

Genotype screening on cholesterol deficiency of dairy cattle herds in Taiwan ⁽¹⁾

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Abstract

Cholesterol deficiency (CD) is an inherited autosomal recessive defect and has been identified recently in Holstein cattle, which results in idiopathic diarrhea to death of calves, and thus causes unpredictable economic losses to dairy farmers. The purpose of this study was to optimize the genotyping protocol and survey bovine cholesterol deficiency carrier frequency in Taiwan dairy cattle populations, and thereby offered a low risk and basic mating strategy for dairy farmers. A total of 539 cow samples from 6 dairy herds were genotyped. Ten samples were genotyped as CD carriers, which accounts for 1.86% (10/539) in terms of frequency, and the others were normal. Although the carrier frequency was low (< 2%) compared to those in other countries, CD unfavorable allele was indeed introduced to Taiwan's cattle populations by artificial insemination. Pedigree analysis suggested that the frozen semen products were originated from the decedents of Maughlin Storm bull and/or due to imported adult cows. The CD genotypes of bovine frozen semen products need further surveillance to ensure no CD carrier calves born in Taiwan, and thus, the loss of dairy industry due to CD defect can be avoided.

Key words: Cholesterol deficiency, Dairy cattle, Frozen semen, Genotyping.

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