

Dept of Agric
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A. General

Lack of veterinary care and ignorance of even the most elementary principles of livestock management perpetuate a deplorable state of animal health in Haiti. The ill-equipped and poorly financed veterinary services, consisting of one veterinarian and a small force of inadequately trained technicians, are unable to cope with the country's many serious animal diseases. Disease control is further handicapped by the illiteracy, superstition and primitive habits of large segments of the rural population.

The U.S. Agency for International Development (AID) and the United Nations Food and Agriculture Organization (FAO), in their efforts to improve Haiti's livestock production, have not been able to provide sufficient veterinary assistance. However, unless such assistance is rendered on an extensive and long-range basis, the existing animal health problems are unlikely to be solved.

B. Environmental factors affecting health

1. Topography and climate -- Frequent droughts, soil erosion caused by indiscriminate cutting of timber, and relentless exploitation of the arable land, preclude the growing of feed for any large numbers of livestock. But, with concerted efforts of irrigation, reforestation and soil conservation, many areas, such as the Artibonite Valley and the Northern and Cul de Sac Plains, could be adapted to profitable livestock raising. 1/ 4/ 11/ 19/ 21/ 25/

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2. Socio-economic pattern -- With the exception of a few dairy herds of well-to-do farmers in the Artibonite Valley and the Port-au-Prince (18-32N - 72-20W) area, there is little organized animal husbandry in Haiti. Peasant families, which are entirely ignorant of livestock management principles, may own a cow, one or two pigs, a horse, a burrow, several goats and perhaps eight to ten chickens. Cows and pigs are usually not kept for local food consumption purposes, but are destined for eventual sale, constituting a source of ready cash.

AID has attempted to improve animal production by introducing new livestock and by training the rural population in proper husbandry methods, but progress so far has been confined to local areas in the Artibonite Valley and the Department of the North. 1/ 7/ 8/ 9/ 17/ 19/

3. Animal and plant life

a. Animal

(1) Mosquitoes -- Except in the higher mountain regions, anopheline mosquitoes are ubiquitous in Haiti. Anopheles albimanus is the predominant species and the principal vector of malaria. Other malaria vectors are A. grabhamii, A. crucians and A. vestitipennis.

Aedes aegypti, a vector of urban yellow fever and dengue, is common. No yellow fever has been reported in Haiti, but dengue is widespread. Other aedes mosquitoes occurring are A. taeniorhynchus and A. sollicitans.

Culex pipiens quinquefasciatus, a carrier of filariasis, and Psorophora ferox, a pest of man and animals, are also known in Haiti.

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(2) Flies -- Numerous species of flies occur in Haiti. The most

important ones and the conditions they cause are:

<u>Musca domestica</u>	mechanical transmission of gastro-intestinal diseases in man.
<u>Stomoxys</u> spp.) <u>Lyperosia (Siphona)</u> spp.) <u>Atherix</u> spp.)	vicious "biters," serious nuisance.
<u>Simulium</u> spp.	serious nuisance, potential carrier of onchocerciasis
<u>Callitroga</u> spp.	cutaneous myiasis screwworm infestation in domestic animals.
<u>Calliphora</u> spp.	mechanical transmission of infectious diseases, cutaneous myiasis.

(3) Lice -- Pediculus humanus var. corporis is present but epidemic

typhus carried by this insect has not been reported. Various species of animal lice are found abundantly.

(4) Fleas -- The most common species of fleas are:

Ctenocephalides canis (dog flea)
C. felis (cat flea)
C. fasciatus (rat flea)
Pulex irritans (human flea)
Tunga penetrans (chigoe flea)

(5) Ticks and mites -- Of the numerous species of ticks in Haiti, the

following have been identified:

Dermacentor variabilis (American dog tick)
D. nitens
Rhipicephalus sanguineus (brown dog tick)
Amblyomma cajennense
Boophilus microplus

Identified mites include Eutrombicula batatas (chigger mite), Sarcoptes scabiei and Demodex spp.

