# Genomic-based program to compute inbreeding in the Israeli herd

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Inbreeding is a growing problem in dairy cattle and may negatively affect the animal's health and production levels. The calculation of inbreeding levels based on pedigree is probabilistic. Several works that evaluate the pedigree-based inbreeding levels in different herds found a twofold difference compared to the actual value. This becomes a problem with introducing genomic selection into the breeding program, which shortens the average generation's time and increases inbreeding levels. Genomic information was more effective for calculating inbreeding levels and determining and validating kinship between two individuals. This calculation is not based on intensive lineage documentation but rather on determining the genotype of both parents. In this work, we aimed to develop the computational infrastructure for determining mating compatibility between individuals based on genomic information in order to predict better and control inbreeding levels in the Israeli herd.