CHAPTER THREE
RESULT

3.1 Prevalence of Contagious bovine pleropneumonia (CBPP):

During this study a total of 22 farm and three markets were surveyed from three governorates and five localities in Khartoum state.

3.2 Locality :

The prevalence of CBPP in the five localities is given in table (2). There was an average sero- prevalence of 17.19%. it was higher in sharg elnile (27.03%) than other localities. The prevalence of CBPP in the other localities was bahry (17.86%), jabalawlia (17.46%), karary (13.04%), umbada (9.76%). Person Chi – square test showed no significant association, the P- value was (0.355).

3.3 Clinical Signs:

Of 192 animals, 17(18.09%) animals is positive from 94 animals which observed in it signs, and from 98 animals which did not observed signs 16(16.33%) animals were positive. Person Chi – square test showed no significant association, the P- value was (0.747).

3.4 Treatment by antibiotics :

The prevalence of the disease in 87 animals treated with antibiotic is (18.39%) but The prevalence of the disease in 6 animals did not treated with antibiotic is (20%). Person Chi – square test showed no significant association, the P-value was (0.687).

3.5 Vaccination:

From 48 animals which vaccinated agenist CBPP 12(25%) was positive and from 144 animals did not vaccinated 21(14.58%) observed positive by the cELISA. Person Chi – square test showed there is significant association, the P-value was (0.098).

3.6 Type of bread:

from 34 animals which is local breed 8(23.53%) was positive and from 158 animals which is cross breed 25(15.82%) was positive. Person Chi – square test showed no significant association, the P- value was (0.280).

3.7 Ages:

After divided the age of animals into three intervals, in less than 6 month did not observe any case positive, in animals from 6-12 month from 24 animals there was 2(8.33%) was positive and in animals more than 12 month from 161 animals 31(19.25%) was positive. Person Chi – square test showed there is significant association, the P-value was (0.196).

3.8 Sex:

16(17.2%) males showed positive reaction from a total of 93 males and from 99 females 17(20.73%) showed positive reaction by the c ELISA. Person Chi – square test showed no significant association, the P- value was (0.995).

3.9 Type of herd:

19(16.81%) animals showed positive reaction from 113 animals resident and 14(17.72%) showed positive reaction by the cELISA from 79 animals breed for trade. Person Chi – square test showed no significant association, the P-value was (0.870).

3.10 Animals size:

When we divided the herd size into three group, when the herd size is less than 20 animals 1 (33.33%) was positive from 3 animals, 13(25%) positive from 52 animals where the herd size of it is between 20 and 40 and when the herd size more than 40, 19(13.87%) was positive from 137 animals. Person Chi – square test showed there is significant association, the P- value was (0.147).

3.11 Purpose of production:

According to the purpose of production for milk or meat, 19(16.81%) positive from 113 animals used milk and

14(17.72%) positive from 79 animals used for meat. Person Chi – square test showed no significant association, the P- value was (0.870).

3.12Body condition:

30(18.18%) animals was positive from165 animals healthy and 3(11.11%) animals positive from 72 animals not healthy. Person Chi – square test showed no significant association, the P- value was (0.367).

3.13 Type of housing:

When we divided the type of housing to close or open or semi open, from 22 animals breeding in semi open housing there was 2(9.09%) positive and from 170 animals breeding in close housing there was 31(18.24%) positive. Person Chi – square test showed no significant association, the P- value was (0.285).

3.14 Type of feeding:

31(17.92%) animals positive from 173 animals had a good feeding and from 19 animals had a poor feeding there was 2(10.53%) positive. Person Chi – square test showed no significant association, the P- value was (0.417).

3.15 Sharing with other herds in water body:

6(12%) animals was positive from 50 animals that sharing other herds in water body and from 142 animals that did not share other herds in water body there was 27(19.01%) positive. Person Chi – square test showed no significant association, the P- value was (0.258).

3.16 Sharing other herd in grazing land:

from 20 animals that sharing other herd in grazing land there was 1(5%) animal positive and 32(18.6%) positive from 172 animals that did not sharing other herd in grazing land there was 32 (18.6%) that positive. Person Chi – square test showed there is significant association, the P- value was (0.127).

3.17 Insect population:

According to the number of insect population heavy or low, there was 8(66.67%) positive from 12 animals that leaved in heavy insect population and from 180 animals that leave in low insect population there was 25 positive. Person Chi – square test showed there is significant association, the P- value was (0.000).

3.18 House cleaning:

According to house cleaning which was divided to daily, every 7 day, every 30 day and the number of animals which were tested 85, 98, 9 animals respectively and the number of animals which is positive is 14(16.47%), 19(19.39%), 0 animals respectively. Person Chi – square test showed no significant association, the P- value was (0.328).

