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Some Aspects of Veterinary Medicine and Veterinary Services in Israel

by Zadok Ruben

During the summer of 1970, while vacationing in Israel, I talked with several Israeli veterinarians from whom I learned about several aspects of the activities of the Government Veterinary Services. The purpose of this paper is to present a review of some aspects of veterinary medicine in Israel with an emphasis on the Government Veterinary Services.

Israel is located on the eastern shore of the Mediterranean Sea. Its area is 20,700 km$^2$ and its population is 2,745,000. Also, the Golan Heights, the Western Bank, the Gaza Strip and the Sinai Desert are presently under Israeli control; as a result, all matters concerning veterinary medicine in these areas are under the supervision of the Israeli veterinary authorities. The permanent agricultural cultivated area is 4,410 km$^2$, which is almost the maximum area suitable for agricultural cultivation. The main agricultural crops

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are citrus fruits, avocado, potatoes, sugar beets and sorghum. Since the establishment of the State in 1948 the population of the domestic animals has grown tremendously as shown in Table 1.

<table>
<thead>
<tr>
<th>Animal</th>
<th>1947/48-1951/52</th>
<th>1967/68</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>55,000</td>
<td>225,000</td>
</tr>
<tr>
<td>Sheep</td>
<td>53,000</td>
<td>199,000</td>
</tr>
<tr>
<td>Goats</td>
<td>34,000</td>
<td>144,000</td>
</tr>
<tr>
<td>Chickens</td>
<td>4,425,000</td>
<td>6,950,000</td>
</tr>
<tr>
<td>Ducks</td>
<td>35,000</td>
<td>1,400,000</td>
</tr>
<tr>
<td>Bees</td>
<td>29,000</td>
<td>73,000</td>
</tr>
</tbody>
</table>

Some additional data may shed more light on the size of the domestic animal and livestock industry in Israel: in 1967-68, 89,200 metric tons of poultry meat, 19,000 metric tons of beef meat and 4,000 metric tons of lamb meat were produced from slaughtered animals. This shows the importance of poultry in the Israeli animal protein production industry. In 1968, 1,224 million hen eggs were produced in Israel (compared to 300 million produced in 1948). The Israeli consumption of hen eggs per capita is one of the highest in the world.

Cows' milk production in 1968 was 406,000 metric tons compared to 30,000 metric tons from goats and 20,000 metric tons from sheep. Israel's milk production per dairy cow is very high: in 1968 the annual milk production per cow was 5,021 Kg (compared to 3,330 Kg in 1948). This is compared to 4,085 Kg and 4,250 Kg annual production per cow in the U.S.A. and Holland in 1968, respectively. Israel has developed its own breed of cows which is a cross of the local Syrian breed and the Holstein-Friesian breed. The present Israeli-Friesian breed is very similar to the pure Holstein-Friesian breed in external features. The high milk production is ac-
accomplished due to the adoption of an intensive management which includes selection, artificial insemination, high quality feeding programs and programmed veterinary care.

In 1966 Israel’s income from agricultural export, aside from citrus products, was $22,000,000 of which about 30% was from animal resources, mainly edible eggs, eggs for hatching, one day old chicks, honey, calves, fat, fish and dairy products.

Israel still imports about 40–60% of its beef meat which comes as frozen carcasses mainly from South American countries. This source of meat may be a route for introduction of animal diseases into the country. Also, Israel is in a non-peaceful political state with its neighboring countries; as a result, no cooperative programs for control and eradication of diseases could presently be developed in the Middle East as a whole. The solutions of these two specific problems and the regular veterinary concerns are the challenges of the veterinary profession in Israel.

