

P-4. Relationships of dam's body weight at parturition and reproductive traits in Syrian hamsters selected by weaning weight (Abstracts of the International Symposium on Recent Advances in Animal Science (IS-RAAS), Joint meeting of 2nd IS-AS and 3rd IS-IFS)

著者	Ishii K., Satoh M., Sasaki O., Takeda H., Furukawa T., Nagamine Y.
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P-3. Development of the overall breeding goal and selection index of Japanese Shorthorn using field records

T. Yamazaki¹, H. Takeda¹, A. Nishiura¹, K. Suzuki², S. Komatsu³, K. Suzuki³, J. Yasuda³ and A. Nishida²

¹National Agricultural Research Center for Hokkaido Region, ²Graduate School of Agric. Sci. Tohoku University, ³Iwate Animal Industry Research Institute, Japan

Japanese Shorthorn can keep high growth rate on high roughage conditions. However, the price in carcass market is low, because of lower meat quality grades (e.g. beef marbling score (BMS)). On this study, we evaluated the effect of improvement based on the selection index to improve meat quality keeping growth ability.

The genetic parameters of eight traits (two growth traits, four carcass traits, and two price traits) were estimated on field records. We assigned that goal A to improve two meat quality traits, and goal B to improve the price in carcass market. Both goals were restricted to keep growth trait. Selection indices were calculated for the goal A and B. The responses based on the selection index for goal B were desirable in all eight traits, while the correlated response based on that for goal A was negative in daily gain on calf. The number of generations of selection to reach the goal A and B were 17.98 and 7.76, respectively. It was suggested that improving based on the price of carcass market is more effective and balanced than that based on meat quality.

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K. Ishii¹, M. Satoh², O. Sasaki¹, H. Takeda³, T. Furukawa¹ and Y. Nagamine¹

¹National Institute of Livestock and Grassland Science, Ikeno-dai 2, Tsukuba, 305-0901, JAPAN, ²National Institute of Agrobiological Sciences, Tsukuba, Japan, 305-8602, ³National Agricultural Research Center for Hokkaido Region, Sapporo, 062-8555, Japan

Fifteen generations of selection were conducted to study the response for weaning weight (WW) of standardized litter size in Syrian hamsters. The experiment involved four lines: selection on an estimate of direct genetic effect of WW (line A); selection on an estimate of maternal genetic effect of WW (line M); selection on estimate of an aggregate genetic value of direct and maternal effects of WW (line B); a randomly selected control (line C). Direct and maternal effects were estimated from an animal model BLUP. Significant differences between C and each selected line for WW were found at after generation 5; linear regressions of WW in selected lines as a deviation from C on generation number were all significantly positive. Mean estimates of direct and maternal genetic effects for WW increased linearly with generation in each selected line. Heritability estimates for body weight at parturition (BWP) was 0.41, and genetic correlation between BWP and number of born alive and litter weight at birth were -0.05 and 0.14, respectively.