

INCIDENCE AND DISTRIBUTION OF FOOT AND MOUTH DISEASE VIRUS SEROTYPES IN HARYANA BETWEEN 1997-2000

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ABSTRACT

The present report describes the occurrence of foot and mouth disease (FMD) outbreaks and distribution of virus serotypes involved in Haryana during January, 1997 to December, 2000. A total of 153 outbreaks were recorded in the state. Two hundred and two clinical samples collected from these outbreaks were analysed for identification of FMD virus (FMDV) serotypes using sandwich ELISA. Maximum outbreaks (71) were recorded during the year 1998 and minimum (15) during the year 2000. Majority of the outbreaks (45.75%) were recorded during winter months i.e. January to March involving cattle and buffalo (61.43%) simultaneously. Only two outbreaks were recorded during July month (one each in 1997 and 1998). Of the 202 samples collected, 160 (79.20%) were typed as belonging to serotype O (119, 58.91%), A (11, 5.44%), Asia-1 (30, 14.85%) and 42 (20.79%) remained untypable. FMDV serotype O was the most predominant type, whereas, serotype C failed to show its existence.

Key words: Foot and mouth disease, FMD virus serotypes, ELISA, Haryana

Foot and mouth disease (FMD), caused by an Aphthovirus of the family Picornaviridae, is endemic in India and inflicts severe economic losses to our economy on account of reduction in production and trade restrictions. It is a highly contagious infection of cattle, buffaloes, sheep, goats and pigs as well as wild ruminants. The disease is categorised under list 'A' of OIE diseases. Continuous surveillance of the disease is a pre-requisite for prevention (vaccination strategy) and control of FMD in India. The prevalence and distribution of FMD virus (FMDV) serotypes has been reported from time to time in north-west India including Haryana (Prasad *et al.*, 1978, 1992, Rama Kant *et al.*, 1980, Ahuja *et al.*, 1986, Maan *et al.*, 1998). The present report describes the incidence of FMD outbreaks and distribution of virus serotypes in Haryana between the years 1997-2000.

MATERIALS AND METHODS

Continuous surveillance for FMD outbreaks was maintained by visiting regularly all the 19

districts of Haryana and/or through reporting of FMD outbreaks by the field veterinarians of the Department of Animal Husbandry, Haryana. Epidemiological data of each FMD outbreak was recorded in a prescribed proforma.

The suitable material available (tongue/ gum/ feet epithelium) from clinical cases was collected in 50% glycerine phosphate buffer saline (pH 7.4), transported to the laboratory over ice and processed for serotyping by sandwich ELISA as per the standard protocol (Bhattacharya *et al.*, 1996). The reagents for serotyping (serotype specific rabbit and guinea pig anti-146S FMDV O, A, C and Asia-1 serum) were kindly supplied by the Central Laboratory of the All India Co-ordinated Research Project on FMD, IVRI Campus, Mukteswar, Kumaon. The clinical samples which remained untyped by ELISA, were processed in baby hamster kidney-21 (BHK-21) cell culture system for amplification of the virus (Sharma *et al.*, 1985) and again put to ELISA for serotyping as described above.

RESULTS AND DISCUSSION

A total of 153 FMD outbreaks were recorded

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