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AN OUTBREAK OF EQUINE INFECTIOUS ANAEMIA
IN THE
RUPUNUNI SAVANNAHS OF GUYANA

004253

by
A. Môtie

SUMMARY

An outbreak of suspected Equine Infectious Anaemia (EIA) among a population of 678 horses from 16 farms occurred in the North and South Rupununi Savannas of Guyana. One hundred and ten horses from these farms were examined for clinical signs of the disease and the findings were compatible with EIA. From this group of 110 affected horses, 92 sera and 50 whole blood samples were collected and examined for serologic and hematologic evidence of EIA, respectively.

The Coggins agar gel immunodiffusion test (AGID) results showed that 67 (72.8%) of the 92 sera examined were positive for EIA. The mean packed cell volume (PCV) of the 50 horses studied was 17.8 percent and the mean red blood cell (RBC) count was $3.7 \times 10^6/\text{mm}^3$ with the mean white blood cell count as $4.1 \times 10^3/\text{mm}^3$.

The mortality rate among the horses on all the 16 farms was 11.1 percent, whereas, the morbidity was 14.0 percent. It was considered of interest that 78 percent of all the sero-positive horses were from the 4-9 year age group.

Since the outbreak area in the Rupununi Savannas occurred on the border with the country, Brazil, which is known to be the enzootic area for this disease, the need for strict border control and other appropriate surveillance measures aimed at elimination of the disease is evident.

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INTRODUCTION

Equine Infectious Anaemia (EIA, commonly called swamp fever) has a viral aetiology and results in a chronic disease after the first acute attack (Blood, D.C. and Henderson, J.A., 1975). The disease has a world-wide occurrence and causes an anaemia and intermittent fever (Issel, C.J. and Coggins, L., 1979). Blood sucking insects such as mosquitoes, stable flies and biting flies are frequently implicated in the spread of the disease (The Merck Veterinary Manual, 1975). The role that the native 'Caboura' fly of this region, a biting fly (*Simulium* spp), plays in the transmission of EIA is unknown. Contaminated clothing and equipment are also known to be important in the transmission of this disease (The Merck Veterinary Manual, 1975). Favourable climatic conditions like those in Guyana, such as a warm humid climate, important for the survival and migration of vector hosts, can play a major role in the spread of EIA (Blood, D.C. and Henderson, J.A., 1975). No previous outbreak has been reported in the Savannahs of Guyana. The purpose of this study is to report on the first known EIA outbreak that the Rupununi Savannahs has experienced which occurred during October to November, 1982.

MATERIALS AND METHODS

Area of Outbreak:

The Rupununi Savannahs are classified as tropical with one dry season lasting from the month of October to March and one rainy season beginning during April and ending in September. The average temperature during the year is 30.4°C with a mean humidity of 80%. Average annual rainfall can range from 103-155 cm (Annual Climatological Data Summary, Guyana, 1974).

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The horse population of the entire savannahs was estimated to be approximately 3000 head. The average number of horses per farm studied was found to vary from 8 to 250. The savannahs are used mainly for Livestock raising, of which cattle is the most important species. Farms on which the outbreak occurred were approximately 1 to 35 km from the Brazilian northern border with Guyana.

Collection of Samples:

A ranch to ranch survey was carried out during the month of November, 1982 on which outbreaks of the disease occurred. Ten ml of blood with and without the anticoagulant ethylenediaminetetra-acetic acid (EDTA) were collected by jugular venipuncture. Sera were labelled and stored at -25°C until they could be transported under refrigeration and tested by the immunodiffusion (AGID) (Coggins) test (Coggins, L. and Narcross, N.L., 1970). The whole blood samples were transported under refrigeration to the Veterinary Diagnostic Laboratory, Mon Repos, Guyana for testing for Red and White cell counts and packed cell blood volumes.

