

THE ANIMAL DISEASE CONTROL PROJECT – AN OVERVIEW

INTRODUCTION

Farmers in Kerala have been facing great economic loss due to loss in life and reduction in milk yield due to Foot and mouth Disease every year. Besides this the State incurred large economic losses as a result of the inability to produce and ship processed animal products. It was estimated that the country is losing over Rs 4000 Crore annually due to FMD.

Under these circumstances Government of Kerala took the stern decision to implement control of this dreaded disease in the State. Since the State does not have the economic resources to implement such a large scale project on its own, it was decided to approach an external agency such as National Dairy Development Board to provide infrastructural and monetary support. Consequent to a series of discussions at Government level, NDDB agreed in principle to launch a joint venture programme to control Foot and Mouth Disease in the state. A working Group was formed to chalk out modalities for the implementation of such a project. On the basis of the report of the Working Group, a MOU was signed on 27th March, 2004 between NDDB and the Government of Kerala to implement the Animal Disease Control Project in Kerala, and Government vide G. O. (Rt) 176/04/AD dated 24/8/2004 issued orders for implementation of the Project. The Project was named “GORAKSHA”.

CONSTITUTION OF MANAGEMENT COMMITTEE

Government vide G.O (Rt) No.789/2004/AD dated 29/5/2004 constituted a Project Management Committee for periodical review of the Project with the Agricultural Production Commissioner as its chairman and the following officers as its members:

- Agriculture Production Commissioner - Chairman
- Secretary, Animal Husbandry, GOK
- Secretary, Local Self Government
- Additional Secretary, Finance Department, GOK
- Member Secretary, Kerala State Planning Board
- Chairman, “Milma” or his nominee.
- Director, Animal Husbandry
- Director, Dairy Development
- Dean, College of Veterinary and Animal Sciences, Mannuthy
- Dean, College of Veterinary and Animal Sciences, Pookode, Wyanad.

- Project Adviser from NDDB
- Representative from NDDB
- Project Coordinator, ADCP, Member convener.

The Project Management Committee met nine times till March 2006.

PROJECT MANAGEMENT UNIT

A Project Management Unit at State level headed by an Additional Director (AH) with following Supportive Staff has been formed to implement the programme.

1. Project coordinator (Additional Director, AH)
2. Two Officers (Joint Directors)
3. IT officer
4. Accounts Officer
5. Veterinary Surgeon (One)
6. Seven Supporting Staff (Technical Assistants – 2, Clerks – 2, Peons – 2, Driver – 1)

At District level a District coordinator, District Epidemiologist, District Laboratory Officer and two supporting staff were identified to implement the programme.

While the Project Management Unit at State level is located in a rented building, most of the District offices are located at respective district head quarters of AH Department.

Dr. R. Vijayakumar, Additional Director worked as the Project Coordinator from May 2004 to October 2005 and presently Dr.K.G.Suma, Additional Director is holding additional charge of the Project Coordinator. All the staff working in the Projects through out the State is holding additional charge.

National Dairy Development Board as per the MOU has positioned Dr. R. K Nair as the Project Advisor to the Project.

COMPONENTS OF THE PROJECT

The various components of the Project are:-

1. Vaccination
2. Manpower development
3. Epidemiological Studies
4. Out break Management
5. Seromonitoring
6. Extension and Publicity
7. Animal Movement management
8. Information management

LEGISLATIVE SUPPORT:

Government have enacted necessary legislation to support the implementation of the Project and ensure compliance of the farming and business community.

