Genetic heritage of the Eastern Belgium Red and White breed, an endangered local breed
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Post-second world war, Belgian cattle were still bred in racial zones. There were two types of dual purpose red and white cattle, one in the Kempen Region and one in the East Cantons. At the beginning of the ‘70s, the provincial Herdbooks were merged into a single national Red and White (R&W) Herdbook. During the ‘80-'90s, Red Holstein sires started to become popular in order to improve type traits (size and udder shape) and the milk production. Under the holsteinization pressure and in the absence of a commitment of the R&W Herdbook to this breed type, the eastern type was considered extinct in the ‘90s. Nevertheless, several farmers still kept these cattle because they were perfectly adapted to their more extensive, grazing based production system on less productive medium-altitude (Ardenne-Eifel) meadows. In 2014, breeders created a commission to restart the Eastern Belgium Red and White Breed (EBRW). A Public Service of Wallonia project to support conservation and valorization of EBRW breed, involving scientists and stakeholders, was started. Genotypes (BovineSNP50 Beadchip) of 65 EBRW animals were used for comparison with reference SNP data of 12 other breeds through principal component analysis and studies on the genomic based relationship matrix, the genetic structure and the phylogeny based on distance of Nei. Results showed that the EBRW animals are clearly different from Red Holsteins, similar but still distinct, also in their breed standards, from other members (e.g. MRY, Kempen breed) of the red-pied dual purpose breed group in north-western Europe.