RESULTS

Observations made on examining the horses showed that they were unthrifty and emaciated. They appeared droopy and had difficulty raising the head from the ground. As a result, they suffered traumatic injury to the lower lips and gums. Anorexia or decreased appetite and weakness were evident in all the affected animals examined and epiphora was a consistent sign. Horses eventually became incoordinated. A dermatitis was evident but this was attributed to an increase in the number of biting flies on farms. These consisted mainly of the stable fly (Stomoxys calcitrana) and the biting 'Caboura' fly (Simulium spp.) which is indigenous to the area. Jaundice was also observed. Only three of the horses examined showed a subcutaneous edema on the underside and legs. There was also a history of two abortions. After

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4-7 days of the initial appearance of the clinical signs, horses became recumbent and thrashed about in an attempt to rise. Dyspnea was accentuated by a rigorously heaving thorax. Heart sounds increased in amplitude. Death usually occurred during this stage.

Of the 678 horses on 16 farms in both North and South Rupununi Savannahs 75 (11.1%) died and 95 (14%) were clinically ill (Table I). The number of deaths in horses on these farms ranged from none to 25 (0 - 29.2%) and the number of sick horses was from 1 to 14 (1.8 - 81.3%).

One hundred and ten horses were classified as having clinical signs compatible with EIA. Of these, 92 were tested serologically for EIA. Sixty seven (72.8%) of the 92 sera examined were positive. The data on these sera examined for EIA antibodies are summarised in Table II.

Analysis of blood value results of 50 horses with clinical signs compatible with EIA showed a mean PCV value of 21.1 percent (range 18.1 - 30.3 percent), a mean RBC value of $3.7 \times 10^6/\text{mm}^3$ and a mean WBC value of $4.1 \times 10^3/\text{mm}^3$ (range $1.3 - 7.2 \times 10^3/\text{mm}^3$). These results are presented in Table III.

When the data on the positively reacting horses were examined according to sex no marked difference was observed. Of the 92 sera tested 73.9 percent of the males and 77.3 percent of the females were immuno-reactors. When a comparison was made according to age groups, horses between the age group 4-6 years were the most severely affected (45.5%). The combined prevalence of positive seroreactors of both sexes was greatest in the age group 4-9 years (78.2%).

DISCUSSION

This study has revealed a significant EIA outbreak that the Rupununi

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Savannahs has experienced and recorded here for the very first time. This is substantiated by the fact that 170 horses out of a population of 678 horses (25.1%) from 16 farms either died or exhibited clinical signs compatible with EIA after examination.

A leukopenia was observed in most clinically ill horses. All of the 95 horses from which sera were obtained demonstrated evidence of an anemia, the mean PCV and RBC values were 21.1 percent and $3.7 \times 10^6/\text{mm}^3$, respectively. By contrast, the normal values for horses are WBC 6.5 - 12.5/ mm^3 ($\times 10^3$), PCV 32 - 52 percent and RBC 6.5 - 12.5/ mm^3 ($\times 10^6$). Of this group of clinically ill animals 67 (72.8%) demonstrated EIA antibodies. This suggests that although a horse may display clinical signs of an infection caused by the EIA virus, detection of antibody depends on the stage of the infection and the sensitivity of the serological test employed. In a previous study within the same region it was reported that 136 out of 266 (60.2%) sera from apparently normal horses were positive for antibodies (Bamigboye, O. and Da Silva, R.M., 1981). Although their study did not analyse data based on age or sex, it is of interest that 78.2 percent of all horses of both sexes from the present study showed that clinical signs occurred mostly in the 4-9 year age group.

The EIA outbreak in the present study co-occurred with a hot, humid dry season and an increase in the population of the stable fly, Stomoxys calcitrans, in the Savannahs. Ranchers in the extreme south savannah reported noticing these flies for the first time on their ranches only three years ago. Whether this vector has migrated north to south or was mechanically transmitted by livestock from one area to the next has not yet been established. Similarly, the role of the 'Caboura' Fly (Simulium spp) in the transmission of the EIA virus is yet to be determined. The close proximity (1-35 km) of all 16 farms on which outbreaks occurred to the Brazilian Border and the relatively free traffic of livestock across the border,

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especially during the dry season, increases the necessity for greater surveillance if this disease is to be eliminated.

