.05$, by χ^2 test).

Of the 10 samples titrated for their antigen concentration, 7 had titres $\geq$ 4,092, 2 samples had titres of 1,024 and 1 had 512.

Discussion

PRV, as detected by ELISA was associated with acute gastroenteritis in herds of unweaned piglets from 5 states in Nigeria, with an incidence of 44.8 per cent. The ELISA technique has been shown by other workers (8) to be reliable and sensitive for the identification of rotavirus in faecal specimens. The fact that our positive and negative controls worked consistently in each test plate confirms the reliability of the ELISA technique ; and that indeed the rest of the 53 (55.2 per cent) diarrhoeic and all the 41 (100 per cent) non-diarrhoeic faecal samples did not contain PRV. Therefore, for these 53 diarrhoeic samples their aetiology must have been due to other pathogenic or nutritional causes.

The present study showed that PRV diarrhoea occurred in piglets 1-6 weeks old and predominantly in 1-3 weeks old suckling pigs ; 30.2 per cent of this age group was positive for PRV, followed by 14.6 per cent in the 4-6 weeks group. PRV was not detected in piglets above this age, and the infection was found to be age dependent ($P < 0.05$). These observations are consistent with those of previous studies (3).

The observations of unweaned piglets coming down with acute PRV gastroenteritis may be a reflection of lack of antibodies in the milk of the sows or that the infection was overwhelming as to break the immunity in the piglets. The high titres of the PRV antigen in 10

randomly selected samples and also the severe and frequent outbreaks with 80-90 per cent morbidity and 20-30 per cent mortality in some herds which were associated with poor sanitary conditions in pig pens and around the piggeries tend to suggest an overwhelming infection. The proportions of infections from the states might also be a reflection of these and/or other varied factors. Nevertheless, from the results obtained, there exists the possibilities of a wide geographical spread of PRV in Nigeria.

ATII (D. J. I.), OJEH (C. K.), DUROJAIYE (O. A.). Detection of rotavirus antigen in diarrhoeic and non-diarrhoeic piglets in Nigeria. *Revue Élev. Méd. vét. Pays trop.*, 1989, **42** (4) : 494-496.
Faecal samples from 96 piglets with acute gastroenteritis and 41 samples from non-diarrhoeic piglets were investigated for porcine rotavirus (PRV) antigens by enzyme-linked immunosorbent assay (ELISA). PRV was detected in 43 of 96 (44.8 %) in the diarrhoeic group whilest none of the samples in the non-diarrhoeic group was positive for PRV ($P < 0.01$). Age distribution of infection showed a higher infection rate of 30.2 % in piglets aged 1-3 weeks, which was significantly higher ($P < 0.05$) than in piglets aged 4-6 weeks, where the infection rate was 14.6 per cent. No PRV antigen was detected in diarrhoeic piglets above 6 weeks of age. Titration of 10 randomly selected ELISA-positive samples showed titres ranging from 512 to ≥ 4,096. *Key words* : Piglet - Rotavirus - Antigen - Diarrhoea - ELISA test - Nigeria.

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