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Czech Journal of Animal Science

Genetic gain, increase in inbreeding rate and generation interval in alternatives of Pinzgau breeding program

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Czech J. Anim. Sci., 49 (2004): 524-531

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The aim of this paper was to analyse alternatives of Pinzgau breeding program. Alternatives were optimised for genetic gain of selection index composed of parameters of milk efficiency traits and

increase in inbreeding per generation. A scheme using the mating of 70% old proven sires led to a lower increase in inbreeding per generation from 0.248% to 1.903% than a young sires scheme with 0.313–2.177% or 0.303–2.18% without MOET when 2, 5, 10 and 20 proven sires were used in the population. Schemes using 70% mating of young sires resulted in a shorter generation interval of 3.46 years in comparison with proven sires scheme with 4.06 years. Young sires breeding program yielded lower genetic gain from 420.1 SKK per year when 20 proven sires were used to 578.44 SKK per year when 2 proven bulls were selected in the population. Proven sires breeding program led to higher genetic gain from 400.17 SKK (with 20 proven bulls) to 629.72 SKK (2 proven bulls). In a group with 20 proven bulls young sires breeding program with MOET resulted in genetic gain 466.38 SKK comparable to young sires breeding program without MOET with 10 proven sires. In groups with 10 or 5 proven bulls this alternative led to the highest genetic gain 515.45 SKK and 565.25 SKK, respectively. A group with 2 proven bulls in MOET scheme achieved similar genetic gain

(629.14 SKK) like the proven sires scheme.

Keywords:

Pinzgau breed; gene flow; genetic gain; generation interval; inbreeding; milk

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