

5.0 Veterinary Services Programmes

5.1 Tick Borne Diseases Control

Tick-borne disease control in Swaziland is guided by the Animal Diseases Act 7/1965 (as amended) which took into consideration other older laws such as the cattle routes act and the dipping charges act. Currently dipping is subsidized by government in the communal herd attending publicly owned dip-tanks. The history of dipping dates back to 1910 during outbreaks of East Coast Fever, a disease that devastated Southern African countries when the disease was introduced in areas where the vector tick was already present. Despite that East Coast Fever was eventually controlled and subsequently eliminated there are other Tick-borne diseases of serious economic importance in cattle, goats and sheep which the government specified in the law that they shall be reported and should be controlled. The key diseases are bovine anaplasmosis (gall sickness), cowdriosis (heartwater) and bovine babesiosis (redwater). Others reasons for ectoparasite control include the prevention of wounds from tick bites and the control of mites and lice.

Tick control follows a program of dipping whereby dipping occurs fortnightly in summer and monthly in winter in the Highveld regions whereas in the Middleveld, Lowveld and Lubombo dipping occurs weekly in summer and fortnightly in winter. Besides the control of ticks and Tick-borne diseases, the compulsory attendance of cattle, goats and sheep at the dip-tank is required for disease inspection, prevention and control activities. During the dipping exercise the Veterinary Assistant keep updated records in the dip-tank register on the numbers of animals attending the dip as well as transactions and all treatments that took place.

5.2 Stock Movements

All livestock except dogs and cats require a Stock Removal Permit to be moved from one area of the country to another if the movement occurs across a dip-tank or dip-tanks. Regulation 38 of the Animal Disease Act 7/1965 further requires that this permit be issued and endorsed by a veterinary official authorised by the Director of Veterinary and Livestock Services. If the movement is within the same dipping tank area like in grazing areas, permission for the movement may be given verbally by a veterinary officer, animal health inspector, assistant animal health inspector, or any other officer duly authorised thereto by the Director of Veterinary and Livestock Services. Besides the case of moving animals into or out of the dip-tank area on SNL or a TDL farm as we know them, the use of a Stock removal Permit is also required whenever animals move into a butchery and into/out of a Small Scale Fattening Unit (SSFU) or Small holder Dairy Unit as long as the animal does not come from the same dip-tank where the establishment is registered. In the case of livestock movement into and out of an establishment which stands as a dip-tank such as a feedlot, dairy farm or abattoir, a Stock Removal Permit is always required.

Table 16 below shows the numbers of livestock permits issued by each region. The total number of stock removal permits issued in 2012 was 55823. The national monthly average in 2012 was 4652 while in 2011 it was 4567.

	Region				Total
	Hhohho	Lubombo	Manzini	Shiselweni	
Average number of permits issued	693	1283	1672	1004	4652
Total permits issued	8320	15390	20069	12044	55823

Table 16: Numbers of Stock Removal Permits Issued According to Regions in the Year 2012

5.3 Bovine Tuberculosis Control

Bovine tuberculosis is a specified disease under the Animal Diseases act No 7 of 1965. The Department of Veterinary and Livestock Services have in place programs for the management of bovine tuberculosis in the national herd. These are 1) the **Accreditation Program** which is a voluntary program, for the benefit of those farmers committed to disease freedom especially stud breeders and large dairy establishments. In this program cattle are subjected to intradermal testing and an official tuberculosis-free certificate is then issued if the specific herd tests negative. 2) **Annual Testing Program** which is applicable to Dairy animals requires animals to be tested for tuberculosis annually (ideally between May and August). Usually this testing is run concurrently with brucellosis testing. Animals found positive to the test are condemned and owners are advised to cull while farms found infected then move to the infected herd program immediately. 3) **Infected Herd Program** applied when infection is confirmed in a herd, whether as a result of tuberculin test, necropsy, meat inspection etc. That infected herd is immediately placed under quarantine and repeated tests done at determined interval as positive animals are branded 'T and crown' on the right hindquarter and are slaughtered in approved abattoirs within a period of six months from the day of diagnosis. 4) **Diagnostic Testing Program** (for export services) where animals are tested for tuberculosis at the request of the owner and/ or veterinary officials (may be for export purposes or other immediate trade related purposes or to confirm suspected infection).

As of present the different bovine tuberculosis programs have not been consistently carried out, except to a limited extent the annual testing of dairy herds and the diagnostic testing program. However, in 2012 there were no herds tested under the annual testing program. Diagnostic testing for purposes of export was done whereby 25 cattle were tested and none were positive.

As can be seen in the report under the diseases section, almost all the positive diagnoses of the disease were from post mortem finding at slaughter. The management of the herds from which the positive animals came from still needs some attention based on guidance from the GNVS chapter on bovine tuberculosis.