- GOK has issued notification amending the Kerala Prevention and Control of Animal Diseases Rules 1968 providing compulsory vaccination against FMD and identification of vaccinated animals by ear tagging on cost basis (GO No.176/04/AD dt.24/8/2004)
- Gov. Order to strengthen surveillance and checking FMD at State borders (GO (MS) No. 36/2004/AD dated 19/3/2004).
- Compulsory disease reporting.
- GOK vide GO No.1350/2004/AD dt 3/9/2004 formed :
 - (1) District Level Monitoring Committees with District Panchayats President as Chairman, District Collector as Vice Chairman, District Dairy Development Officer, Board of Directors of the Regional Milk Union, Secretaries of Corporation/Municipalities and members of District Panchayats as members and District Animal Husbandry Officer as Convener.
 - (2) Panchayats Level implementation committee with Panchayats President as Chairman, Panchayats members, Presidents of Dairy Cooperative Societies as members and Veterinary Officer as Convener.
 - (3) Government *vide* its GO (Rt) No. 582/05/AD dated 13.4.2005 has ordered strict inspection of animals entering the state through the seventeen check posts. All animals entering the state must carry a certificate of vaccination against FMD and

must be free of disease at the time of entry. A red ear tag is affixed to each animal for subsequent identification, and an administrative charge is levied at the rate of Rs. 8/- per large animal and Rs. 5/- per small animal.

ACTIVITIES UNDERTAKEN

1. **Targeted Vaccination:** A Target of 85% of the susceptible animal population (Cattle, buffalo, goats and sheep) was fixed for vaccination against FMD in order to confer “herd immunity” upon the entire population.
2. **Training:** Training has been imparted to the following staff of the AHD at IIL, Hyderabad.
 - All Senior Officers in the PMU, Directorate of AH, District Animal Husbandry Officers.
 - All District Coordinators of the Project.
 - All District Epidemiologists.
 - All District Laboratory Officers.
 - All Sero monitoring personnel.
 - Training imparted at District Level:
 - All Field Veterinary Officers at their respective District Head quarters.
 - Livestock Inspectors at Panchayat/Taluk Level. (The programme is ongoing)
 - Training was also imparted to all the District Coordinators on internet based vaccination reporting system at Trivandrum.
 - A working manual in Malayalam has been printed and distributed for the use of livestock Inspectors.

GOK has agreed not to transfer the officers of the Project for at least five years.

3. **Publicity:** The following plans were put in place before the commencement of vaccination and continued during the vaccination.
 - Electronic media: A film clip of about 30 second duration has been short advocating all the farmers to get their animals vaccinated against FMD as they have done to protect their children against Polio, with a renowned film star Mr. Suresh Gopi.
 - Wall posters depicting a still from the above have been pasted in public places.
 - Print media: Advertisements in C&D categories of Malayalam newspapers at government concessional rate.
 - Appeals by the Hon’ble Minister and Chairman, MILMA in Malayalam news papers.

- Posters (one with a farmer and the other with a Veterinarian) at Public places like Panchayats, Dairy Coops and Veterinary Hospitals.
- Handouts – Appeal from the minister to all the farmers.
- Appeal from the Regional Milk Unions and Dairy Development Department.
- Loud speaker announcements and bit notices at Panchayat level during vaccination.

4. Vaccine Supply and Storage: FMD Vaccine for the vaccination of animals under the Project is being procured from IIL Hyderabad and supplied directly to the State by the NDDDB. The vaccine is an oil adjuvanted emulsion for intramuscular use, and contains antigens for the FMD strains O, A and Asia-1.

The vaccine is stored in five walk-in coolers located at Thiruvananthapuram, Aluva, Thrissur, Kozhikode and Kannur. The coolers are provided with round the clock power supply, with generator backup in case of emergency.

Vaccines are supplied to the field once in three days so as to ensure that wastage is reduced to a minimum. All hospitals and dispensaries are equipped with refrigerators/coolers for vaccine storage, and all vaccination teams are supplied with cool pails/thermocool boxes to ensure that the cold chain is maintained right down to the implementation level.

5. Mass Vaccination Programme:

- In the first phase** of the Mass Vaccination Programme the northern eleven districts of Kerala (Alappuzha, Kottayam, Idukki, Ernakulam, Thrissur, Palakkad, Malappuram, Kozhikode, Kannur, Wyanad and Kasargode) were included.
- Micro-level planning** and formation of vaccination squads were done before commencement of vaccination. Each vaccination squad comprises of:
 1. Veterinary Officer/Senior Livestock Inspector
 2. Livestock Inspector
 3. Attendant/Helper from AHD/Panchayats/Milk societies.

