

# Genetic diversity of Busha cattle: pedigree analysis

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## Abstract

Busha cattle is one of three Croatian autochthonous cattle breeds and by the population size of 240 heads it is the second Croatian autochthonous breed (CAA, 2010). Reliable herd book records allow planned conducting of breeding with goal of increasing genetic variability and avoiding harmful influence of inbreeding. Since Busha cattle population in Croatia is genetically small ( $N_e = 90,57$ ), there is a large risk of extinction or significant loss of genetic variability. For reliable and successful planned conducting of breeding and implementation of breeding program, it is necessary to make a systematization of breeding based on pedigree records, and planned conducting of breeding (planned mating) organize by bull lines and cow lines. For this reason, systematization of Busha cattle has been carried out (pedigree construction), and the result of systematization is defining 24 bull lines and 134 cow lines. Besides planned conducting of breeding, systematization allows more reliable determination of demographic parameters, genetic variability estimation, but also an efficient application of molecular researches.

Key words: Busha cattle, pedigree, systematization, genetic diversity

sa2012\_a0703

# Genetska raznolikost buše: analiza rodovnika

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## Sažetak

Buša je jedna od tri hrvatske izvorne pasmine goveda i prema veličini populacije sa 240 grla druga je izvornih pasmina goveda (HPA, 2010). Vjerodostojna matična evidencija omogućava plansko vođenje uzgoja u cilju povećanja genetske varijabilnosti i izbjegavanje štetnih utjecaja inbridinga (uzgoja u srodstvu). Kako je populacija Buše u Hrvatskoj genetski mala ( $N_e = 90,57$ ) postoji veliki rizik od njezinog izumiranja ili značajnog gubitka genetske varijabilnosti. Za vjerodostojno i uspješno plansko vođenje uzgoja i provedbe uzgojnog programa, nužno je učiniti sistematizaciju uzgoja temeljem rodovničkih podataka, a plansko vođenje uzgoja (planski pripust) organizirati prema linijama bikova i rodovima krava. Iz tog razloga provedena je sistematizacija uzgoja buše (izgradnja rodovnika), a rezultat sistematizacije je definiranje 24 linije bikova i 134 roda krava. Osim planskog vođenja uzgoja, sistematizacija omogućava vjerodostojnije utvrđivanje demografskih parametara, procjenu genetske varijabilnosti, ali i efikasnu provedbu molekularnih istraživanja.

Ključne riječi: buša, rodovnik, sistematizacija, genetska raznolikost

sa2012\_a0703