

# OUTBREAKS OF BLACKLEG OF CATTLE IN NORTHERN NIGERIA (1964-2003)

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**Summary:** Blackleg is an endemic disease in both developed and developing countries and is a well-known cause of financial loss to cattle raisers in many parts of the world. The disease is prevalent in the United States of America, India and other parts of Asia and Europe, Latin America, and Africa. In Nigeria, the economic losses of Zebu cattle alone to the disease have been estimated at US \$4. 3 million (~600 million naira) annually. A retrospective study was carried out to ascertain the current status of the disease in Northern Nigeria, and it was observed that the traditional style of livestock production by the transhumance Fulani pastoralists of rural Nigeria, who own livestock resources in the country pose a great challenge to the control of the disease. It was concluded that blackleg is still endemic in Nigeria, and its effective control can only be achieved if the traditional livestock production system of the nomads of rural Nigeria is improved.

**Key words:** blackleg; cattle; Northern Nigeria; outbreaks; retrospective study

## Introduction

Blackleg is a disease affecting cattle, sheep and other ruminants, caused by *Clostridium chauvoei* and was first reported in 1870 (1). In Nigeria, the disease was first reported in 1929 and has remained a major problem of cattle in the country (2). Although vaccination against the disease has been carried out in Nigeria since 1930, many sporadic outbreaks have been recorded annually (3).

Blackleg is endemic in both developed and developing countries and is a well-known cause of financial loss to cattle raisers in many parts of the world (4). The economic losses of ruminants to the disease have not been quantified in most parts of the world, but in Nigeria, the losses of Zebu cattle alone to the disease have been estimated at US \$4.3 million annually (~600 million naira) (5). In the United States of America, Latin America, India and other parts of Asia and Europe, the economic losses of ruminants to blackleg have not been estimated, but it has been reported that the disease causes

major economic losses in cattle and minor losses in sheep (4,6-7). High annual rainfall has been associated with increased outbreaks of the disease in ruminants (3,8). In this study, we present outbreaks of the disease for about 40 years (1964-2003) and the possible ways of effecting efficient control of the disease in Nigeria.

## Materials and methods

A 40 year retrospective data on annual outbreaks of blackleg (1964-2003) was collected from the Federal Ministry of Agriculture and Natural Resources Archives at Kaduna and Abuja, Nigeria and the National Veterinary Research Institute (NVRI), Vom, Nigeria. Similar data of annual outbreaks of the disease in 12 states of Northern Nigeria was also collected from the Veterinary Services Division of these states. The data was recorded according to the number of outbreaks (N. O.), number of cattle in herds infected (N. C. I.) and mortality (M).

## Results

The outbreaks of blackleg of cattle in Northern Nigeria are presented in Tables 1-3. Outbreaks were

low in some years and states and high in others. During many of the years investigated, there were few records of outbreaks of all diseases including blackleg.

**Table 1:** Blackleg outbreaks in the provinces of Northern Nigeria (1964-1970)

Year		Provinces												
		Kano	Sokoto	Katsina	Borno	Sardauna	Bauchi	Zaria	Adamawa	Plateau	Niger	Benue	Kabba	Ilorin
1964	N.O.	4			14	24	19	2	22	6	4	31		1
	N.C.I.	230			2409	-	1452	132	3353	1020	741			12
	M	65			81	50	39	2	164	15	13			1
1965	N.O.	1			17	12	38	1	12	9	3			3
	N.C.I.	70			3298	1087	7126	144	2611	1632	698			573
	M	6			198	38	262	1	105	33	3			33
1966	N.O.	8	3	1	38	1	49	10	16	11	15	1		
	N.C.I.	945	414		3444	30	5502	1785	4300	1923	5127	300		
	M	44	18		181		241	73	159	37	194	10		
1967	N.O.	4	3		12	7	36	2	17	9	9	3		
	N.C.I.	523	186		1824	2430	3995	390	2888	1140	1558	484		
	M	20	5		50	39	109	14	105	23	49	24		
1968	N.O.	12	1	5	11	12	20	12	3	25	8	24		
	N.C.I.	1230	502	315	1445	2031	1214	2734	716	11284	817			
	M	66	35	22	43	72	62	53	26	124	39	6		
1969	N.O.	13		2	1	8	28	17	2	16	8	9		
	N.C.I.			26	8	7655	3254	3878	314	456	2554	498		
	M	35		7	1	60	98	240	14	100	109	50		
1970	N.O.				9	13	28	56	10	14		2		
	N.C.I.				1722	-	2756	11388	1138	1391				
	M				79	42	107	46	77	85		11		