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BIBLIOGRAPHY

- Annual Climatological Data Summary, Guyana, Hydrometeorological Service, Ministry of Works and Transport. HYM. No. - TP 26: (1974) pp. 15-17, 90, 92.
- Bamigboye, O. and Da Silva, R.M., Br. Vet. J., 137 (1981) 538-540
- Blood, D.C. and Henderson, J.A., Veterinary Medicine, 4th Ed. Williams and Wilkins Co., Baltimore, (1975) 466.
- Coggins, L. and Narcross, N.L., Cornell Vet., 60 (1970) 330.
- Issel, C.J. and Coggins, L., JAVMA., 7 (1979) 727-732..
- The Merck Veterinary Manual. 4th Ed. Merck and Co., Inc. N.J., (1973) 254-256

TABLE I. Distribution of 110 Sick And Dead Horses According To Farm And Population in The Rupununi Savannahs

Farm	Horse Population	Dead		Sick	
		Number	Percent	Number	Percent
NORTH SAVANNAH					
Toka	20	ND	(...)	7	(35.0)
Point Ranch	31	3	(9.7)	3	(9.7)
Valemi	18	4	(22.2)	4	(22.2)
Morero	24	7	(29.2)	8	(33.3)
Karasabai	250	20	(8.0)	ND	(...)
SOUTH SAVANNAH					
Macushi	21	4	(19.1)	6	(28.6)
Red Hill	28	0	(...)	2	(7.1)
Crystal Springs	15	0	(...)	1	(6.7)
Ambrose	ND	1	(...)	ND	(...)
Shiriri	12	1	(8.3)	9	(75.0)
Dadanawa	55	0	(...)	1	(1.8)
Katoonarib	50	5	(10.0)	14	(28.0)
Sawariwau	130	25	(19.2)	12	(9.2)
Makatau	16	3	(18.8)	13	(81.3)
Aishalton	20	2	(10.0)	12	(60.0)
Santa Cruz	8	0	(...)	3	(37.5)
Total	678	75	(11.1)	95	(14.0)

ND = Not Determined

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Table II. Prevalence of Seroreactors on Farms in the Rupununi Savannahs as Determined by Immunodiffusion Tests.

Farm	Sera Examined		Percent
	Number	Positive	
Point Ranch	5	5	(100.0)
Valemi	10	9	(90.0)
Morero	11	6	(54.6)
Karasabai	8	3	(37.5)
Macushi	6	6	(100.0)
Dadanawa	16	14	(87.5)
Katoonarib	17	14	(82.4)
Sawariwau	9	8	(88.9)
Aishalton	10	2	(20.0)
Total	92	67	(72.8)

Table III. Average Blood Values of Horses in the Outbreak Area on Seven Randomly Selected Farms in the Rupununi Savannahs.

Farm	Number Animals	PCV ⁽¹⁾	RBC ⁽²⁾	WBC ⁽³⁾
Point Ranch	7	20.4	3.7	2.7
Valemi	7	18.4	3.2	4.7
Macushi	4	30.3	5.1	6.3
Dadanawa	5	17.5	3.0	7.2
Katoonarib	10	17.2	3.3	2.3
Sawariwau	9	20.1	3.4	1.8
Aishalton	8	23.8	4.3	3.6
Total	50	21.1	3.7	4.1

(1) Mean PCV (%)

(2) Mean RBC/mm³ ($\times 10^6$)

(3) Mean WBC/mm³ (10^3)