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(6) Other arachnids and insect pests -- Other arachnids and insect

pests include Latrodectus mactans (black widow spider), Lycosa tarantula (tarantula), scorpions, reduviid bugs, bed bugs and fire ants.

(8) Worms -- Of the many types of worms existing in Haiti, the most

common identified species are:

Ascaris lumbricoides

Enterobius vermicularis

Nacator americanus

Strongyloides stercoralis

Haemonchus contortus

Oesophagostomum spp.

Metastrongylus spp.

Dirofilaria immitis

Stephanurus dentatus

Trichinella spiralis

Taenia solium (Cysticercus cellulosae)

T. saginata (Cysticercus bovis)

T. multiceps (Coenurus cerebalis)

Echinococcus granulosus

Hymenolepis nana

(9) Reptiles -- With the exception of crocodiles in Lake Etang

Saumatre, no poisonous or otherwise dangerous reptiles are known to exist in Haiti.

(10) Rodents -- The common types of rats exist in great numbers

throughout Haiti.

(11) Wild animals -- Mongooses and semi-wild dogs, which are an important

reservoir of rabies, are the only dangerous wild animals reported. Bats are common

but no cases of bat rabies have been recorded. There are no monkeys in Haiti.

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4. Nutrition

a. Dietary level -- The diet of Haiti's population, particularly in rural areas, is notably lacking in animal proteins. Relatively well-to-do families may eat meat once a week, while other families have it once or twice a month. Eggs are rarely eaten and milk is given only to small children. Various sorts of beans, eaten in large quantities, are the main source of protein. The diet is also short in fats of any kind. Corn, millet, manioc, sorghum and rice are the staple crops, but supplies do not always see the people through the year. In season, there are sweet potatoes, mangos, plantains and avocados. Oranges and grapefruits are plentiful, but are mostly marketed in the cities. Vegetables are little known. 1/4/7/8/10/12/13/17/

b. Food supply and distribution -- Most of the food in Haiti is produced and consumed locally. However, many peasants sell part of their seasonal harvests as well as part of their food animals in order to obtain imported foodstuffs, such as wheat flour and dried fish. Long droughts frequently cause crop failures, resulting in severe food shortages. Fish is available in coastal areas, but in the absence of refrigeration facilities it rarely reaches inland towns.

Most meat and dairy products for the elite and tourist hotels in the larger cities are imported. 1/4/8/10/13/

c. Food sanitation, storage and technology -- Except in the modern sections of Port-au-Prince and some other cities, food sanitation and storage are entirely inadequate. The absence of effective supervision and a lack of refrigeration facilities results in the marketing of unsanitary food products. 1/4/8/10/11/13/

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C. Diseases

1. Diseases of man -- Poor health, resulting from insufficient medical care, malnutrition, inadequate housing, ignorance and primitive habits, is a major problem in Haiti. Rural public health activities are greatly handicapped by a grave shortage of professional health officers and a lack of transportation facilities, leaving many rural clinics and dispensaries in the hands of inadequately trained technicians. Some private physicians in the larger cities occasionally visit the surrounding countryside, but only few peasants can afford to pay a doctor's fee or to buy the medicaments he prescribes. In 1943, an attempt was made to meet the shortage of physicians in rural areas by requiring new medical graduates to practice for two years among the peasants, but lack of medicaments, housing and transportation, as well as extreme isolation caused this plan to be abandoned. At present, most of the sick who turn for help to voodoo specialists or herb doctors (dokte fey) would not hesitate to seek qualified medical aid if such were available.

