Statement of Issue; Foot-and-Mouth Disease (FMD) is a highly contagious viral disease of wild and domestic cloven-hoofed animals. FMD outbreaks can be controlled by ring vaccination and restriction of animal movements in affected districts. If used strategically, vaccination can create a barrier between infected and disease free areas, provided there is a match between the types of virus used to make vaccines and those causing outbreaks. However, restriction of animal movements and vaccination of cattle after outbreaks have not successfully controlled FMD in Uganda, where outbreaks occur every year in Uganda’s 11.4 million cattle. This normally leads to serious socio-economic consequences due to marked loss in production and/or death of affected animals as well as interference with marketing of livestock products; a major hindrance to international trade.

Background; The current global burden of FMD is concentrated in Asia, Africa and South America, which mirrors low economic development as well as lack of infrastructure and resources to control the disease. FMD is caused by a virus and is transmitted mainly by contact but wind spread has been recorded. The virus that causes FMD has many types which are different and each type of virus requires a specific type of vaccine to be controlled. Affected animals mainly show signs of blisters on the mouth, soft skin of the feet and udder of cattle, sheep, goats and other cloven-hoofed animals. The Central region reports the highest number of FMD outbreaks; It is estimated that 34% of outbreaks that occurred in Uganda from 2001 to 2010 were in the central region. This was followed by the Eastern region (19%), South-western (17%), Western (13%), Northeastern (3%) and Northwestern region (1%).

Post-outbreak vaccination followed a similar trend with 43% of all vaccines distributed to the central region, 35% to the South western, 9% Western, 7% Eastern, 3% Northern, 1% Northeastern and 0.3 % Northwestern.

Factors affecting the effectiveness of FMD control Programs in Uganda; the percentage (10.3%) of cattle vaccinated in districts that report outbreaks is far lower than the recommended vaccination of 72% of susceptible animals around the area of outbreak to build protection and prevent further spread of the disease.

The small ruminants and pigs are not included in vaccination programs to control outbreaks. These could be a source of FMD for cattle.

The long time (8 weeks average) taken to respond to outbreaks through vaccination, moreover it is recommended that vaccination of animals around outbreak areas should be done within 5 days from when the disease is reported.

Laboratory confirmation of the specific type of the virus causing FMD is limited. For instance, it is usually done done for only 9 out of the 121 outbreaks.

High cost of FMD vaccines and associated transportation as well as tax costs. The cost of FMD vaccines ranged from $58,000 in 2003 to $1,088,820 in 2009.

Policy Recommendations; Animal check points should be established at all entry points .i.e. in Rakai, a border district in the Central region and most districts in the Eastern, Western and South-western region who reported high number of FMD outbreaks because of the free movement of animals across Uganda’s porous borders.
Vaccination of animals at entry points should be enforced especially before high risk seasons for example towards the draught period.

Regular surveillance of all animal species (at least once a year) to ascertain the type of FMD virus in animal populations should be introduced.

Mandatory reporting of FMD outbreaks should be enforced and should involve:
- Increased training of para-vets in FMD identification.
- Increased farmer sensitization about the disease and its implications
- An improved disease reporting system at all levels of veterinary service provision.

Capacity Building in both human and infrastructural and collaboration with manufacturing plants to ease matching of vaccine with viruses causing outbreaks in the animal populations should be promoted.

For effective response to outbreaks, policies should cater for the following:
- Continuous availability of FMD vaccines
- Establishment of a rapid response team to implement immediate control of FMD outbreaks
- Private-government partnerships to have an FMD vaccine development plant. This reduces both the costs of transporting the vaccines and the time delay before vaccination due to importation of vaccines
- Vaccination of recommended percentage of animals in affected districts
- Monitoring of the protection produced after vaccination

Summary: Effective FMD control should involve human and infrastructural capacity building for regular identification of the FMD virus types causing outbreaks; matching of the virus types with vaccines produced; vaccination of the recommended percentage of animals in districts; monitoring of protection produced after vaccination; and establishment of disease free zones and animal check points to limit disease transmission.

Sources Consulted:

6. Global status and future road map for control and prevention in India, Agriculture Research, 1(2), 132–147

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