Israel has no school of veterinary medicine. As a result, all its veterinarians have obtained their professional education from non-Israeli institutions. In 1969, there were 274 veterinarians in Israel of which 239 were graduates from European Veterinary Schools, mainly from Holland, Switzerland, France, Italy, Austria, Poland, Germany and Britain. Seventeen other veterinarians were graduates from veterinary schools in the U.S.A. The other 19 veterinarians were graduates from veterinary schools in other countries in the world. Of the 274 veterinarians in 1969, 72 worked at the Ministry of Agriculture, 68 with Hahaklait, 60 in municipalities and local councils, 19 in research and teaching institutions and 15 in private practice (mainly small animals). There were approximately 40 Israeli students studying veterinary medicine abroad in 1969.

The establishment of a veterinary school in Israel is still a controversial issue. Those who believe in the necessity of having the institution are mainly concerned about the lack of a central body for veterinary academic activities. Those who are against the establishment of the school claim that the financial requirements for the school are too demanding for preparing twenty graduating veterinarians annually. Dr. A. Hadani believes that an Israeli veterinary school will be established in association with the University of Tel-Aviv within ten years. The emphasis would be on the studies of exotic and tropical diseases of animals, and about half of the students would be non-Israelis.

The spine of Israeli veterinary medicine is the Government Veterinary Services. This body is under the administration of the Israeli Ministry of Agriculture and is directed by Dr. I. Dafni. It includes eight field veterinary service offices which are involved with diseases of sheep, poultry, fur bearing animals and honeybees. These offices also supervise five rabies observation kennels.

Figure 2: The Awassi sheep: This breed has been improved in Israel through selection from the old local breed of sheep. It is raised for dairy, meat, and wool production. It has especially been improved for dairy production. Dairy sheep herds are under highly mechanized management in Israel. Other breeds have been imported into the country among which the most popular is the Marino breed. Cross breeding management especially for better meat production is becoming more popular in Israel. (Photograph courtesy of the Consulate General of Israel—Chicago, Illinois)
Figure 3: Light Arabian stallion: Horses in Israel are used as draft animals and as pleasure animals. Horse shows and riding horse clubs are becoming more popular in Israel. The Arabian horse (light, medium, and heavy types) is the dominant breed; however, other imported breeds such as the Quarter Horse, Highland Pony, Belgian Horse and British Thoroughbred are also raised in Israel.

The field veterinary services are carried out by district veterinarians. They have an authority of action by government laws which register fifty-two animal diseases. These diseases should be reported; also, actions of inspection, quarantine, vaccinations, slaughter and other means of eradication should be carried out against these diseases as specified by the law. Most of the 52 diseases do not exist in Israel any more. Among these are diseases which are found in the area such as rinderpest, African horse sickness, glanders, dourine, equine encephalomyelitis, fowl plague, pullorum disease, fowl typhoid, and others.

Other diseases are adequately controlled; as such are foot and mouth disease, bovine tuberculosis, brucellosis (B. abortus and B. melatensis), paratuberculosis in cattle and sheep, leptospirosis, vibriosis, sheep pox, contagious ecthyma, Hypoderma bovis infestations and others. Of the poultry diseases, Newcastle disease seems to be the most serious one. Vaccinations with chick embryonated vaccine are carried out routinely, also, maintenance of good sanitation and separation of age groups are somehow helpful in the prevention of the spread of the Newcastle disease.

Concerning foot and mouth disease, yearly vaccination is compulsory. In addition, a continuous follow up of outbreaks in the countries of the area is carried out. The virus antigenic types vary during the different years and the vaccination requirements are changed accordingly. Also, sheep imported from Jordan for meat consumption are inspected on the border and are sent directly to slaughter under supervision. Presently, bulls for breeding purposes are imported under strict supervision, from Germany only, where the disease is under control.

