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AN OUTBREAK OF FOOT AND MOUTH DISEASE IN AN ORGANIZED PIG FARM OF ASSAM

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ABSTRACT

In an outbreak of foot and mouth disease (FMD) in an organized farm, out of 657 pigs, 534 (81.28 %) animals were affected and 17 died. The disease was confirmed as FMD by Sandwich ELISA and serotype A of FMD virus was identified. By adopting scientific managemental practices mortality rate could be restricted to 2.5 per cent. Of the 17 dead animals, 15 animals were below 6 months and 2 were above 8 months of age. Higher case fatality was recorded in the young animals which might be due to lack of immunity and maturity of the immune system. Vaccination of pigs with cattle FMD vaccine was not found to be useful.

Key words: Pig, FMD Outbreak, Organized farm, Mortality and Morbidity.

Foot-and-mouth disease is a highly contagious and economically devastating disease of livestock caused by foot-and-mouth disease virus (FMDV; family *Picornaviridae*, genus *Aphthovirus*)[5]. Out of seven serotypes of FMDV namely, '0', 'A', 'C', 'SAT 1', 'SAT 2', 'SAT 3' and 'Asia 1', only four serotypes *viz.*, '0', 'A', 'C' and 'Asia l' were recorded in India. Since 1995, serotype 'C' has not been recorded in the country[2]. The disease spreads rapidly in animal population and hence it is difficult to control FMD which affects productivity and trade of animals and animal products. This paper reports an outbreak of FMD and methods used for control of the disease in an organized pig farm.

The organized pig farm established under the National Agricultural Innovation Project (Component -2), Assam Agricultural University, Guwahati, had 657 crossbred pigs (Hampshire x Assam local) when the outbreak occurred. The animals were maintained in groups in separate pens as per their age. The animals were vaccinated against FMD with Clovax @ l ml intramuscularly 3 months prior to the outbreak. The outbreak was noticed during pre-monsoon season in May, 2012 in 534 pigs. The affected pigs showed high rise of temperature (105-107°F), anorexia, huddling, lameness and blisters between the hooves, on tongue and in the nasal cavities. Vesicle formation was noticed on the mucosa of snout and feet.

The foot epithelium and vesicular fluid were collected from affected animals and sent to the AICRP on FMD, Department of Veterinary Microbiology, Assam Agricultural University, Khanapara Campus, Guwahati – 781 022 for laboratory diagnosis and typing of FMD virus. Sandwich ELISA was used for confirmation of FMD and detection of type of FMD virus in the materials collected from affected animals.

Symptomatic treatments were given for conditions like rise of temperature, external wound etc. The affected animals were treated with Meloxicam injection @ 1ml /20kg body weight intramuscularly for 3-5 days, Oxytetracycline 1ml/ l0 kg body weight intramuscularly for 5--7 days.

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Spraying of 1% formaldehyde solution to the foot lesions and around the sheds was found to be helpful. Washing the lesions with potassium permanganate (1: 1000) solution twice daily and application of tincture of iodine and Himax ointment locally facilitated rapid healing of the wounds.

Out of the total herd strength of 657 pigs, 534 animals were affected by FMD and 17 died. The overall morbidity and mortality rate in pigs were 81.28 and 2.59 per cent, respectively. The outbreak was confirmed as FMD in laboratory and the samples collected from affected animals were found positive for FMD virus type 'A' by Sandwich ELISA. Among the four serotypes of FMDV prevalent in India, the highest number of outbreaks were due to type **'O'** (50.38%), followed by type 'A' (30.53%), type 'Asia l' (19.08%), while no outbreak due to type C has been recorded since 1995[6]. Sandwich ELISA was used for detection of FMD virus in affected animals by other researchers[3]. Out of the affected animals, 12 per cent showed lameness. The severity of clinical signs varied with the strain of virus, exposure dose and age of animals. In an outbreak of FMD, morbidity was as high as 100 per cent but the mortality in piglets was 20 per cent or higher[2]. During one epidemic in Taiwan, the overall mortality rate in piglets was 40 per cent[1]. In the present outbreak, mortality rate could be restricted to 3.18 per cent by adopting scientific managemental practices. Since the disease is very contagious in nature, large numbers of pigs in the herd were infected with few deaths of piglets. Out of 17 dead animals, 15 were young (< 6 months) and 2 were adult (>8 months). Significantly higher (P<0.001) mortality and case fatality was reported in young pigs (up to 6 months of age)[4].

On the basis of the results, it could be inferred that young animals are highly susceptible to FMD. Since the disease is highly contagious in nature, control of the disease is very difficult. As vaccination is recommended for prevention of the disease in endemic areas, FMD vaccine specific for pig should be made available. Bovine FMD vaccine does not protect pigs against the disease. By adopting scientific managemental practices, the mortality could be reduced significantly.

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