

Project Plan

- Which locus affects the mandibular horn length within males?
- Identify the locus causing the intersexual conflict in selection between male and female.

Tentative Project Design

1. Develop selection lines by
 - A. Direct selection for long or short horn size
 - B. Eliminate sexual antagonism (no-SA) by eliminating fecundity selection
 - a. Breeding happens in mass culture, but all females contribute equal offspring to subsequent generation
 - b. Expect horn size to increase due to sexual selection on males
2. Assemble the genome and map trait loci using combination GWAS / linkage mapping.
 - A. Generate recombinant lines by crossing high and low selection lines
 - B. Sequence whole genomes of selection lines to phase SNPs in recombinants
 - C. Use linkage info from recombinants to scaffold assembly and map SNP associations with horn size
3. Compare loci from no-SA regime to those mapped by direct selection