

# 1. PREFACE

The purpose of meat inspection is to maintain food sanitation standards in order to protect consumers from the risk connected with meats and other food products. Thus, accurate inspection methods are required to cope with diverse diseases. At meat inspection sites, many scientifically interesting cases can be found related to pathological materials. Miyazaki prefecture is one of the eminent livestock industry prefectures in Japan. And Miyazaki, the number of beef cattle slaughtered annually is about 60,000 beef cattle and inspections discover pathologic tumors in many cases. As part of a study concerning classification of cattle tumors and pathology analyses in Miyazaki prefecture, we investigated the situation related to the annual incidence of tumors at individual facilities among beef cattle slaughtered and dressed at meat-processing facilities in Miyazaki prefecture. Cases of mesothelioma, which had been detected frequently within the jurisdiction of the Miyakonojo Meat Inspection Office, were investigated.

Mesothelioma is a tumor, which occurs in the serous membrane within the thoracic and peritoneal cavities. This disease has been found in many animals, including livestock. In humans, Wagner et al. in South Africa reported in 1960 that asbestos is a cause of mesothelioma. Since then, there have been many reports in which asbestos has been involved. Recently, human mesothelioma cases related to a history of exposure of the body to asbestos have been reported from various places in Japan.

Chapter 1 contains the results for compound cases of malignant mesothelioma and ovarian granule cell tumor in cattle that were investigated histopathologically and immuno-histochemically. As for malignant mesothelioma of thoracic tumor, the cells were cultured to conduct histopathological and immunohistochemical examinations. In addition, we also investigated 328 tumor cases detected among 139,556 cattle in the jurisdiction of the

Miyakonojo Meat Inspection Office during a 21-year period from April, 1974 to March, 1995 and discussed the etiologies of the compound tumors encountered.

There have been only a few reports on long-term statistical investigations of livestock tumors, taking regional features into consideration. In Chapter 2, the annual variations in the detection and histopathological classification were described in the 377 tumor cases among 162,328 cattle examined within the jurisdiction of Miyakonojo Meat Inspection Office for 23 years from April, 1974 to March, 1997.

In Chapter 3, the annual variations involved in the situation of the detection and histopathological classification are described in 542 tumor cases at six Meat Inspection Offices in Miyazaki Prefecture over a period of 16 years and the findings of these epidemiological surveys, including breed, sex and production sites are indicated. .

In Chapter 4, the findings of surveys concerning breed, sex, age, and production site for mesothelioma cases occurring especially within the jurisdiction of Miyakonojo Meat Inspection Office and those related to histopathological and immunohistochemical examinations of individual lesion sites and histological types are presented. A comparison of incidence levels was conducted between nationwide Meat Inspection Offices and Miyakonojo Meat Inspection Office. We also surveyed the use of volcanic ash containing similar chemical components to asbestos, specific to Southern Kyushu, found in cattle barns, and discuss the relationship of use of this material with the occurrence of cattle mesothelioma.

Finally, in Chapter 5, rare malignant aortic body tumor cases in cattle are described in connection with histopathological and immunohistochemical examinations.