Approximately 2000 squads have been formed in the state to cover vaccinations.

The veterinary officer in charge of a Panchayat coordinates the vaccination programme in his area and reports to the Taluk coordinator. The Senior Veterinary Officer in the rank of an Assistant/Deputy Director in a Taluk is made as the Taluk Coordinator. He

collects the money from the Veterinary Officers of his Taluk and remits it to the Corpus fund account with State Bank of Travancore (SBT).

- c. **During the first round of FMD vaccinations, a period of 20 days from October 15, 2004** was allotted for the completion of the Programme. However near the end, it became necessary to extend the Programme period due to unforeseen interferences from various quarters.
- d. **At district level, the District Coordinators** as well as the District Animal Husbandry Officers monitored the activities.
- e. **One Additional Director of AHD camped** at each region (Northern region at Kozhikode, Central Region at Ernakulam and Southern Region at Trivandrum), coordinating the activities of 3-4 districts during the vaccination period.
- f. **Depending on the availability of staff**, crisis teams have been formed in each district to attend to any outbreaks reported.
- g. **During the Vaccination Programme**, daily performance reports were submitted by telephone from the eleven districts to the Project Management Unit, where the data were collated and a Daily Progress Report was prepared. The report was then submitted to the Hon'ble Minister for Animal Husbandry, the Agricultural Production Commissioner, the Secretary to Government (AH & DD) and the Director of Animal Husbandry at the end of the day.
- h. **During the vaccination programme**, several reports of a misleading and malicious nature appeared in a number of the leading vernacular and national dailies, seemingly with the sole intention of sabotaging the Project and arousing fear in the farming community regarding the safety and efficacy of the vaccine being used and the mode of administration. These reports appear to have been generated by a section of the Department's officers, whose purpose remains unknown.
- i. **In the aftermath of these adverse media reports**, a large number of casualties were ascribed to the vaccination programme by the general public, and farmers often refused to allow their animals to be vaccinated, despite being warned of the legal consequences of failing to do so.

- j. **As a response to these events**, the Government appointed an Expert Committee to probe the casualties and other untoward incidents attending the programme.

The Committee was convened by Dr. Udayavarman, Additional Director and consisted of Dr. Saseendranath M.R. & Dr. Vijayan N, experts from the College of Veterinary & Animal Sciences Mannuthy, Dr. Franklin from MILMA, along with Dr. R.K.Nair, Project Advisor, NDDB.

The Expert Committee visited all the districts included in the programme and held extensive discussions with the officers and farmers in the field. A report was then published wherein the Committee outlined its findings on the events of the vaccination programme and the casualties that occurred during the programme.

The Committee found that of all the deaths ascribed to the vaccination programme, only 29 (11 cattle and 18 goats) could be attributed to anaphylactic shock as a direct result of vaccination.

- k. **The programme was concluded** on the 3rd of November 2004 twenty days after its commencement. The left out animals were vaccinated during 15th to 12th May 2005.
- l. **Vaccination Achievement:** Although it was not possible to achieve the projected target of vaccinating 85% of the susceptible animal population, the officers in the field put up a performance that is still commendable, especially in view of the extreme levels of adversity they faced in the field.
- m. **The IInd Round of ADCP and the IIIrd Round of FMDCP** were conducted together from November 28 2005 to 31 December 2005, and a Leftover Round was conducted from 1 April 2006 to 14 April 2006.

EPIDEMIOLOGICAL STUDIES:-

As part of ADCP, under Epidemiological Studies, a round the clock emergency unit to monitor outbreaks of Animal Diseases has been started in the Project Management Unit of the ADCP at State level. An Asst. Director and three Veterinary Surgeons with a vehicle and driver are in place through out the day night for 365 days.

