

登錄種豬之基因多樣性分析

廖仁寶 陳若菁 王玉雪 吳明哲

行政院農業委員會畜產試驗所

畜養動物基因多樣性的保護，為第 10 屆生物多樣性締約國會議所訂定愛知目標重要的標題目標之一。本研究應用 18 組豬之微衛星型遺傳標記，分別分析 90 個藍瑞斯、60 個約克夏及 90 個杜洛克品種豬的 DNA 樣品，經分析後得知 4 種參數，其交替基因數、期望異質度、觀測異質度及多態性訊息量範圍分別為 4-12、4-8、3-8；0.184-0.834、0.089-0.789、0.171-0.812；0.528-0.799、0.339-0.817、0.422-0.761；0.399-0.757、0.163-0.722、0.435-0.711，而其平均值則分別為 7.0、6.2、5.8；0.661、0.678、0.594；0.601、0.621、0.533；0.614、0.627、0.530。因此，三個品種豬的平均 PIC 值均大於 0.50，尤以約克夏豬的 PIC 值最大，此結果表示族群具有高度遺傳多態性資訊，

關鍵語：種豬、微衛星型遺傳標記、基因多樣性

EVALUATING GENETIC DIVERSITY OF REGISTERED BREEDING PIGS BY MICROSATELLITE MARKERS

R. B. Liaw, J. C. Chen, Y. S. Wang and M. C. Wu

Livestock Research Institute, Council of Agriculture, Executive Yuan

The genetic diversity protection of domesticated animals is one of the important targets of Aichi Biodiversity Targets adopted by the Tenth Meeting of the Conference of the Parties (COP10) to the Convention on Biological Diversity. A total of 240 pigs including 90 Landrace pigs, 60 Yorkshire pigs, and 90 Duroc pigs were genotyped using 18 microsatellite markers. In this study, the values of allele number, expected heterozygosity (H_e), observed heterozygosity (H_o), and polymorphism information content (PIC) ranged from 4-12, 4-8, and 3-8, 0.184-0.834, 0.089-0.789, and 0.171-0.812, 0.528-0.799, 0.339-0.817, and 0.422-0.761, and 0.399-0.757, 0.163-0.722, and 0.435-0.711 for Landrace (L), Yorkshire (Y), and Duroc (D), respectively. Moreover, the average values of H_e , H_o , and PIC were 7.0, 6.2, and 5.8, 0.661, 0.678, and 0.594, 0.601, 0.621, and 0.533, and 0.614, 0.627, and 0.530 for L, Y, and D, respectively. Therefore, the average PIC values of three pig breeds were larger than 0.5. Particularly, the PIC of Duroc pigs was the largest among three breeds of pigs. The results indicated that the pig population possesses high genetic diversity.

Key Words: Breeding pig, Microsatellite marker, Genetic diversity