

ABSTRACT

**Comparison of genetic gains per year for carcass traits among breeding programs in the Japanese Brown and the Japanese Black cattle<sup>1</sup>**

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The breeding program for beef cattle in Japan has changed dramatically over 4 decades. Visual judging was done initially, but progeny testing in test stations began in 1968. In the 1980s, the genetic evaluation program using field records, so-called on-farm progeny testing, was first adopted in Oita, Hyogo, and Kumamoto prefectures. In this study, genetic trends for carcass traits in these 3 Wagyu populations were estimated, and genetic gains per year were compared among the 3 different beef cattle breeding programs. The field carcass records used were collected between 1988 and 2003. The traits analyzed were carcass weight, LM area, rib thickness, s.c. fat thickness, and beef marbling standard number. The average breeding values of reproducing dams born the same year were used to estimate the genetic trends for the carcass traits. For comparison of the 3 breeding programs, birth years of the dams were divided into 3 periods reflecting each program. Positive genetic trends for beef marbling standard number were clearly shown in all populations. The genetic gains per year for all carcass traits were significantly enhanced by adopting the on-farm progeny testing program. These results indicate that the on-farm progeny testing program with BLUP is a very powerful approach for genetic improvement of carcass traits in Japanese Wagyu beef cattle.

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