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RABIES

<u>Country</u>	<u>Species</u>	<u>No. of Cases</u> <u>/Quarter</u>	<u>Cumulative</u> <u>Total</u>	<u>No. Vaccinated</u> <u>/Quarter</u>	<u>Cumulative</u> <u>Total</u>
Grenada	Bovine	1	4	-	35
	Canine	-	-	45	226
	Feline	-	-	5	5
	Caprine	2	8		(83
	Ovine	2	2		(
Guyana	Bovine	-	5	-	
Haiti	Canine	-	-	9380	(36113*
	Feline	-	-	895	(
Suriname	Bovine	-	5	-	-
Trinidad & Tobago	Bovine	1	1	597	2378
	Buffalo	-	-	-	19
	Caprine	-	-	195	781
	Equine	-	-	15	40
	Ovine	-	-	11	58

* Cumulative Total from October 1982 - September 1983

ENZOOTIC BOVINE LEUCOSIS

<u>Country</u>	<u>Cases/Quarter</u>	<u>Cumulative Total</u>	<u>No. Deaths</u>	<u>No. Tested</u>	<u>No. Pos.</u>
Trinidad & Tobago	7	7	2	6	6

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TETANUS

<u>Country</u>	<u>Bovine</u>		<u>Caprine</u>		<u>Equine</u>		<u>Ovine</u>		<u>Porcine</u>		<u>Total</u>	
	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C
Grenada	-	-	4*	16*	-	-	4*	16*	3	-	7	29
Guyana	-	-	-	-	-	15	-	18	-	-	-	33
Jamaica +	2	8	-	35	-	14	-	-	3	43	5	100
Trinidad & Tobago	-	1	4	19	-	3	-	-	-	-	4	23

* Grouped Data

BRUCELLOSIS

<u>Country</u>	<u>Species</u>	<u>No. Tested/Quarter</u>		<u>No. Farms</u>	<u>No. Pos.</u>	<u>Cumulative</u>		
		<u>Slaughter</u>	<u>Field</u>			<u>Slaughter</u>	<u>Field</u>	<u>Pos.</u>
Barbados	Bovine	-	-	-	-	-	6	-
Jamaica +	Bovine	3517	1640	37	-	22424	14364	22
St. Lucia	Bovine	-	-	-	-	-	50	-
Suriname	Bovine	78	50	1	-	169	660	7
Trinidad	Bovine	-	1	1	-	-	3	-
& Tobago	Ovine	-	-	-	-	-	12	-

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TUBERCULOSIS

<u>Country</u>	<u>Species</u>	<u>No. Tested</u>		<u>No. Farms</u>	<u>No. Positive</u>	<u>Cumulative</u>	
		<u>/Quarter</u>				<u>No. Tested</u>	<u>No. Pos.</u>
Guyana	Bovine	-	-	-	42*	-	132*
Jamaica +	Bovine	1599		40	-	10684	4
St. Lucia	Bovine	-		-	-	50	-
Suriname	Bovine	-		-	-	1	1
Trinidad & Tobago	Bovine	-		-	-	25	-

* Slaughter House Data

HAEMOPARASITES

<u>Country</u>	<u>Species</u>	<u>No. Cases</u>		<u>No. Deaths</u>	<u>No. Tested</u>	<u>No. Farms</u>	<u>Cumulative No. of Cases</u>	
		<u>/Quarter</u>					<u>Ana</u>	<u>Piro</u>
		Ana	Piro					
Barbados	Bovine	-	-	-	-	-	33	4
	Canine	-	-	-	-	-	-	1
	Caprine	-	-	-	-	-	15	-
	Equine	-	-	-	-	-	-	3
	Ovine	-	-	-	-	-	1	-
Grenada	Bovine	1	-	-	-	1	10	-
Guyana	Bovine	1	-	-	-	1	119	36
Jamaica +	Bovine	12	-	-	-	12	58	-
	Canine	-	-	-	-	-	-	20
	Caprine	-	-	-	-	-	1	-
Trinidad & Tobago	Bovine	231	24	6	7	-	670	35
	Caprine	-	-	-	-	-	1	-