FMDCP OF GOVERNMENT OF INDIA

In Kerala, an FMDCP (Foot and Mouth Disease Control Programme) financed by Government of India is being implemented in the three southern districts of Thiruvananthapuram, Kollam and Pathanamthitta. As agreed upon when the ADCP started operating in the state, the activities of the FMDCP were merged along with the ADCP. The first phase of FMDCP was completed in two periods, one during February 2004 and the other in July 2004. The second phase of FMDCP in the three southern districts was completed along with the left out vaccinations carried out in the northern eleven districts during 15th April to 12th May 2005.

SECOND ROUND OF VACCINATIONS UNDER ADCP

The second round of ADCP and the third round of FMDCP vaccinations were started from 28th November to 31st December 2005. Because of unusual rains and flood in Tamilnadu and subsequent delay in full supply of vaccination materials the actual vaccination could be started from 1st December 2005 only through out the State. It was decided to carry out the second round of ADCP in the eleven northern districts and the FMDCP vaccination programme in the three southern districts concurrently. This could save a lot of expenditure in advertisement and other pre-preparation expenses including the supply and positioning of vaccine and vaccination materials.

During this period, several minor outbreaks of FMD were reported in some districts of the state. In these districts, containment vaccination was undertaken under the component "Outbreak Management". In some districts, there were outbreaks of diseases other than FMD, such as HS: in these locations, FMD vaccination was halted until the disease was contained, and FMD vaccination was resumed during the month of January 2006.

SEROMONITORING :-

The serum samples on day zero as well as on the 21st day after vaccination are being taken for Seromonitoring work. These samples from northern districts from Kozhikode to Thrissur are being tested at the District Laboratory at Palakkad and those from Palakkad and other districts at IAH & VB Palode.

Samples from the districts of Kasargode, Kannur and Wyanad are being tested at the new laboratory established at the College of Veterinary & Animal Sciences, Pookode, Wayanad.

The result so far obtained shows a very good titer value indicating good antibody development in the vaccinated animals.

ANIMAL MOVEMENT MANAGEMENT

The Government of Kerala has taken steps to ensure that movement of animals into the state is strictly controlled as per its Order GO (Rt) No. 582/05/AD dated 13.4.2005.

The number of animals including cattle and goat which had entered the State through the 17 check-posts during 2004-05 and 2005-06 (up to January 2006) were 4, 75,966 and 5, 17,842 respectively. Besides there are many bye-routes through which animals are being brought in to the State from neighboring States.

OTHER ACTIVITIES

The Animal Disease Control Project is currently implementing the ASCAD (Assistance to State for Control of Animal Diseases) Project of the Government of India, under which a mass vaccination programme is being conducted against Ranikhet Disease and Duck Plague throughout the state. This programme commenced on the 1st of August 2005 and will extend to the 21st of the month. Reports from the field indicate that in spite of difficulties imposed by the severity of the weather conditions and the lack of personnel, the programme is remarkably successful.

FINANCIAL

The Project is operated using Funds received from National Dairy Development Board, Government of Kerala and Government of India.

Table I: ADCP Phase I Performance

District	Total Population	Target Population	Cattle	Buffalo	Goat	Sheep	Total	% Achieved
Palakkad	397221	337638	124279	3292	40298	201	168070	49.78%
Ernakulam	293966	249871	80266	2468	37988	13	120735	48.32%
Malappuram	274705	233499	64736	3662	56603	0	125001	53.53%
Thrissur	271902	231117	72300	4419	30618	31	107368	46.46%
Idukki	249390	211982	56767	1015	21994	12	79788	37.64%
Kottayam	239128	203259	75185	1165	47374	0	123724	60.87%
Kannur	223917	190329	93026	0	30250	0	123276	64.77%
Kozhikode	222437	189071	63849	132	14803	0	78784	41.67%
Kasaragode	181343	154142	57466	750	10703	0	68919	44.71%
Wyanad	154216	131084	66364	2119	28058	0	96541	73.65%
Alappuzha	150735	128125	77920	1953	28720	0	108593	84.76%
Total	2658960	2260117	832158	20975	347409	257	1200799	53.13%

Table II: (Final ROUND I ADCP) Vaccination achievement during the year 2004 - 2005

