

## **Possible effects of distribution conditions on efficacy of veterinary drugs, chemicals and biologicals in Uganda**

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### **Abstracts**

Effective management of veterinary drugs, chemicals and biologicals is a prerequisite for quality, safe and efficacious livestock health products. Since the introduction of the policy of privatization and liberalization of veterinary service provision in the country, concerns have been mounting over quality and efficacy of veterinary supplies sold on the open markets. Like in most tropical developing countries, livestock production is concentrated in remote locations from the urban centers. Local variations in ambient temperature, humidity, transportation and handling conditions can adversely affect the final quality of these products at the end markets. A study was therefore undertaken to assess the distribution conditions of animal health products with a view of identifying possible factor that could reduce their efficacy. Five districts were randomly selected from each of the six major regions located away from the capital city of Kampala: the northern, west Nile, north eastern, eastern, southern and south-western regions, respectively. In each district, structured questionnaire were administered at the height of the wet and dry seasons to randomly select veterinary staff, drug suppliers, transporters, drug shop owners, drug inspectors and traffic police officers working in the major towns. Mean ambient temperatures and humidity were recorded during these periods. Data recorded included the means of transport (road, rail, water, air), the type of vessels (open lorry, closed containers, specialized trucks, plastic sheeting), the animal health products (antibiotics, antiparasitics, vaccines), length of single journeys and time of transportation. Higher dry season temperatures (33-37°C) were recorded in the greater compared to the south, where humidity were higher (75-87%) during the rainy seasons. Distributors can be divided into two major categories: the large scale companies employing veterinary staff up only 20% and the small time dealers dominated with 80%. With the exception of the southern region where water transport was predominant (90%), road transport was the most important (96%). Road appear to more preferred due to their less costs and higher speed in absence of well developed air and rail infrastructure. Specialized vans were the main vessels used by distribution companies (80%), while small timers (20%) used open Lorries covered with tents. Antibiotics and antiparasitics were the most common products, while vaccines did not appear on the lists of items. These may be due to difficulty of maintaining the cold chain required for most vaccines. All journeys took less than 24 hours, most during the night when products are less likely to suffer extreme temperatures. Further studies are recommended to assess efficacy of veterinary products sold at open markets.

**Key words:** Animal health products, Uganda, distribution, efficacy