

乳牛短脊椎綜合症基因頻率分析

廖仁寶⁽¹⁾ 陳若菁⁽¹⁾ 蔡新興⁽¹⁾ 周宜昌⁽²⁾ 蕭宗法⁽¹⁾ 吳明哲⁽¹⁾

⁽¹⁾行政院農業委員會畜產試驗所 ⁽²⁾臺南市動物防疫保護處

牛短脊椎綜合症為一種隱性遺傳疾病，於 2006 年時首度在丹麥被發現。本症狀形成的原因為在牛第 21 號染色體上的 *FANCI* 基因有 3.3 kb 片段的缺失。本研究自兩家民間乳牛場分別收集 32 頭與 112 頭乳牛血液樣品。經基因篩檢後，在 A 場發現有 2 個樣品之基因型為雜合型，在 B 場則發現有 6 個樣品之基因型為雜合型，其雜合型之頻率為 5.6%。此結果低於荷蘭(7.4%)與美國(6%)的研究報告，但高於中國(3.8%)的研究報告。由於短脊椎綜合症會造成酪農產業的損失，實有必要進行大規模的乳牛族群篩檢，並以選擇配種的方式，逐步篩除此一不良的基因。

關鍵語：短脊椎綜合症、乳牛、*FANCI* 基因

FREQUENCY OF BRACHISPINA SYNDROME OF DAIRY COWS

R. B. Liaw⁽¹⁾, J. C. Chen⁽¹⁾, S. S. Tsay⁽¹⁾, Y. C. Chou⁽²⁾, T. F. Shiao⁽¹⁾ and M. C. Wu⁽¹⁾

⁽¹⁾Livestock Research Institute, Council of Agriculture, Executive Yuan

⁽²⁾Tainan City Animal Health Inspection and Protection Office

Bovine brachyspina syndrome (BS) is a recessive genetic defect first observed in Denmark in 2006. The syndrome is caused by a 3.3-kb DNA deletion in the bovine Fanconi anemia complementation group I (*FANCI*) gene on bovine chromosome 21. In this study, a total of 144 dairy cow samples including 32 samples from A farm and 112 samples from B farm were examined. The result indicated that 2 carriers were from A farm and 6 carriers were from B farm. The frequency of BS carriers in this study was 5.6% which was lower than that reported in the Netherlands (7.4%) and the United States (6%) but was higher than that in Mainland China (3.8%). The dairy industry has huge losses due to brachyspina syndrome. The genetic defect should be eliminated gradually by large scale genotyping and selective mating.

Key Words: Brachyspina syndrome, Dairy cow, *FANCI* gene