District	Population	Year	Cattle & buffalo	Sheep & goat	Pig	Total	% Achievement
ADCP							
Alappuzha	154280	2004	79873	28720		108593	88.68%
		2005	14438	13702	83	28223	
		Total	94311	42422	83	136816	
Idukki	278891	2004	57782	22006	0	79788	54.81%
		2005	40004	31496	1585	73085	
		Total	97786	53502	1585	152873	
Kottayam	252833	2004	77978	47504	0	125482	62.92%
		2005	14555	17335	1701	33591	
		Total	92533	64839	1701	159073	
Ernakulam	306290	2004	82734	38001		120735	63.14%
		2005	31638	38482	2548	72668	
		Total	114372	76483	2548	193403	
Thrissur	282308	2004	76719	30649	0	107368	72.56%
		2005	49301	49336	1320	97488	
		Total	126020	79985	1320	204856	
Palakkad	402314	2004	126571	39069	0	165640	65.92%
		2005	41403	57831	318	99552	
		Total	167974	96900	318	265192	
Malappuram	285773	2004	68715	56600	0	125315	65.56%
		2005	30852	31111	78	62041	
		Total	99567	87711	78	187356	
Kozhikode	225124	2004	63981	14803	0	78784	72.24%
		2005	47575	35208	1066	83849	
		Total	111556	50011	1066	162633	
Wyanadu	153013	2004	68483	28058	0	96541	76.39%
		2005	11608	8585	158	20351	
		Total	80091	36643	158	116892	
Kannur	226032	2004	92026	28250	0	120276	80.15%
		2005	36465	24426	0	60891	
		Total	128491	52676	0	181167	
Kasaragode	182258	2004	58216	10703	0	68919	50.09%
		2005	17123	4930	313	22366	
		Total	75339	15633	313	91285	
TOTAL	2749116		1188040	656805	9170	1851546	67.35%
FMDCP							
Thiruvananthapuram	298726	2005	87273	82679	203	170155	56.96%
Kollam	267939	2005	98797	60519	0	159316	59.46%
Pathanamthitta	164546	2005	71437	35392	16	106835	64.93%
TOTAL	731211		257507	178590	219	436306	59.67%
STATE TOTAL	3480327		1445547	835395	9389	2287852	65.74%

Table III- (ROUND-II) Vaccination Achievement during November – December 2005

District	Total Popn	Target Popn	Vaccinations	Containment	Cum. Achvt.	% Achvt. (Target)	% Achvt. (Total)
ALP	154280	131138	121564	0	121564	92.70%	78.79%
KNR	226032	192127	174036	2755	176791	92.02%	78.22%
KLM	267786	227618	194078	9703	203781	89.53%	76.10%
PTA	164209	139578	116650	0	116650	83.57%	71.04%
TCR	282308	239962	198244	0	198244	82.61%	70.22%
EKM	306290	260347	214508	0	214508	82.39%	70.03%
KZD	225124	191355	155037	0	155037	81.02%	68.87%
PKD	402314	341967	276194	3264	279458	81.72%	69.46%
TVM	298726	253917	201871	0	201871	79.50%	67.58%
WND	153013	130061	97145	0	97145	74.69%	63.49%
MPM	285773	242907	164199	2396	166595	68.58%	58.30%
IDK	278891	237057	158025	0	158025	66.66%	56.66%
KTM	252833	214908	117215	379	117594	54.72%	46.51%
KSG	182258	154919	79288	0	79288	51.18%	43.50%
TOTAL	3479837	2957861	2268054	18497	2286551	77.30%	65.71%

