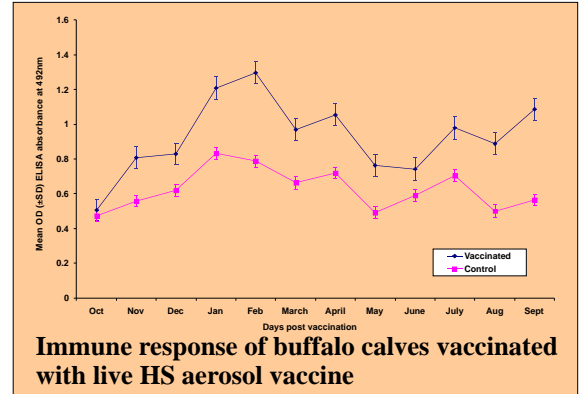


## **Epidemiology and Control of Livestock and Poultry Diseases**

Information on the aetiology, distribution pattern and seasonal trends of animal diseases greatly help in their understanding and thereby devising appropriate control strategies. Accurate and early diagnosis can help in control of the epidemics. Vaccination is cost effective tool to control infectious diseases in livestock and poultry. A number of vaccines are used in the country against most of the major diseases of livestock and poultry. Only a few of such vaccines are produced locally, despite the fact that some of the pathogens involved in field infection are distinctly different in their specificity against the available vaccines. Therefore, there is a dire need to develop vaccines using local strains of such pathogens.

## EPIDEMIOLOGY AND CONTROL OF LIVESTOCK AND POULTRY DISEASES

- Live aerosol Haemorrhagic septicaemia (*Galghotoo*) vaccine trials revealed that single dose of vaccine gives protective immunity for one year in cattle and buffaloes.
- *Peste des Petits Ruminants* (PPR) causes estimated economic losses worth Rs. 20.5 billion annually. PPR virus was isolated from four outbreaks in Pakistan. Epidemiological factors responsible for persistence/transmission of virus were identified.
- Under National Program for Prevention and Control of Avian Influenza being run at the National Reference Laboratory for Poultry Diseases, NARC, 11 Avian



**Bird infected with Avian Influenza**

### I n f l u e n z a

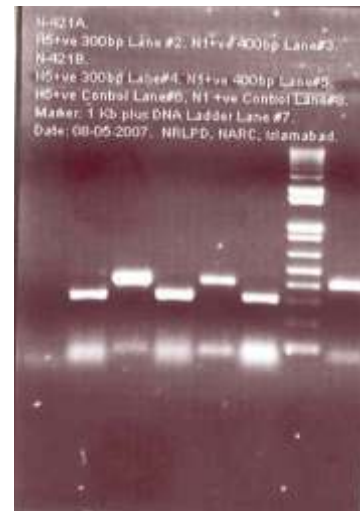
Surveillance Centers were co-coordinated throughout the country for diagnosis, control and monitoring of Avian Influenza. Based on the surveillance data, early disease warning system was developed leading to adoption of appropriate measures for the control of Avian Influenza during 2006.

- Collaborative research work for the development of molecular diagnostic assays and vaccine against bird flu was undertaken

in collaboration with research

laboratories in UK, Italy and USA. This lead to the standardization of PCR and real-time PCR diagnostic techniques. Based on partial sequencing data, new PCR primers were developed and specificity of the test was improved.

- Warble fly disease was successfully controlled in cattle and goats under drug efficacy field trials.



**DNA bands of local Avian Influenza virus isolates detected by PCR - a highly sensitive technique**



**Secretary MINFAL and Chairman PARC handing over vehicle keys to provincial representative of Avian Influenza Rapid Response Units**

## EPIDEMIOLOGY AND CONTROL OF LIVESTOCK AND POULTRY DISEASES



Drug efficacy field trial for control of warble fly in cattle



Blood collection from a diseased animal

### AZRC, Quetta

- Physical verification of warble fly infested animals (goats and cattle) was undertaken and coordinates for mapping were recorded in different areas of Balochistan i.e., Quetta, Pishin, Loralai, Qilla Saifullah, Zhob, Meikhtar, Rarhkan, Rakhni, Barkhan, Mastung, Sibi, Naseer Abad, Noshki, Kharan and Kalat. Infestation in cattle and goats was found from 10-85%. Most of the farmers were of the view that warbles (nodules on the back of infested animals) start appearing in October and drop off the animal by mid February.
- Livestock prevalent diseases observed in flocks at Loralai and Qilla Saifullah were: warble fly infestation, mange, lung-worms, enterotoxaemia, anthrax, liver flukes and pox, etc. These diseases were controlled and not found in the flocks as a result of regular vaccination and treatment during the year. It was observed that prior to demonstration of inputs (medication, vaccination and feeding) by AZRC, mortality rate was upto 50% in adult and new born but during this year, it decreased to 1-2%.
- Eleven farmers' flocks (six at Loralai and five at Qilla Saifullah) were selected and internal parasitic infestation was recorded through microscopic examination of faeces. The results showed that 80% sheep and goats were infested with eight different types of internal parasites and 50-70% animals with external parasites (ticks, warble fly, etc.). Regular de-worming with an interval of three to four months decreased internal parasitic level to 16% and completely eradicated external parasites.
- At AZRC Tomagh Station, sheep (n = 100) and goat (n = 20) were studied to assess internal parasitic infestation incidences and their control with anthelmintics (Nilzan and Xorox). Initially, all the animals were drenched with these medicines during September, 2006 and faecal samples were regularly examined microscopically to assess level of infestation. Just after drench, internal parasitic incidence was 15% with single parasitic infestation (*Moniezia benedeni*) but increased to 22% and 40% with three types of internal parasites (*Eimeria*, *Fasciola* and *Protostrongylus* spp.) during subsequent months.