5.4 Bovine Brucellosis Control

The principal legislation is the Animal Disease Act No.7 of 1965 and all its amendments. Specific regulations to Brucellosis are covered in regulations 47(a) for caprine Brucellosis and 48 for Contagious abortion. The overall objectives of the Department of Veterinary Services on Brucellosis is to be able to detect the disease early, efficiently combat and control it and eventually eradicate it. **One dip tank/ herd at a time until the whole country is free of the disease.** The strategies to achieve this objective are to test animals in a structured way in either SNL or TDL farms and combine this with either culling and/or vaccination.

The national control strategies incorporates the following activity programs; 1) annual vaccination of heifers where heifers between 4 months and 8 months are vaccinated. 2) vaccination/inoculation of adult cows which is done by veterinarians under specific circumstances as detailed in the GNVS.

Annual bovine brucellosis vaccination campaign for 2012

There were a total of 4,609 heifers vaccinated for the disease in 2012. Table 17 below shows contagious abortion vaccinations for 2012. In the last two years, the numbers of heifers vaccinated were below those expected considering the average number of female calves born per month. Failure to reach the expected target is due to inadequate supply of government procured vaccine resulting from procurement bottlenecks. Contagious abortion vaccination campaigns for cattle are scheduled to be done in the months February to March of each year.

Region	Total vaccinated
Hhohho	1,686
Lubombo	790
Manzini	2,133
Shiselweni	0
Totals	4,609

Table 17: Vaccinations for contagious abortion in 2012

5.5 Rabies Control

Rabies is a notifiable disease in Swaziland. The Animal Disease Act 7/65 is the main legislation for the prevention, surveillance (including reporting) and control of the disease. Special regulations to Rabies are covered in Regulations 54. The overall objective of the Department of Veterinary and Livestock Services on Rabies is to control the widespread occurrence of the disease thus protecting the public from infection.



There are two main elements to the Rabies control programme and these are;

- Annual Vaccination of dogs
- Control vaccination of outbreaks, tie-up order and shoot out campaign

Annual vaccination campaigns are done using inactivated tissue culture vaccine during the month of September, the aim being to increase the population immunity of dogs and reduce the incidence and eventually the prevalence of the disease in domestic dogs and ultimately in all domestic animals and humans. Vaccinated dogs are given rabies vaccination certificates, which provide proof of vaccination in case of need to prosecute owners who did not vaccinate their dogs or in case of a shoot-out campaign. The government provides free vaccinations for the annual campaign as well as for outbreak control vaccination. Despite that there is a specific time for these campaign the actual starting and finishing timing have sometime been interrupted due to the non-availability of the vaccine and other logistical factors like transport and other competing events. During the year there are also vaccinations conducted for free at clinics.

Outbreak control vaccinations are carried out in affected and in contact areas and these are gazetted. The gazette enforce a tie-up order and shoot out campaigns for unconfined dogs as well as those which were not vaccinated during the intensive control vaccination campaign in the specific area.

The numbers of dogs vaccinated against rabies in 2012 are shown in table 18 below.

Animal Species	Annual vaccination campaign	Disease outbreak control vaccinations	Total vaccinated
Canine	79,139	1,863	81,002
Feline	20	0	20
Caprine	32	0	32
Totals	79,191	1,863	81,054

Region	Annual vaccination campaign	Disease outbreak control vaccinations
Hhohho	21039	0
Lubombo	14861	0
Manzini	27777	1863
Shiselweni	15514	0
Total	79191	1863

Table 18: Numbers vaccinated for rabies in 2012 by species and by region

The total number of animals vaccinated was 81,002 of which 79,139 (98%) are dogs. Of the 27777 animals vaccinated in Manzini during the annual campaign, 27725 were dogs whereas in the other regions there were no other species of animals vaccinated besides dogs. Experts say that for rabies to be substantially controlled 80% of all dogs should be consistently vaccinated annually; a mark that has been elusive in Swaziland considering that vaccinated dogs are not marked, stray dogs are not part of the vaccinated statistic, and the dog population is not controlled. In essence there could be dogs that consistently miss the annual vaccinations and these are responsible for the virus circulation in the domestic environment.

5.6 Foot and Mouth Disease Control

Foot and mouth disease

Swaziland is officially recognised by the OIE as a FMD Free Country without vaccination. This status has continuously been under threat associated with the presence of the disease in neighbouring countries either in restricted areas or throughout the whole country. The real threat also comes from the appearance of stray buffaloes of unknown status mainly in the northern part of the country. In February 2011 South Africa reported Foot and Mouth disease in KwaZulu-Natal but Swaziland's response ensured that the disease did not come into the country. Details of this response were explained in the 2011 annual report. South Africa officially declared the outbreak over in July 2011 but for purposes of trade between Swaziland and RSA certain measures remained in place until the end of 2012. Despite this Jozini FMD outbreak in KZN South Africa, Swaziland maintained her disease free status throughout 2011 and 2012 through continuous general surveillance (as well as targeted risk based surveillance), livestock identification and ground vigilance for cross border movement of animals in the eastern frontier (Big Bend-Lavumisa area).