Table IV: Species-wise breakup of vaccinations – November –December 2005

<i>District</i>	<i>Cattle</i>		<i>Buffalo</i>		<i>Sheep</i>		<i>Goats</i>		<i>Pigs</i>		<i>Cum. Achvt</i>
	<i>Popn</i>	<i>Achvd</i>	<i>Popn</i>	<i>Achvd</i>	<i>Popn</i>	<i>Achvd</i>	<i>Popn</i>	<i>Achvd</i>	<i>Popn</i>	<i>Achvd</i>	
TVM	146972	88162	3270	1088	293	3	146301	112288	1890	330	201871
KLM	154962	107064	2810	1264	90	0	108938	85132	986	618	194078
PTA	113607	72675	862	322	37	0	48712	43479	991	174	116650
ALP	101005	79332	2783	2054	32	2	49286	39822	1174	354	121564
KTM	138065	63308	2239	962	73	1	96982	50365	15474	2579	117215
IDK	166678	92288	4348	1654	161	21	84790	61070	22914	2992	158025
EKM	173296	101671	6822	3978	81	0	116276	102817	9815	6042	214508
TCR	158524	97962	10538	6972	161	2	104597	88611	8488	4697	198244
PKD	263763	156287	9269	4557	1885	543	125890	114239	1507	568	276194
MPM	134703	72948	12341	4661	263	0	137667	86400	799	190	164199
KZD	163404	100417	1312	420	259	0	57576	53042	2573	1158	155037
WND	103694	58861	3678	2327	36	1	41921	35323	3684	633	97145
KNR	159858	111564	1119	407	206	0	59981	60276	4868	1789	174036
KSG	143637	57577	3213	833	54	0	34065	20520	1289	358	79288
TOTAL	2122168	1260116	64604	31499	3631	573	1212982	953384	76452	22482	2268054

TABLE V

DISTRICT-WISE BREAKUP OF SERUM SAMPLES TESTED AT IAH & VB
PALODE & PALAKKAD

Laboratory	District	Samples Tested
IAH & VB Palode	Thiruvananthapuram	420
	Kollam	340
	Alappuzha	190
	Kottayam	90
	Idukki	128
	Ernakulam	790
	Palakkad	130
	Total	2088
Regional Laboratory Palakkad	Thrissur	90
	Malappuram	100
	Wyanad	100
	Kozhikode	90
	Kannur	90
	Kasaragod	100
	Total	570
	Grand Total	2658
Veterinary College, Pookode has not yet started conducting the tests.		

Seromonitoring is done using the Liquid Phase Blocking ELISA. The OD (Optical Density) values of the samples as read by the ELISA reader are converted into Serum

Neutralization 50 (SN₅₀) values by the software supplied by M/S. Indian Immunologicals Ltd.

In order to achieve suitable protection against 'O' Strain of FMD, the SN₅₀ value must be above 1.50. The value for 'A' and 'Asia I' is 1.2.

Testing reveals that the majority of samples collected from the field following vaccination satisfy these criteria.

Table VI: Data on animal movement into the state

District		Check post	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06 (up to Jan'06)	
TVM	1	Parassala	14802	13565	11980	15335	10660	13798	18697	
KLM	2	Thenmala	51670	40605	55731	66713	79185	100347	22011	
IDK	3	Bodimettu	2242	1479	959	723	1543	2960	876	
	4	Cumbummettu	8122	8529	9544	10193	9264	9233	5602	
	5	Kumily	10475	9965	15073	38334	42618	40204	29844	
PKD	6	Valayar	60562	143960	134784	56141	11400	3968	29066	
	7	Meenakshipuram	15817	4079	1217	2796	21993	22519	73950	
	8	Muthalamada	57331	49031	24707	30423	45433	60081	84411	
	9	Gopalapuram	26003	46145	67574	95443	77581	48188	45739	
	10	Kozhippara	1240	607	815	6473	20194	27631	90611	
	11	Agali (Mattathukadu)	8293	8298	7037	9017	0	12839	11455	
MPM	12	Vazhikkadav	35018	37094	29339	36922	35761	29059	16626	
WND	13	Sultan Batteri	26818	23125	32502	37571	34063	39526	40111	
	14	Kartikulam	8733	7956	9049	11574	17167	20351	17995	
KNR	15	Iritty	2456	1411	5599	6636	13387	40177	22999	
KSD	16	Kunjathur	176	4076	10272	7779	5101	5085	4542	
	17	Perala	<i>Check post started functioning in 2005</i>							3307
		Year-wise total	329758	399925	416182	432073	425350	475966	517842	