N.O. → Number of outbreaks

N.C.I. → Number of cattle in the herds infected

M → Mortality (Number of dead animals)

**Table 2:** Blackleg outbreaks in 5 states of Northern Nigeria (1971-1975)

Year		North Eastern state	North Western state	Benue Plateau state	North Central state	Kwara state
1971	N.O.	11	21	26	80	1
	N.C.I.	2460	4180	468	1375	280
	M	9	216	17	187	12
1972	N.O.	18	10	12	24	
	N.C.I.	3490	5419	620	4089	
	M	120	42	15	120	
1973	N.O.	8	1	3	16	1
	N.C.I.	214	200	418	2184	412
	M	22	11	19	34	1
1974	N.O.	22	12	10	20	
	N.C.I.	5180	4112	384	4010	
	M	18	216	11	218	
1975	N.O.	1	12	6	27	
	N.C.I.	211	4020	2116	4124	
	M	84	118	25	296	

**Table 3:** Outbreaks of blackleg in 11 states of Northern Nigeria (1976-2003)

Year		Gongola	Benue	Plateau	Bauchi	Niger	Kaduna	Kano	Sokoto	Borno	Gombe	Taraba
1976	N.O.		2									
	N.C.I.		149									
	M		4									
1977	N.O.											
	N.C.I.											
	M											
1978	N.O.			1		1			1			
	N.C.I.			170		63			1			
	M			2		-						
1979	N.O.			4	1	2	7			1		
	N.C.I.			168	40	144	206			144		
	M			3	2	8	23			1		
1980	N.O.			2		5						
	N.C.I.			1080		153						
	M			75		11						
1981	N.O.			1		1						
	N.C.I.			1000		74						
	M			20		13						
1982	N.O.											
	N.C.I.											
	M											
1983	N.O.			1		4						
	N.C.I.			66		231						
	M			2		17						
1984	N.O.			1		1	1					
	N.C.I.			44		132	96					
	M			1		6	4					
1985	N.O.			2	1	5	4					
	N.C.I.			58	20	320	506					
	M			2	1	22	34					
1986	N.O.			2	3	2						
	N.C.I.			60	154	76						
	M			2	3	4						
1987	N.O.			2			1					
	N.C.I.			78			1					
	M			3			1					
1988	N.O.			3	4			3				
	N.C.I.			98	211			259				
	M			2	5			17				
1989	N.O.			4	4	3		2				
	N.C.I.			100	667	210		63				
	M			3	5	13		10				
1990	N.O.			1	1		2					
	N.C.I.			36	31		80					
	M			2	2		13					
1991	N.O.	3		1		1		2				
	N.C.I.	1092		46		75		176				
	M	48		3		4		15				

(Tab. 3, continuation)

1992	N.O.			1		3					
	N.C.I.			20		59					
	M			5		2					
1993	N.O.			1		1		1			
	N.C.I.			32		70		27			
	M			3		3		5			
1994	N.O.			1		4	18			56	
	N.C.I.			38		127	450			1580	
	M			2		5	29			85	
1995	N.O.			1	3	3			3		151
	N.C.I.			44	376	83			1999		742
	M			1	12	4			18		55
1996	N.O.			1	2	2	2				1
	N.C.I.			40	55	50	205				162
	M			2	5	3	25				42
1997	N.O.			1	2						4
	N.C.I.			56	88						102
	M			2	4						2
1998	N.O.		19	1	4						7
	N.C.I.		842	68	456						1179
	M		12	2	26						33
1999	N.O.		48	1			3				2
	N.C.I.		680	51			1840				11
	M		23	1			64				5
2000	N.O.		10	1		1					1
	N.C.I.		728	28		130					55
	M		20	3		4					3
2001	N.O.			1	6						18
	N.C.I.			34	108						652
	M			1	5						20
2002	N.O.			1				1			
	N.C.I.			56				180			
	M			2				3			
2003	N.O.										50
	N.C.I.										1870
	M										58