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LEPTOSPIROSIS

<u>Country</u>	<u>Species</u>	<u>No. Tested</u> <u>/Quarter</u>	<u>No.</u> <u>Positive</u>	<u>Cumulative</u>	
				<u>No. Tested</u>	<u>No. Positive</u>
Barbados	Bovine	-	-	13	12
	Canine	-	-	11	8
	Equine	-	-	13	13
Guyana	Bovine	72	22	958	435
	Canine	-	1	-	1
	Porcine	18	1	18	1
	Human	111	27	346	86
Jamaica +	Bovine	165	130	1758	872
	Canine	29	5	118	36
	Caprine	-	-	116	40
	Human	33	1	357	84
	Ovine	-	-	13	1
	Porcine	1	1	2	1
Trinidad & Tobago	Bovine	-	-	2	-
	Ovine	-	-	12	-

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ENDOPARASITES

Country	Bovine		Canine		Caprine		Equine		Feline		Ovine		Porcine		Zoo		Total	
	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C		
Barbados	-	17	-	117	-	22	-	12	-	3	-	39	-	1	-	-	211	
Grenada	160	400	56*	168*	466*	1477*	-	20	56*	168*	466*	1477*	196	553	1	1	879	2619
Guyana	100	1759	26	101	4	376	5	25	2	7	5	327	1	523	-	14	143	3132
Haiti	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3734**
Jamaica +	211	1680	-	-	151	1348	5	136	-	-	79	692	80	1061	-	-	526	4917
Trinidad & Tobago	217°	716°	-	2	119	414	1	2	-	-	28	67	22	37	-	-	387	1238

* Grouped Data - Dogs & Cats
Sheep & Goats

** From October 1982 - September 1983

o Includes Bufaloes

INFECTIOUS POULTRY DISEASES

Country	Aspergillosis	CRD	Coryza	Encephalomalacia	Endoparasites	Fowl Pox	Gumboro Disease	Infectious Bronchitis	Leucosis	Marek's Disease	Mycoplasmosis	Newcastle Disease	Infectious Synovitis
<u>Guyana</u>	No. of Cases Diagnosed	1	-	-	-	-	2	-	-	6	-	-	1
No. of Birds Affected	10	-	-	-	-	-	50	-	-	289	-	-	86
Mortality	3	-	-	-	-	-	40	-	-	281	-	-	45
<u>Jamaica +</u>	No. of Farms Affected	-	-	20	-	-	-	17	-	-	-	-	-
No. of Birds Affected	-	-	11000	-	-	-	-	14000	-	-	-	-	-
No. Vaccinated	-	-	-	-	-	-	-	-	80000	-	2500000	-	-
<u>Trinidad & Tobago</u>	No. of Farms Affected	5	79	3	1	53	11	15	-	-	1	6	63
No. of Birds Affected	6800	757200	500	30000	100500	1500	136500	-	-	-	3000	55000	128700

ENDOPARASITES

Country	Bovine		Canine		Caprine		Equine		Feline		Ovine		Porcine		Zoo		Total	
	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C		
Barbados	-	17	-	117	-	22	-	12	-	3	-	39	-	1	-	-	-	211
Grenada	160	400	56*	168*	466*	1477*	-	20	56*	168*	466*	1477*	196	553	1	1	879	2619
Guyana	100	1759	26	101	4	376	5	25	2	7	5	327	1	523	-	14	143	3132
Haiti	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3734**
Jamaica +	211	1680	-	-	151	1348	5	136	-	-	79	692	80	1061	-	-	526	4917
Trinidad & Tobago	217°	716°	-	2	119	414	1	2	-	-	28	67	22	37	-	-	387	1238