In 2012 Swaziland experienced cross border visitations from unknown (stray) buffaloes which further put stress on the veterinary services to maintain the country's free FMD status. Prior to 2012 this influx of buffaloes has been a rare occurrence. It is however not always possible to identify the source of the stray buffalo irrespective of the country where it is suspected to have come from. It is worth mentioning that buffaloes in Swaziland are only found in Mkhaya Game Reserve and are therefore enclosed whereas their FMD status is also monitored. There were two major reports of stray buffaloes entering the Swaziland territory in 2012, one from Lomahasha and the other in Hluti area. When these buffaloes are spotted it is normal protocol that the National Veterinary Services through the Director notify their counterparts in South Africa to try and identify the source of the buffaloes.

Lomahasha Stray Buffalo and FMD Risk Management Response

On the 19th Of June 2012, a female heifer buffalo was spotted by a cordon guard between the 2 cordon fences around the Nkalashane Cordon Camp; in the Lubombo region (Lomahasha sub-region) not far from the point where the 3 countries (Swaziland, Mozambique and South Africa) meet. Veterinary services responded promptly by mobilizing staff to track the buffalo and also enlist the assistance of Big Game Parks and Royal Swaziland Police Services in terminating the buffalo and testing its tissues to determine if it was FMD positive or not. This testing is important to determine risks of such an unknown animal bringing in FMD into the local susceptible animal population (cattle, goats, pigs, wildlife, etc.). The response included the following activities;

1. Destruction of the animal- The animal was found still within the corridor of the cordon fences and was shot from the air and destroyed by burning. Blood, pharyngeal tissue and lymph nodes were taken and sent to Onderstepoort Veterinary Institute in South Africa for testing on the 22nd of June 2012 and results received on the 27th June 2012 showed that samples were positive for antibodies to the structural proteins of SAT-1, SAT-2 and SAT-3 FMD virus using the Liquid-phase blocking ELISA. They were negative on PCR and no virus could be isolated.
2. A response strategy involved
 - a. strengthening of sanitary fences along the northern and north eastern border, strengthening the controls at the Lomahasha check point in Maphiveni while the green fence is rehabilitated,
 - b. Quarantining and examining of cloven hooved animals in all dip-tanks under the Lomahasha sub-region using risk based surveillance (based on possible contact with buffalo) whereby there was inspection and mousing of cattle, inspection of goats and sheep and inspection of pigs.
 - c. Sixty six bovine blood samples were taken from Lomahasha (T/ANo. 204) and Macakula (T/ANo. 394) dip-tanks, the dip-tank areas with the highest risk.

- d. Between 240 and 280 cattle were mouthed in each dip-tank using a sampling formula at 95% confidence level and 10% prevalence from the following dip-tank areas: Hlofu, Mkhangala, Ndzaweni, Bhubesi, Majembeni, Nduma, Mhononweni and Mbokojweni. A total of 2027 animals were mouthed in the 8 dip-tanks and none had oral and or feet lesions. Inspection percentage ranged from 84-99%.
 - e. All goats and sheep in these dip-tank areas were also inspected and mouthing only done on limping or suspect animals.
 - f. Awareness creation of staff, farmers, public.
3. Results and closing of event
- Following the intensive surveillance activities, the event was closed through Directive 1/2012 issued 23 Nov 2012 after more than 5 months of close inspections in the Lomahasha sub-region and nearby Mayiwane sub-region in the Hhohho region.

Shiselweni Stray Buffalo and FMD Risk Management Response

On the 12th April 2012 two buffalo bulls were reported to have been spotted by residents about 5km west of Lavumisa town in the Nquthu and Vimmy Ridge dip-tank areas. The animals were again spotted on 17th and were on the 18th driven by helicopter back to Harlo Game reserve which lies adjacent to the Swaziland territory in South Africa. The response to this buffalo entailed the following:

1. Prior to the buffalo being driven to South Africa, the Director of veterinary and Livestock Services was informed and after the engagement of Shiselweni Veterinary Services with the owners of the buffaloes a decision to drive them back to South Africa as soon as they were spotted had to be endorsed by headquarters.
2. The two dip-tanks, Nquthu (on SNL) and Vimmy ridge (TDL) were immediately quarantined from the 19th April 2012. A further two dip-tanks, Sikhlasabodo T/A 726 and Lamswelanto T/A 683 were quarantined as contact dip-tank areas to the two.
3. Clinical examination of cattle was stepped up by also doing mouthing of cattle under the two FMD 'high risk' dip-tanks which were Nquthu T/A 846 and Vimmy ridge T/A 633. Beginning 26 April 2012 a random sample of 686 out of 1961 cattle were mouthed at Nquthu with a second mouthing of 644 cattle done on 15 May 2012. Vimmy Ridge had 214 out of 295 cattle mouthed on 30 May 2012. In all regular and stepped up surveillance activities, there were no clinical suspicions.
4. Serological testing of cattle from the two 'high risk' dip-tanks and the two in contact dip-tank areas was done with samples taken on the 18th June for two of the dip-tanks and on 26th June 2012 for the other two. A total of 32 samples were taken from each of the four dip-tanks using a sampling formula for detection of disease at 10% minimum expected prevalence and 95% confidence level.
5. The blood samples were sent to the Botswana Vaccine Institute (BVI). Out of the total of 128 samples collected from the four dip-tanks, a total of 97 samples were sent after 31 samples were found unsuitable for testing. Nquthu sent 16 samples, Vimmy Ridge 30, Sikhlasabhodo 28 and Lamswelanto 23. All results of the Virus Neutralisation Test were negative.
6. Quarantine of the four dip-tank areas under Lavumisa sub-region was lifted on 6 August 2012 after continuous inspection at dip-tanks did not reveal any suspicions.

5.7 Residue Testing

Meat Hygiene under the Veterinary Public Health Section of the Department carries out a residue plan for monitoring and testing for unacceptable levels of meat contaminants and banned substances. This testing program is part of the requirement by the European Union to accept beef from third countries. Substances tested for are stilbenes, thyrostats, synthetic steroids (with androgenic, gestagenic or estrogenic activity), resocrylic acid lactones, beta agonists, chloramphenicol, others (nitrofurans, nitromidazole), other nitrofurans (semicarbazide), organochlorine compounds including PCBS, organophosphorus compounds, metals, mycotoxins. These are sampled from urine, serum, kidney fat, muscle, kidney, liver, The samples are taken at farm level and at slaughter. In all the compulsory residue tests for 2012 there was only one result that detected a substance above acceptable limits and this was muscle tissue for cadmium. Detailed results are with the responsible authority.

5.8 National Audits

The National Audit inspections are national inspections that monitor the compliance of the official Veterinary Services to the rules and regulations governing the Veterinary Services. It seeks to address issues where non-compliance occur and how it can be improved and also harmonize the Veterinary Services in the country.

The plan is that two national audits are undertaken in a year, but in 2012 only one was done in September in the audit of regional veterinary activities while one was done for the granting of an annual export licence to the beef export establishment SG-1. The audits highlighted some of the following action areas;

- * Strengthen holding of meetings and proper keeping of minutes.
- * Strengthen use of occurrence books.
- * Improve on communication of results between the laboratory and field services.
- * Improve on compilation of detailed reports on events of veterinary importance in regions.
- * Strengthen regional audits and identify action areas in reports.
- * There is need for strengthening of collaboration between Veterinary Services and Livestock Production and Extension in as far as updating lists of establishments (piggeries, poultry, etc..).
- * Updated exemption from dipping documents (authority) must be issued annually for small holder dairy units on SNL.
- * All managers to improve on keeping of inventory records
- * There is need for the strengthening/improvement of Imports and exports records at regional office level and reconciliation of import permits.
- * All regions need to prioritize identification i.e. ear-tagging of animals and entry of records in the SLITS software without forgetting cattle branding in the process.
- * Regional and sub-regional managers need a good system of recording ear-tags for proper monitoring of their keeping and issuance.
- * The issue of keeping of (or not using) blue sheets as an administrative tool came up for discussion.

5.9 Livestock Identification

The Swaziland Government has been running a livestock identification and traceability project, which is funded by the Government, with technical cooperation from the FAO since the year 2012. The project implementation has initially been targeted at cattle and their owners; specifically on Swazi Nation Land (SNL). As of the end of the year in 2012 there has been 65% coverage in the ear tagging of cattle in the 341 dip tank areas on Swazi Nation Land. The department envisages that the remaining dip tank areas (SNL) will be covered by the end of the year 2013 if things go according to plan. There is a concurrent programme (apart from the project) in which commercial cattle farmers are implementing the national identification exercise with the help and support of the department but at their own expense. Similarly both currently and on completion of the project, cattle farmers on SNL will also have to bear the cost of purchasing replacement ear tags that have either been lost or damaged for their cattle as well as new-born or imported cattle stock.