Disease statistics are virtually non-existent, the cause of death being established only in cases dying in hospitals. Furthermore, the absence of adequate diagnostic facilities makes it likely that not all diseases occurring in Haiti have yet been identified. 4/ 8/ 12/ 13/

a. Diseases prevalent among the population

(1) Malaria -- Malaria is one of Haiti's major health problems. It is believed that all Haitians, except those in the higher mountain areas, at one time or other have had malaria caused by Plasmodium falciparum. Only few cases of P. vivax have been reported. Of the four anopheline mosquito species present, A. albimanus

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is the principal vector of the disease. The National Malaria Eradication Program (SNEM - Service National Eradication de la Malaria), a joint enterprise initiated in 1954 by the Government of Haiti, the Pan-American Health Organization (PAHO), and the World Health Organization (WHO), had to be abandoned in 1959 because of lack of funds. 4/ 8/ 12/ 13/

(2) Tuberculosis -- Tuberculosis is widespread in Haiti, with a particularly high incidence in the crowded slum quarters of the larger cities. In the absence of any organized case finding program no figures as to the exact dimension of the disease are available. Present control measures consist of BCG-vaccination of all newborns in hospitals as well as the tuberculin testing and vaccination of school children in Port-au-Prince, Cap-Haitien (19-46N - 72-13W) and Les Cayes (18-12N - 73-45W). 4/ 8/ 12/

(3) Helminthiasis -- Ancylostomiasis is almost universal among the peasants; it is a result of fecal soil contamination and the custom of going barefoot. The disease is particularly severe among children 2-7 years of age, who play much on the ground, and is probably one of the reasons for Haiti's high child mortality. Other important helminth infections are ascariasis, enterobiasis, strongyloidiasis, trichiniasis, taeniasis and echinococcosis. There exists a small focus of schistosomiasis in the Dominican Republic, and unless Dominican authorities can prevent its spread the disease is likely to appear in Haiti. 4/ 8/ 12/ 13/ 23/

(4) Malnutrition and deficiency diseases -- Malnutrition and deficiency diseases are omnipresent in Haiti. Kwashiorkor is particularly common among the very young. Many children, as a result of a poor and insufficient diet, are severely stunted and do not reach physical maturity until an unusually late age. 4/ 8/ 12/ 13/

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(5) Typhoid fever -- Typhoid fever is endemic with epidemics occurring almost yearly during the dry winter season. The health authorities attempt to combat the disease through occasional immunization campaigns. u/ 12/

(6) Tetanus -- Tetanus is widespread and contributes markedly to the high mortality rate in newborns. In some schools in Port-au-Prince pupils receive tetanus immunization in the form of a diphtheria, pertussis and tetanus (DPT) vaccine. u/

(7) Syphilis -- Syphilis is a significant health problem. With the decline of yaws an increased number of cases have been recognized, but the full extent of the disease is still unknown. In Port-au-Prince, attempts are being made to treat infected prostitutes with penicillin injections, but budgetary cuts are likely to force the discontinuation of this measure. u/ 12/

(8) Poliomyelitis -- Although only a small number of infections are reported, polio appears to be much more widespread than is realized. Most cases occur during the dry season. Private physicians are using Salk vaccine, but a shortage of funds so far has not permitted its use in government hospitals and health centers. u/

(9) Arthropod-borne viral encephalitides -- While none of the encephalitides have been reported, it is believed that many of these diseases go unrecognized or are misdiagnosed as meningitis or nonparalytic poliomyelitis. u/

(10) Dengue fever -- Dengue fever exists throughout the country, with a particular high incidence in the Cap-Haitien area. Attempts to eradicate the carrier mosquito, Aedes aegypti, have been confined to the Port-au-Prince area. u/

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(11) Typhus -- Although no cases have been reported, one may assume that murine (flea-borne) typhus exists in Haiti. The disease occurs in the Dominican Republic and is unlikely to stop at the border, particularly since Haiti has an enormous rat population. No outbreak of epidemic (louse-borne) typhus has been recorded. ^{h/}

(12) Respiratory diseases -- Influenza-like infections frequently occur in epidemic form. Bronchopneumonia, lobar pneumonia and bronchitis are also frequent and severe. Many acute infections resembling herpangina occur, but the available facilities do not permit confirmation. ^{h/}

(13) Skin diseases -- Tropical ulcers, fungus infections, furunculosis and other skin conditions, are prevalent throughout the country. ^{h/ 13/}

(14) Yaws -- The effective SERPIAN (Service Eradication Rural Plan, a joint Government of Haiti/WHO enterprise) eradication campaign has reduced the incidence of yaws to an estimated 1000 cases. In the course of a house to house coverage, most infected people and their contacts were treated with penicillin. The north of Haiti is now considered free of yaws. ^{h/}