Table (5): Result of c-ELISA test on serum samples collected from different localities in cattle in Khartoum state (january2011 to may 2011):

localities	Total No	No of positive	No of negative	% of positive
Karary	23	3	20	13.04
Umbada	41	4	37	9.76
Sharg elnile	37	10	27	27.03
Bahry	28	5	23	17.86
jabalawlia	63	11	52	17.46
Total	**192**	**33**	**159**	**17.19**

Table (6): Association between ELISA test result and risk factors:

P-value	Ch^2	d.f	% of positive	No positive	No tested	variable
0.355	4.397	4			192	**Locality:**
			13.04	3		**Karary**
			9.76	4		**umbada**
			17.86	5		**Bahry**
			27.03	10		**Sharg elnile**
			17.46	11		**jablawlia**
0.747	0.104	1			192	**Sign:**
			16.33	16		**Yes**
			18.09	17		**no**
0.687	0.162	1			192	**Treatment:**
			18.39	16		**Yes**
			16.19	17		**no**
0.098	2.744	1			192	**Vaccination:**
			25	12		**Yes**
			14.58	21		**No**
0.280	1.167	1			192	**Breed:**
			23.53	8		**Local**
			15.82	25		**cross**
0.196	3.258	2			192	**Age:**
			0	0		**< 6**
			8.33	2		**6 - 12**
			19.25	31		**>12**
0.995	0.000	1			192	**Sex:**
			17.20	16		**Male**
			20.73	17		**female**

P-value	Ch^2	d.f	% of positive	No positive	No tested	variable
0.870	0.027	1			192	**Type of herd:**
			17.72	14		**Trade**
			16.81	19		**Resident**
0.147	3.840	2			192	**Herd size:**
			33.33	1		**< 20**
			25	13		**20 – 40**
			13.87	19		**>40**
.870	0.027	1			192	**Purpose:**
			16.81	19		**Milk**
			17.72	14		**meat**
0.367	0.815	1			192	**Body condition:**
			18.18	30		**Healthy**
			11.11	3		**Not healthy**
0.285	1.144	2			192	**Housing**
			18.24	31		**Close**
			9.09	2		**Semi open**
			0	0		**open**

P-value	Ch^2	d.f	% of positive	No positive	No tested	variable
0.417	0.657	1			192	**Feeding:**
			17.92	31		**Good**
			10.53	2		**poor**
0.258	1.278	1			192	**Sharing in water body**
			12	6		**Yes**
			19.01	27		**no**
0.127	2.330	1			192	**Sharing in grazing lan**
			5	1		**Yes**
			18.6	32		**no**
0.000	22.016	1			192	**Insect population**
			66.67	8		**Heavy**
			13.89	25		**low**
0.328	2.232	1			192	**House cleaning:**
			16.47	14		**Dialy**
			19.39	19		**Every 7 day**
			0	0		**Every 30 da**

3.19 Univariate and multivariate analysis:

3.19.1 Univariate analysis:

All factors had a significant less than 0.2 associated and increasing the risk of CBPP in Khartoum state. The result indicated that vaccination (sig = 0.098), age (sig = 0.196), herd size (sig = 0.147), sharing in grazing land (sig = 0.127) and insect population (sig = 0.000) had statistically significant effect of the disease prevalence, however other factors which were locality, signs, treatment, breed, purpose, body condition, season, housing, feeding, sharing in water body and house cleaning did not have significant effect on prevalence of the disease.

Multivariate analysis:

In multiple logistic regression we found that 16.9% for causing the disease is explained by this variables.

In multivariate analysis, multiple logistic regression used, all factors had a significant less than 0.2 were entered in the analysis. The result show that there is significant association between the disease and insect population (sig = 0.004).

Table (7): logistic regression analysis results for the association between the factors and CBPP:

Risk facter	No tested	% of positive	OR	95% CI	P-value
Vaccination:	192				
yes		25	1.099	0.344-3.513	0.873
no		14.58	-	-	
Age:	192				
>12		19.25	Pig no	0.000	0.999
6 - 12		8.33	Pig no	0.000	0.999
< 6		0	-	-	0.727
Herd size:	192				
< 20		33.33	0.762	0.261-2.222	0.577
20 – 40		25	3.070	0.251-37.495	0.619
>40		13.87	-	-	0.380
Sharing in grazing land:	192				
No		18.6	0.500	0.058-4.345	0.530
Yes		5	-	-	
Insect population:	192				
Heavy		66.67	14.513	2.392-88.043	0.004
low		13.89	-	-	