Figure 4: Poultry husbandry: The Leghorn breed is the most popular chicken breed in Israel. Flocks of this breed are raised mainly for egg production, both for consumption and for hatching. Heavier breeds such as Rhode Island Red, New Hampshire and Sussex are also raised; however, the crossings of these breeds with the Leghorn breed are the most popular for meat production purposes. Israel exports one-day old chicks to European, Asian, and African countries. (Photograph courtesy of the Consulate General of Israel—Chicago, Illinois)
Figure 5: Beef cattle in Israel—a crossing of Brahma breed origin: The economical conditions allow Israel to produce only 40-60% of its beef consumption while the rest is imported as frozen carcasses mainly from Latin American countries. Careful management of cross breeding (between local and imported breeds) has proved to be successful for better meat production. (Photograph courtesy of the Consulate General of Israel—Chicago, Illinois)

Although routine vaccinations for rabies are required and persistent destruction of stray dogs and jackels is carried out, rabies is still a problem in Israel. Apparently, in most cases the disease is introduced by infected animals from across the borders. The closer contact since 1967 with the Western Bank has introduced new problems concerning the control of the registered diseases. Bovine tuberculosis is found only in this area and the disease is in a process of eradication. One of the duties of the field veterinarian in Israel is ear tagging of farm animals. This is also required in the Western Bank. Also, the regulations of the registered animal diseases according to the Israeli law are enforced in the Western Bank.

An important unit of the Government Veterinary Services is the Veterinary Institute which is directed by Dr. A. Hadani. This institute includes laboratories of pathology, microbiology, diagnostics, reproduction, mastitis, toxicology, poultry diseases and others. The diagnostic laboratories are concerned with the diagnosis of all field cases. Another important function of the institute is production and testing of vaccines. Also, the institute has been involved lately with postgraduate teaching and training for veterinarians not in basic sciences. The research which is carried out in the institute could be divided into three major categories: 1) clinical research according to field case reports, 2) applied research of diseases such as mastitis, leukemias, tick fevers, and Newcastle disease, and 3) basic research in biochemistry and enzymology. This institute cooperates with other similar institutes in France, South Africa, Australia, England, U.S.A., Greece, Turkey, Italy and Yugoslavia. This institute also cooperates with the Israeli universities and human hospitals, organizes continuing education courses for veterinarians and sponsors visitors from outside Israel; i.e., from January to June 1970 this institute hosted eight foreign visitors from seven different countries.
The pathology department of the Veterinary Institute, headed by Dr. T. Nobel, is involved with diagnostic procedures, research of arteriosclerosis, bovine leukemia and sheep pulmonary adenomatosis. This department also carries a follow up of diseases such as leptospirosis in wild rodents, lymphosarcoma and other neoplasms in domestic and wild animals.

The toxicological laboratory of the Veterinary Institute is headed by Dr. M. Eged and is involved with routine toxicological diagnosis and follow up of clinical chemistry of parturient paresis and other diseases. This laboratory also conducts research on organophosphate toxicities.

The other two units of the Government Veterinary Services are 1) Quarantine and Ports and 2) Inspection of Animal Products. The latter is directed by Dr. R. Kathsein. This unit is involved with inspection of slaughter houses (of poultry and ruminants), inspection of food products from animal sources, certification of exported animal products and to a lesser extent with zoonosis. Under government law, the slaughter houses are becoming more modernized and more centralized. This is to facilitate the veterinary inspection in order to meet the proper requirements for the Israeli needs and also of countries which are importing Israeli products. Apparently, Salmonella contamination is the most serious problem in imported food products from animal sources (in the last year seven new types of Salmonella which had not existed in Israel were introduced with imported fish meal and meat meal). Imported frozen carcasses are inspected at random and usually they are non-contaminated upon arrival to Israel; apparently, the problem of contamination is during the transportation of the carcasses in Israel.

An important organization in the Israeli veterinary medical picture is Hahaklait (Mutual Livestock Insurance Incorporation). This incorporation hires veterinarians who render veterinary medical services for the incorporation clients' livestock throughout the country. The veterinarians are equipped and supplied by the incorporation. This type of organization leaves almost no place for large animals private practices such as those commonly found in the U.S.A. As a result, the private practice is limited to small animals and horse riding clubs. The future outlook for small animal practice in Israel is very promising because of the rise in the standard of living which has resulted in an increased number of pets.

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REFERENCES