(15) Whooping cough -- Whooping cough is one of the principal causes of child mortality. ^{h/}

(16) Dental diseases -- Dental diseases are exceedingly common, but only a few people have an opportunity to see a dentist. Not only is there a large number of almost toothless adults, but even many children have lost most of their teeth. ^{13/}

(17) Other diseases -- Other diseases known to exist in Haiti are: Filariasis, amebic and bacillary dysentery, salmonellosis, diphtheria, scarlet fever,

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bacterial conjunctivitis, gonorrhoea, meningococcal infections, leprosy, leptospirosis, pinta, hepatitis, measles, trachoma, and allergies to plants and scrubs. 4/8/12/13/23/

(18) Animal diseases transmissible to man -- The following zoonoses are known to exist in Haiti: Rabies, anthrax, brucellosis, tuberculosis, salmonellosis, leptospirosis, echinococcosis, cysticercosis and trichinosis. 1/ 4/ 8/ 12/ 13/ 23/

2. Diseases of animals -- Haiti's livestock is beset by a multitude of serious diseases, but in the absence of any reliable reporting system their incidence and distribution remains largely unknown. Veterinary diagnostic facilities are entirely inadequate, so that some diseases existing in the country may not yet have been identified.

a. Prevalent animal diseases

(1) Anthrax -- Anthrax is widespread in Haiti, with a particular high incidence in the Artibonite and western regions. A vaccination campaign by the Department of Agriculture has failed so far to make major progress towards the control of the disease. 1/ 2/ 3/ 4/ 7/ 14/

(2) Parasitoses -- Gastro-intestinal and pulmonary helminthoses, echinococcosis, coccidiosis and ectoparasite infestations are omnipresent, causing severe debilitation and unthriftiness, and contributing to the high mortality of young animals. Horses in low, wet areas frequently are affected by "malzoo," an invasive parasitic granulomatosis of the skin. The etiology of this condition has not yet been determined. 1/ 6/ 9/ 14/ 17/

(3) Rabies -- Carried primarily by mongooses and stray dogs, rabies is a major threat to man and domestic animals. Control efforts by the Public Health Department, consisting of limited dog vaccination programs and occasional stray dog

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destruction campaigns, have done little to reduce the incidence of the disease. No bat rabies has been reported from Haiti. 1/ 2/ 3/ 4/ 11/ 15/

(4) Nutritional deficiencies -- Nutritional deficiencies, such as lack of protein and phosphorus, are the rule rather than the exception in all classes of livestock. These deficiencies are the result of the peasants' complete ignorance of their animals' feed requirements as well as the occurrence of frequent drought periods in many parts of the country. 1/ 6/ 11/

(5) Swine diseases -- Infectious diseases cause the loss of 50-60 percent of Haiti's annual swine crop. The most significant swine diseases are hog cholera, erysipelas, pasteurellosis and atrophic rhinitis. A government sponsored hog cholera immunization campaign failed completely, since most peasants with a yearly income of 40-50 dollars were unable to pay the price of 60 cents per dose of vaccine. 1/2/3/9/11/24/

(6) Poultry diseases -- Despite the efforts of FAO and AID experts, Haiti's poultry production is still in dire need of improvement. Aside from some experimental farms, poultry is usually never housed and roams over the countryside in search of food. Serious disease outbreaks cause a high mortality; Newcastle disease alone is believed to kill about half of the poultry population annually. Other important poultry diseases known to occur are: fowl pox, infectious coryza, fowl cholera, tuberculosis and coccidiosis. 1/ 2/ 3/ 9/ 11/ 15/ 17/

(7) Other important animal diseases -- A recent (1961/62) survey by AID indicated a high incidence of brucellosis, leptospirosis and anaplasmosis. Other important diseases recognized in Haiti are tuberculosis, salmonellosis, infectious icterohemoglobinuria (Clostridium hemolyticum), mastitis, tetanus, piroplasmosis and fungal infections. 1/ 4/ 6/ 9/ 11/