## Discussion

The results of this study suggest that there are still pockets of annual outbreaks of blackleg of cattle in Northern Nigeria. The Fulani pastoralists of rural Nigeria are the custodians of livestock resources in Nigeria, with about 70-80% ownership of livestock production in the country (9). Some states investigated in the study had few blackleg outbreaks, because of poor record keeping. It is therefore possible to insinuate that outbreaks of the disease may have

occurred in those states during the period investigated, but were not recorded.

In Nigeria, the control of blackleg has been difficult because of ineffective vaccination policy, lack of adequate logistics such as vehicles to carry out vaccination activities, lack of facilities to maintain the cold chain for vaccine storage (hence inadequate potent vaccines) and lack of disease reporting by the nomads (3). Livestock disease control in Nigeria is the responsibility of government and therefore, if reports of outbreaks are not made to the authorities,

it is difficult for government to know the status of blackleg in a given locality. Unfortunately, in the face of outbreak or rumour of one, the nomads move away in mass, from the so called danger areas, and even those of them whose cattle are infected move away, thereby serving as a source of infection to other supposedly healthy herds (3). The nomadic Fulani pastoralists prefer to use herbal remedies to treat diseases of their livestock, including blackleg (10), and only report disease if their herbal preparations do not provide the desired therapeutic results. In most cases, disease outbreaks are reported only if there is uncontrollable cattle mortality. The present study on the outbreaks of blackleg of cattle in Northern Nigeria is important because, in Africa, there is migration of cattle between neighbouring countries, and a disease that is endemic in one country is a potential danger to neighbouring countries. Other authors (3) suggested that to achieve effective control of blackleg in Nigeria and the rest of Africa, governments of the sister African states must intensify awareness campaigns among the nomads, through the Nomadic Education Commissions of the respective countries. It is concluded that blackleg is still endemic in Nigeria, and its effective control can only be achieved if the traditional style of livestock keeping by Nomadic Fulani pastoralists who own most of Nigeria's livestock resources is improved. This is possible if they are settled and encouraged by government to reduce transhumance, with adequate support and provision of modern livestock rearing facilities.

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## **IZBRUHI ŠUMEČEGA PRISADA (GANGRENA EMPHYSEMATOSA) PRI GOVEDU V SEVERNI NIGERIJU (1964 - 2003)**

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**Povzetek:** Šumeči prisad je endemična bolezen v razvitih ter državah v razvoju in je dobro poznan vzrok finančnih izgub pri rejcih goveda v več delih sveta. Bolezen je prevladujoča v Združenih državah Amerike, Indiji in drugih delih Azije, v Evropi, Latinski Ameriki in Afriki. V Nigeriji so bile ekonomske izgube pri govedu Zebu ocenjene na 4,3 milijona dolarjev (~600 milijonov nigerijskih niarov). Z retrospektivno študijo smo želeli potrditi trenutni status bolezni v severni Nigeriji in ugotovili, da je tradicionalni način govedoreje s sezonskim potovanjem čred pastirjev Fulani v ruralnih delih Nigerije, ki premorejo večino živine v državi, velik izziv za kontrolo bolezni. Šumeči prisad je v Nigeriji še vedno endemična bolezen. Učinkovito kontrolo pa bo mogoče doseči le z izboljšanjem tradicionalne reje govedi nomadov na podeželskih področjih Nigerije.

**Ključne besede:** šumeči prisad; Severna Nigerija; izbruhi; retrospektivna študija