* Grouped Data - Dogs & Cats
 Sheep & Goats

** From October 1982 - September 1983

o Includes Buffaloes

INFECTIOUS POULTRY DISEASES

Country	Aspergillosis	CRD	Coryza	Encephalomalacia	Endoparasites	Fowl Pox	Gumboro Disease	Infectious Bronchitis	Leucosis	Marek's Disease	Mycoplasmosis	Newcastle Disease	Infectious Synovitis
<u>Guyana</u>	No. of Cases Diagnosed	1	-	-	-	-	2	-	-	6	-	-	1
	No. of Birds Affected	10	-	-	-	-	50	-	-	289	-	-	86
	Mortality	3	-	-	-	-	40	-	-	281	-	-	45
<u>Jamaica +</u>	No. of Farms Affected	-	-	20	-	-	-	17	-	-	-	-	-
	No. of Birds Affected	-	-	11000	-	-	-	14000	-	-	-	-	-
	No. Vaccinated	-	-	-	-	-	-	-	80000	-	250000	-	-
<u>Trinidad & Tobago</u>	No. of Farms Affected	5	79	3	1	53	11	15	-	-	1	6	63
	No. of Birds Affected	6800	757200	500	30000	100500	1500	136500	-	-	3000	55000	128700

<u>Country</u>	<u>Bovine</u>		<u>Canine</u>		<u>Caprine</u>		<u>Equine</u>		<u>Feline</u>		<u>Ovine</u>		<u>Porcine</u>		<u>Total</u>	
	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C
<u>MASTITIS</u>																
Grenada	19	56	-	-	26*	75*	-	-	-	-	26*	75*	6	33	51	164
Guyana	298	564	-	-	-	20	-	-	-	-	-	-	-	72	298	656
Jamaica+	186	1068	-	-	2	49	-	-	-	-	-	-	7	43	195	1160
Trinidad & Tobago	215	598	-	-	6	31	-	-	-	-	1	1	-	1	222	631
<u>MESTRITIS</u>																
Grenada	2	2	-	-	-	-	-	-	-	-	-	-	12	12	14	14
Guyana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43
Jamaica+	79	544	-	-	18	138	-	-	-	1	8	33	7	70	112	786
Trinidad & Tobago	76	286	-	-	-	9	-	-	-	-	1	2	33	66	110	363
<u>NANCE</u>																
Barbados	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	4
Grenada	-	-	5	18	-	-	-	-	-	-	-	2	10	13	15	33
Guyana	-	-	-	9	1	9	-	1	-	-	-	-	-	50	1	60
Jamaica+	8	47	-	-	-	-	2	4	-	-	-	-	9	57	19	108
Trinidad & Tobago	5	14	-	-	3	3	-	-	-	-	2	3	5	33	15	53

* Grouped Data

BLACKLEG

<u>Country</u>	<u>Species</u>	<u>No. of Cases</u>		<u>No. Vaccinated</u>		<u>No. of Farms</u>	
		Q	C	Q	C	Q	C
Jamaica+	Bovine	-	-	2889	15386	512	2649
Trinidad & Tobago	Bovine	-	2	-	-	-	-

SWINE ERYSIPELAS

<u>Country</u>	<u>No. of Cases</u>		<u>No. Vaccinated</u>		<u>No. of Farms</u>	
	Q	C	Q	C	Q	C
Jamaica +	-	-	808	3743	32	174
Trinidad & Tobago	15	75	-	-	-	-

SCREWWORMS

<u>Country</u>	<u>Bovine</u>		<u>Caprine</u>		<u>Equine</u>		<u>Ovine</u>		<u>Porcine</u>		<u>Total</u>	
	Q	C	Q	C	Q	C	Q	C	Q	C	Q	C
Guyana	-	940	-	43	-	27	-	63	-	-	-	1073
Trinidad & Tobago	7	28	3	8	-	2	2	3	1	6	14	48

REPRODUCTIVE HERD HEALTH

<u>Country</u>	<u>No. of Cows Examined</u>		<u>No. of Farms</u>	<u>Anoestrus</u>		<u>Conception Failure</u>		<u>Other Pathology</u>		<u>No. Vaccns Campylobacter</u>		<u>No. of Farms</u>		<u>No. Bulls Examined</u>	
	Q	C		Q	C	Q	C	Q	C	Q	C	Q	C	Q	C
Jamaica+	2320	11421	42	-	-	-	-	-	-	782	3847	29	-	-	194
Trinidad & Tobago	853	-	78	116	294	79	200	20	60	-	-	-	-	-	-

