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F. Mukai, S. Tsuji, K. Fukazawa, S. Ohtagaki, Y. Nambu

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Laboratory of Animal Breeding, Faculty of Agriculture, Kobe University, Kobe, Japan

History and population structure of a closed strain of Japanese Black Cattle

By F. MUKAI, S. TSUJI, K. FUKAZAWA, S. OHTAGAKI and Y. NAMBU

Introduction

Japan is actually a small country in respect to geographic size. It is so mountainous that only 15% is under cultivation, where intensive rice production is practiced. A small area is available for farming and hence intensive but small scale animal production has been practiced. There are 2.8 million reproductive cows; of which 2 million are dairy cows and the remaining 0.8 million beef cows. The major beef breed is Japanese Black which consists of 0.75 million reproductive cows. Around the 2nd century, cattle migrated from North China via the Korean peninsula to the Western half of Japan. This cattle movement was accompanied by the introduction of rice cultivation. Therefore, in the Western half of Japan rice cultivation spread widely together with cattle so that more draft cattle were reared in the Western half of Japan than in the East. These are historical and geographical reasons why the Western half, especially five prefectures in the Chugoku regions, Hyogo, Tottori, Okayama, Shimane, and Hiroshima, have traditionally formed the major breeding units of Japanese Black cattle.

The Northern part of the Chugoku regions faces the Sea of Japan. The land is divided into many small patches separated from others by rugged hills or impassable mountains until modern ages. Marine transportation with tiny boats was the only way of movement. Therefore, it was virtually impossible to transport bulls for matings until the last half of 19th century. For this reason geographically separated closed strains of cattle originated and were maintained for over 1000 years. Since the 16th century a manual steel industry developed in these areas, which required bulls with great strength. Steel entrepreneurs started to select cows and bulls for draft. Mention of several famous strains of cattle called 'tsuru', which means runners or vines of plants, appeared in old manuscripts. 'Tsuru' had been characterized by longevity, good reproduction and strength. In the Tajima area, the northern mountainous part of Hyogo prefecture bordering the Sea of Japan, several famous 'tsuru' occurred over the last 400 years.

At the end of the 19th century, in the Meiji era, centralization and modernization of the government dramatically changed the situation of the agriculture and eating habits. It encouraged a forward surge in dairy and beef production as well as in crop production. For this purpose bulls of several European breeds had been imported for grading up native breeds. The breeds involved were Holstein, Simmental, Ayrshire, Swiss Brown, Shorthorn, and Devon. In the Tajima area, three locally separated strains, each including two or three famous 'tsuru' lines, were maintained. One of them is the strain of Mikata which consisted of about 3,000 cows and a small number of bulls.

In the Mikata strain, cows were graded up by seven Swiss Brown bulls from 1903 to 1909 to improve their size and milk performance (Table 1). By crossing, the cows became larger in size and produced more milk than before but required more feed and became less active for draft and hence the farmers got disappointed with the introduction of foreign genes. There-

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