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D. Medical organization and administration (veterinary)

1. Civilian

a. Organization -- The Veterinary Section of the Department of Agriculture, Natural Resources and Rural Development (La Section Vétérinaire, Département de l'Agriculture, des Ressources Naturelles et du Développement Rural) is responsible for Haiti's veterinary services. The Section, staffed by one professional veterinarian and a small force of technicians, directs the veterinary activities of the government "agronomists" (agricultural school graduates), maintains a diagnostic laboratory and public clinic at the National School of Agriculture at Damiers (18-36N - 72-18W), and carries out foot-and-mouth disease quarantine inspection at harbors and airports. ^{2/ 3/ 7/ 14/}

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b. Legal controls

(1) Licensure -- There are no license requirements for veterinarians.

(2) Quarantine -- Haiti has laws and regulations governing the import of domestic and other animals. Present quarantine efforts are directed almost exclusively against the introduction of foot-and-mouth disease. ^{2/ 3/ 6/}

(3) Inspection -- The abattoir of the Haitian-American Meat and Provision Company at Damiers is the only slaughterhouse in Haiti operating under veterinary supervision. In other cities the inspection of meat and other animal products is carried out by public health inspectors who lack proper training for this task. Small communities have no supervision of slaughter and dairy operations whatsoever, resulting in the slaughter of diseased animals and the production of highly unsanitary milk. ^{4/ 16/ 24/}

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c. Professional veterinary organizations-- No professional veterinary organizations exist in Haiti.

d. Veterinary research -- No veterinary research is conducted in Haiti.

Some disease investigations are carried out by an American veterinarian at the Albert Schweitzer Hospital in Deschappelles (19-04N - 72-28W) in the Artibonite Valley. A visiting AID veterinary expert recently has conducted a limited disease survey. 6/ 9/

f. Emergency veterinary services -- No emergency veterinary services exist in Haiti.

2. Military veterinary organization -- There are no military veterinary activities in Haiti.

E. Medical manpower

1. Personnel -- Haiti's totally insufficient medical manpower consists of approximately 300 physicians, 100 dentists and a force of nurses, midwives and medical auxiliaries. About half the physicians are parttime employees of the Department of Health. The others are entirely in private practice or work in hospitals maintained by missions, philanthropic foundations, and foreign industrial companies. Many rural clinics and dispensaries are staffed solely by medical auxiliaries, leaving large proportions of the peasant population without professional medical care.

A government veterinarian and a veterinarian at the Albert Schweitzer Hospital are Haiti's entire professional veterinary personnel. Most veterinary activities are carried out by agricultural school graduates ("agronomists"), who have had some rudimentary veterinary training. 2/ 3/ 4/ 9/ 12/ 22/

2. Training -- The University of Haiti at Port-au-Prince has a medical and dental

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faculty. A school of nursing, attached to the medical faculty, provides training for nurses and midwives. The medical faculty graduates 35 physicians annually, most of whom have emigrated in recent years. Medical training, which is not comparable to that in the U.S., consists of a six-year course, including a one year internship.

Aside from some rudimentary training at the National School of Agriculture and some instruction by visiting veterinary experts, no veterinary schooling is available in Haiti. 4/ 5/ 8/ 12/ 13/ 22/

F. Veterinary facilities -- The diagnostic laboratory and public clinic at the National School of Agriculture at Damiens and a clinic at the Albert Schweitzer Hospital in Deschappelles are Haiti's sole veterinary facilities. 2/ 3/ 9/

G. Veterinary supplies -- No veterinary supplies and medicaments are produced in Haiti. 2/3/

H. Reference data -- Not included in this report.

I. Comments on principal sources

1. Evaluation -- The available source material on animal and human health matters is general in nature. A lack of any reliable statistics precludes a detailed discussion of the incidence and extent of many diseases.

Sources 1, 2 and 3 were useful for most sections of the veterinary part of this report, while source 4 contributed information on human diseases and medical manpower.

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