FMD is endemic in Sudan and outbreaks occur annually, the first record was in 1903 [1]. The disease causes severe economic impacts in dairy sector and in international trade of animals [2]. Four FMD serotypes of the seven were reported in the country. These are O, A, SAT1 and SAT2 [2]. Serotype O was firstly isolated then Serotype SAT1 and Serotype A and lastly Serotype SAT2 in 1977 [2]. The recent update of the FMD serotypes indicate the circulation of type O, A and SAT2 [3,4]. Type O is the dominant strain in the country. Sero surveillance of FMD antibodies was conducted in 7 Sudanese state in 2013 revealed that 60.16% of type O was detected followed by 30.04% and 12.31% for type A and SAT2 respectively [5]. Phylogenetic analysis of the FMD Sudanese isolates in WRL Pirbright showed that O serotypes was belongs to East Africa 3 (EA-3), type. A is belongs to G-IV genotype of the Africa [6,7]. SAT2 has two topotypes were circulating in the country XIII and VII topotypes [8].

FMD was studied in cattle in Khartoum and Al Kamleen states, both serological and active disease surveillance were conducted by using virus isolation and liquid phase blocking ELISA and 3ABC ELISA [4].

An estimation was made on the impact of the FMD in 2013 in Sudan. The total impact of the disease was calculated to be SDG 3.0 milliard (US$ 482 thousands) annually in eleven states of the country during the study period. The impact of the disease per head of the cattle was SDG 8.2 (US$ 1.26) and SDG 2.56 per person (US$ 0.4) [7]. 99% of the impact recorded in 11 states of the country was due to direct losses (milk, abortion and deaths among young animal) whereas, 1% of the impact in the same study area was due to the cost of control and treatment for secondary infections because there was no vaccination against the disease during the study period.

The geographical distribution of FMD in the country was described as penetrating along the Nile basin up to Khartoum state and more favorable conditions prevail in Eastern, Western and Northern states [5]. The emerging epidemiological pattern of FMD in Sudan involves two hot spots and intense circulation of FMD virus along the Nile basin. Hot spots are defined as points important for FMDV entry and circulation. Khartoum [9] and the Blue Nile states [5] were identified as important hot spots of FMD infections. FMD is periodically epidemic in the country with the states and localities bordering Egypt, Ethiopia, Eritrea, RSS and Libya being at higher risk of the disease than the interior states [7]. The states and localities...
bordering Egypt, Ethiopia and Eritrea appear to behave like primary endemic areas for the introduction and persistence of FMD virus through frequent unofficial movement of cattle across the porous border. The starting of vaccine research in Sudan was in 2010. The trail was conducted on type O [10] the virus was derived from a Sudanese isolate (O-Jaz 1/08) and inactivated with binary ethylenimine produced a satisfactory neutralizing antibody response in 4 inoculated calves. Post vaccination sera produced high r value (0.9 and 0.99) with two currently circulating Sudanese type O also indicative of likely protection.

BIBLIOGRAPHY


