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IDENTIFICATION OF QTLS FOR MILK PRODUCTION TRAITS OF DAIRY CATTLE BREEDS IN SRI LANKA – A PILOT STUDY

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The development of dairy sector in Sri Lanka is very important for the sustainable economic development. Economically important traits such as milk yield and meat quality are quantitative traits. Hence, the identification of QTL (Quantitative Trait Loci) responsible for economically important traits is essential in the marker assisted selection. The present study was conducted to identify QTLs for milk production of dairy cattle breeds in Sri Lanka using species specific microsatellite markers.

Cattle blood samples were collected from three different locations, Livestock Field Station-Uda Peradeniya (Jersey, Friesian breeds), Ambewela Farm-Nuwara-Eliya (Ayrshire), and New Zealand Farm-Nuwara-Eliya (Friesian). Genomic DNA was extracted and genotypic analysis was done using four different cattle specific microsatellite markers *ETH225, BM6425, BM3517* and *RM011*. The polyacrylamide gel electrophoresis (PAGE) was performed for the resulted PCR products. Bands on the PAGE were manually read. Statistical analysis was done using SAS 9.1 statistical package to determine the association between milk yield and bands.

The marker *ETH225* exhibited distinguishable bands when compared to the other markers. Hence, it was used for further statistical analysis. The B1 band of the marker *ETH225* is significantly associated with the high yield of milk. In the absence of the band, mean milk yield was 424.85 L and in the presence of the band milk yield was 549.6 L. Based on the data, the marker *ETH225* can possibly be used to select high milk yielding cattle for the dairy cattle breeding programs.