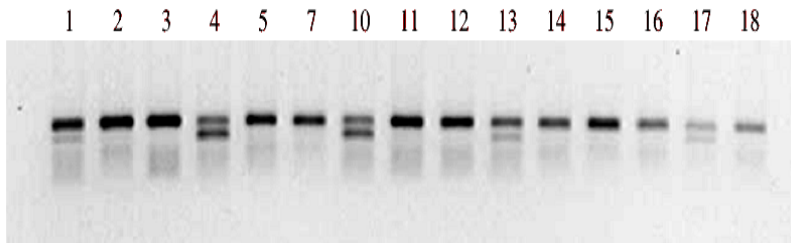


desat2 GENE

Desat2, responsible for the female cuticular hydrocarbon synthesis, plays an important role in mate choice. The idea was that *desat2* polymorphism might affect behavioral peculiarities in flies living on opposite slopes (Zamorzaeva et al., 2009).

DNA bands of *desat2* gene from SFS lines



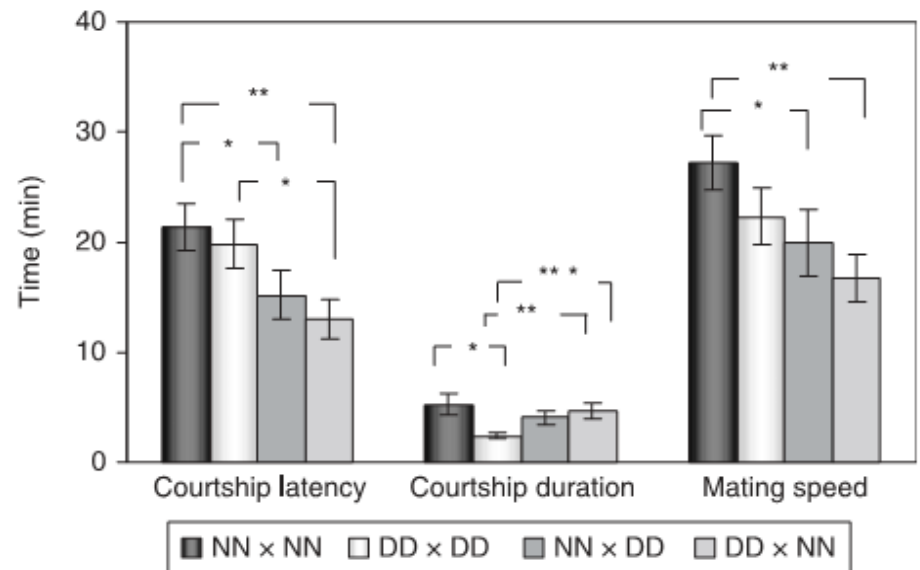
NFS lines were monomorphic for the larger *desat2* band.

Testing the promoter- and exon1-containing part of *desat2* gene revealed size polymorphism of PCR products except and only to the extent of SFS flies.

Based on sequence analysis, we found in smaller bands a deletion specific for SFS flies only. It is located in exon1 of the *desat2* gene and leads to the appearance of stop-codon TGA.

Mating experiments between carriers of various *desat2* alleles estimated the putative effect of *desat2* status on courtship behaviour. The allele with an additional deletion in exon 1 seems to play some role in mating success, which is associated with shorter courtship latency and courtship duration. The appearance and maintenance of this mutant allele in populations inhabiting canyon may reflect flies' adaptation to peculiar microscale climatic conditions and may be associated with incipient sympatric differentiation.

Courtship latency, courtship duration and mating speed



N - allele without deletion in exon 1; D - allele with the deletion in exon 1.