The cattle population of Japan was about 3.7 million in 1974 and increased to approximately 4.2 million by 1979 following implementation of grazing programmes to increase the production of animal protein in Japan. A nationwide survey conducted in 1970 revealed that piroplasmosis was the most important disease affecting grazing cattle, and this situation still remains. As mixed infection with Theileria and Babesia is common in Japan, theileriosis and babesiosis have collectively been called piroplasmosis.

Theileriosis is a major threat to grazing cattle in Japan except in Okinawa Prefecture. Cattle are infected with one species of Theileria, namely T. sergenti. So-called theileriosis may, in many cases, have been caused by B. ovata (new species) (Minami & Ishihara, 1980). In Okinawa Prefecture, in the subtropical region, B. bigemina and B. bovis causing babesiosis and Anaplasma marginale causing anaplasmosis are important organisms.

Formerly Japanese T. sergenti was classified as T. mutans or related species. However, clinico-hematologic and serological experiments were carried out to compare the Japanese T. sergenti with the Russian T. sergenti and the African T. mutans. Parasites were passaged mainly in splenectomized Holstein-Friesian calves by infestation with infected ticks (Haemaphysalis longicornis) or by the inoculation of infected blood. As a result, the average period of incubation of the Japanese T. sergenti was proved to be 23 days following tick transmission and 21 days following inoculation of frozen blood. H. longicornis produced in Japan acted also as a vector for the Russian T. sergenti. The mean size of various forms of the Japanese T. sergenti were: bacilli form 2.15 x 0.73 μm, oval form 1.97 x 1.22 μm, spherical form 1.46 μm and anaplasma-like form 0.54 μm in diameter. The highest average
parasitaemia of the Japanese \textit{T. sergenti} was 11.9\% and the average decrease in erythrocyte count 70.6\%. Symptoms such as pyrexia, depression, and anorexia appeared as the \textit{Theileria} multiplied. No hemoglobinuria occurred nor were schizonts detected. Essentially the same results were obtained from the Russian \textit{T. sergenti} as from the Japanese \textit{T. sergenti}.

\textit{T. mutans} was lower in pathogenicity than \textit{T. sergenti}. No cross immunity to infection was established between the Japanese \textit{T. sergenti} and \textit{T. mutans}, but there was good serological agreement between the Japanese and the Russian \textit{T. sergenti} in both complement fixation and indirect fluorescent antibody tests.

In the case of the Japanese \textit{T. sergenti} infection does not always result in apparent disease. Many stresses, namely: mixed infection with other pathogens, changes in feeding, management and environment, parturition, transportation, grazing etc., precipitate clinical theileriosis.

In control of the disease, 8-aminoquinoline compounds are effective on the erythrocytic stage of Japanese \textit{T. sergenti}. Pamaquine oil is still in wide use, and injection of large doses of diazoamine dibenzamidine (a babesiacide) is effective against strains resistant to 8-aminoquinoline.

Efficient tick control will always be of prime importance in theileriosis control. For this purpose, the direct sprinkling and dusting of acaricides on the body of cattle are used. These methods are effective in reducing the tick population. However, it is still difficult to reduce the rate of \textit{T. sergenti} infection. When the use of grazing land is suspended for 1-2 years, the heavy epizootic pasture is cleaned. But, this is far from a practical prevention method.

The immunization of cattle by intentional infection with \textit{T. sergenti} during a housing period in winter, was reported by Ishihara \textit{et al} (1962). Since then, this technique has been used for cattle pastured seasonally in some parts of the country. Frozen infected blood was used as live vaccine from 1974. \(2.0 \times 10^8\) parasitized erythrocytes were injected subcutaneously into all experimental cattle. It was found that the live \textit{Theileria} vaccine had an inhibitory effect on the clinical manifestation of