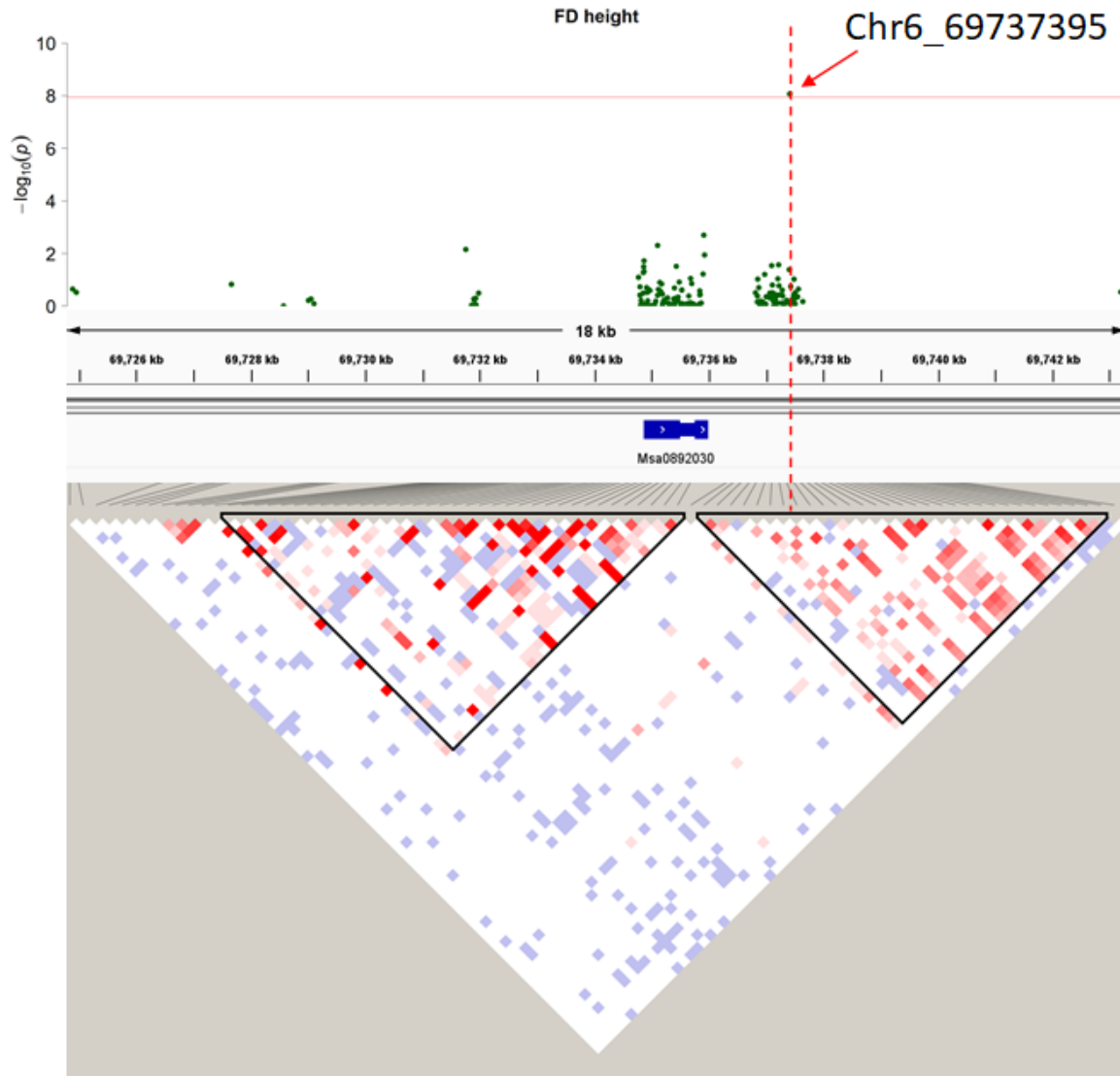
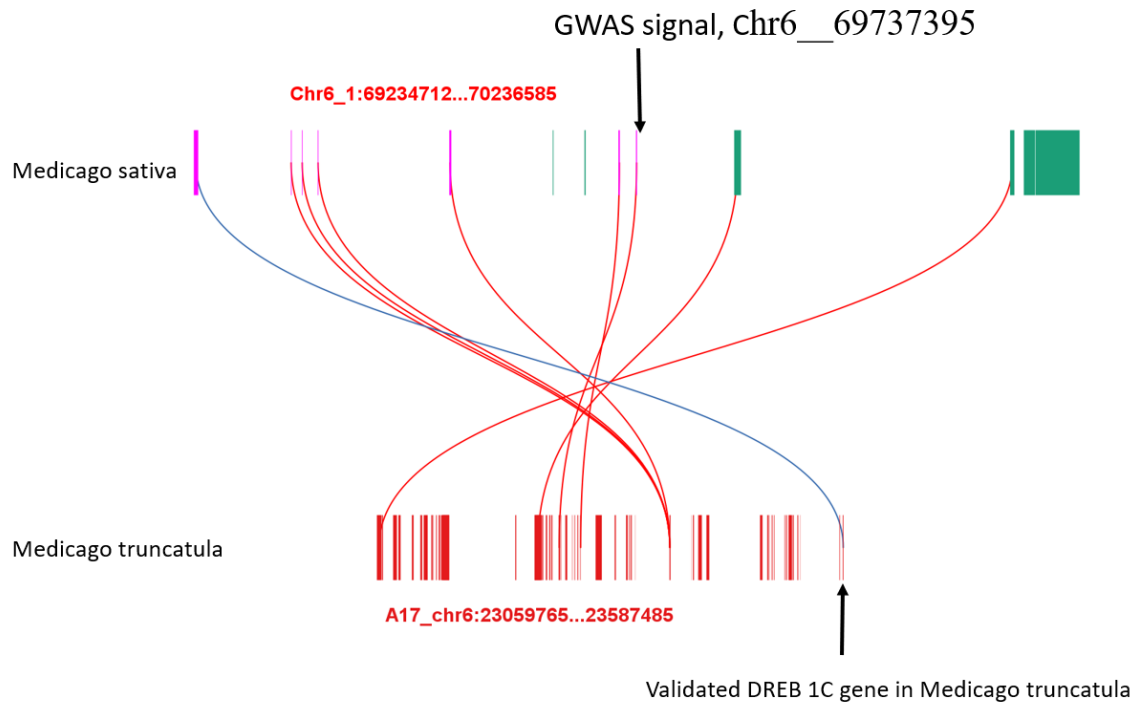




