Mate selection allows changing the genetic variability of the progeny while optimizing genetic response and controlling inbreeding

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© 2018 This study aims to compare results obtained by mate selection accounting for different components in the objective function (OF), including functions related to genetic variability of the future progeny, using Nile tilapia and coho salmon real datasets. A total of 8782 Nile tilapias (NP) from five generations and 79,144 coho salmon (CS) from eight generations were used to optimize different OF accounting for coancestry of parents, expected genetic merit, inbreeding and components associated to genetic variability of the progeny. The candidates for selection were the superior animals of the last generation, corresponding to 281 males for NP population and 328 males for CS population, to be mated with 179 and 440 superior females, respectively. Candidate males were allowed to be mated with a maximum of four females. Different functions related to genetic variability of the progeny were tested in the mate selection and we observed that it was possible to increase the genetic variab