Mise en évidence de régions QTL sélectionnées dans une lignée synthétique sino-européenne

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Highlighting selected QTL regions in a synthetic Sino-European line

The French pig breeding organisation ADN has been developing since 2001 the Chinese-European composite line Duochan (25% Meishan, 25% French Landrace, 50% Large White). In order to set up marker-assisted selection in the Duochan line, molecular screening was conducted (1) to confirm the effects of QTL identified in the INRA PorQTL (MS x LW) experimental design and (2) to seek for additional chromosomal regions influencing production and reproduction traits included in the breeding goal. Firstly, two groups of 30 individuals, representing the line at its foundation and after two generations of selection, were genotyped using the pig 60K SNP chip to identify regions of the genome that have been affected by selection or drift. In a second step, a set of 384 SNPs tagging these candidate regions was established to test associations between markers and performances of 480 animals born between 2003 and 2006. Each selected animal had a CD (coefficient of determination) greater than 0.25 for a global breeding value combining growth, carcass and reproduction traits). QTLs (Quantitative Trait Loci) were detected in 16 different chromosomal regions. Some of these regions simultaneously affected production and reproduction traits. These results indicated that a marker assisted selection scheme can be proposed for the Duochan selection.