Supplemental Figure 1. The GWAS results combined with gene information and LD information in the 36 kb interval. The Manhattan plot (top) shows the GWAS results in the 18 kb interval (chr6:69724759-69743282) belonging to the 36 kb interval SNP. Below this plot is shown the gene distribution and location in this interval. The bottom plot shows the linkage distribution results for the SNP markers in this interval. Different colors represent different LD values. The red color means a high LD value. The black triangles represent potential LD blocks.



Supplemental Figure 2. The collinearity of DREB genes in alfalfa and *M. truncatula* genomes. Alignment of *Medicago sativa* with *Medicago truncatula* genomes in the DREB genes region. The region 500 kb up- and downstream of the GWAS signal including 7 DREB genes is shown. The pink vertical lines represent 7 DREB genes. The green color represents other genes in this interval. The red vertical lines at the bottom of the figure are the genes of *Medicago truncatula*. The curved lines connecting *Medicago sativa* and *Medicago truncatula* indicate corresponding homologous genes. The alfalfa homologous DREB1C gene validated in *Medicago truncatula* is highlighted with the blue curve. The figure was generated using the TBtools software.

Supplemental Table 1. The physical position of 9 DREB genes on chromosome 6.

Gene Name	Chr	Start_pos	Stop_pos	Gene Annotation
Msa0891950	chr6	69234712	69239739	DREB1C
Msa0891960	chr6	69344692	69345384	DREB1C
Msa0891970	chr6	69357058	69357738	DREB1C
Msa0891980	chr6	69374816	69375502	DREB1C
Msa0891990	chr6	69523664	69525980	DREB1C
Msa0892020	chr6	69715010	69716598	DREB1C
Msa0892030	chr6	69734863	69735980	DREB1C
Msa0893350	chr6	76949157	76950761	DREB1C
Msa0893360	chr6	76953910	76957350	DREB1C