Jamaica + - July Data Only

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IMPORT INSPECTIONS -- TRINIDAD & TOBAGO

<u>Country of Origin</u>	<u>Avian</u>	<u>Bovine</u>	<u>Canine</u>	<u>Caprine</u>	<u>Equine</u>	<u>Ovine</u>	<u>Porcine</u>	<u>Turtles</u>	<u>Total</u>
Barbados	-	-	7	-	-	-	-	-	7
Canada	18	-	20	-	-	-	-	-	38
Curacao	50	-	-	-	-	-	-	-	50
England	54	-	114	-	-	-	-	-	168
Germany	-	-	1	-	-	-	-	-	1
Grenada	-	-	-	372	8	796	-	-	1176
Guyana	54	-	-	-	-	-	-	4	58
Jamaica +	-	12	2	-	1	-	-	-	15
Netherlands	4489	-	5	-	-	-	-	-	4494
New Zealand	62	-	-	-	-	-	-	-	62
Puerto Rico	35	-	-	-	-	-	-	-	35
St. Vincent	-	-	1	43	1	237	2	-	284
USA	55	-	-	-	10	-	-	2000	2065
Venezuela	-	-	1	-	-	-	-	-	1
Total	4817	12	151	415	20	1033	2	2004	8454

GUYANA

Canada - Cats (2)
Cuba - Dogs (3)
USA - Cats (2)

ANIMAL DISEASE REPORTING PERSONNEL

<u>Barbados:</u>	Dr. Trevor King Senior Veterinary Officer Ministry of Agriculture, Food & Consumer Affairs Animal Health Services The Pine, St. Michael	Dr. Vincent St. John Veterinary Pathologist Veterinary Laboratory St. Michael
<u>Dominica:</u>	Dr. W.M. Christian Chief Veterinary Officer Ministry of Agriculture Roseau, Commonwealth of Dominica	
<u>Grenada:</u>	Dr. K.S. Manyam Chief Veterinary Officer Ministry of Agriculture, Rural Development & Cooperatives P.O. Box 141, St. George's Tanteen	Miss Judy Baldeau Laboratory Technician Ministry of Agriculture, Rural Development & Cooperatives P.O. Box 141, St. George's Tanteen
<u>Guyana:</u>	Dr. R.N.D. Raja Principal Agriculture Officer (Ag.) Ministry of Agriculture Veterinary & Livestock Division Regent & New Garden Sts. G'town	Dr. Lennox Applewhaite Senior Veterinary Officer Veterinary Laboratory Ministry of Agriculture Mon Repos, East Coast Demerara
<u>Haiti:</u>	Dr. Fred Calixte Chef, Service Veterinaire DARNDR Damien, Port-au-Prince	Dr. Max Millien Chef, Laboratoire Veterinaire DARNDR Damien, Port-au-Prince
<u>Jamaica:</u>	Dr. Clifford L. Grey Director of Veterinary Services (Ag.) Ministry of Agriculture P.O. Box 309, Kingston	Dr. George Hylton Deputy Director Linton McDonnough Memorial Veterinary Laboratory P.O. Box 309, Kingston
<u>St. Lucia:</u>	Dr. Keith Scotland Chief Veterinary Officer Ministry of Agriculture Castries	Mr. John Simon Laboratory Technician Ministry of Agriculture Castries
<u>Suriname:</u>	Dr. Robert Lieuw-a-Joe Chief, Veterinary Inspection Ministry of Agriculture P.O. Box 1016, Paramaribo	Dr. Ken Moll Veterinary Diagnostic Laboratory P.O. Box 1016, Paramaribo
<u>Trinidad & Tobago:</u>	Dr. Vincent G. Moe Technical Officer - Livestock Div. Ministry of Agriculture St. Clair Circle, Port of Spain	Dr. Edward P. Cazabon Veterinary Pathologist Veterinary Diagnostic Laboratory Curepe, Port of Spain



