

Genomic reconstruction of pedigree records: a key step in the revitalization of the critically endangered Istrian goat



Kasap, A.¹, G. Šubara², E. Šuran², J. Ramljak¹, Špehar, M.²



¹University of Zagreb Faculty of Agriculture, Svetošimunska 25, Zagreb, Croatia (akasap@agr.hr); ²Agency for Rural Development of Istria, Ulica prof. Tugomila Ujčića 1, 52000 Pazin, Croatia; ³Croatian Agency for Agriculture and Food, Svetošimunska 25, 10000 Zagreb, Croatia

AIM OF THE STUDY

To validate and reconstruct the pedigree of the critically endangered Istrian goat using high-throughput genotyping, thereby establishing a reliable framework for the precise estimation of genetic parameters, effective mating schemes, and sustainable breed conservation.



MATERIALS AND METHODS

- **Genotyping:** 214 individuals (~ 60K SNPs)
- **Pedigree Analysis:** *SeekParentsF90* software
- **Filtering Thresholds (Mendelian conflicts):**
 - >1.0% MC to exclude false parents
 - <0.5% MC to assign true parents (pedigree reconstruction)

RESULTS

- **Validation Sample:** 184 parent-offspring pairs tested
- **Discovered Error Rates:**
 - **Paternity error:** 11.3% (6/53)
 - **Maternity error:** 18.3% (24/131)
- **Pedigree Correction:** Successfully identified and assigned 4 misidentified/unrecorded sires and 13 dams



Genomic-based pedigree validation in the Istrian goat population

