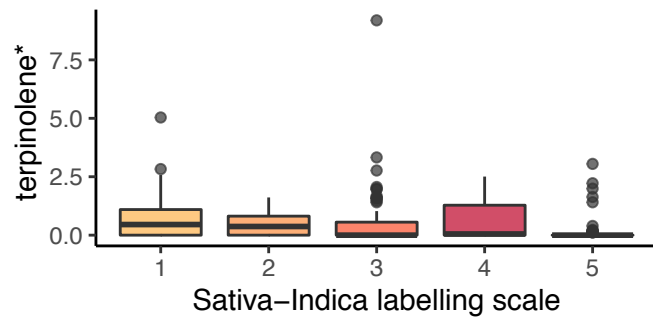
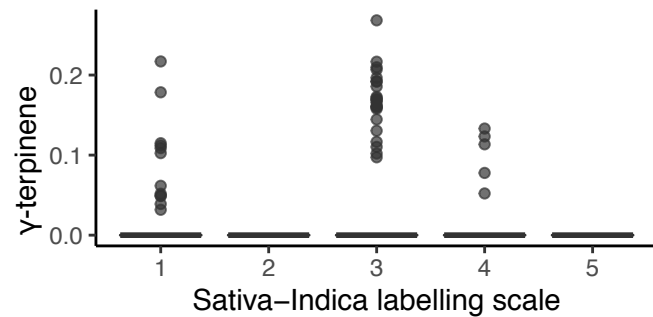
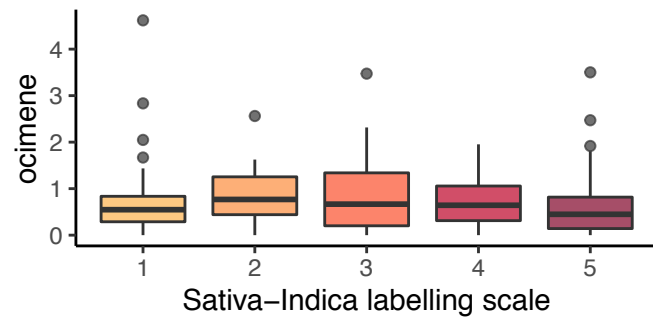
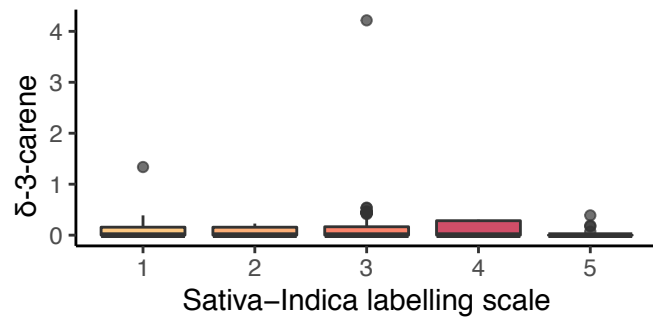
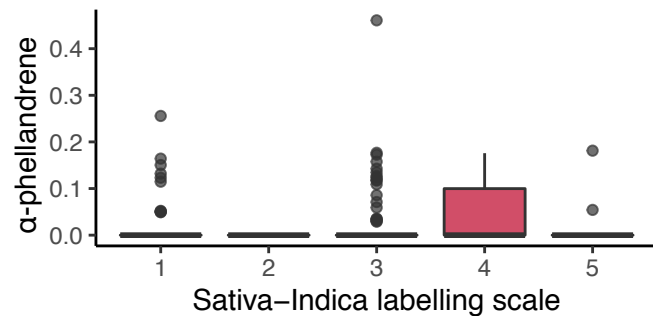
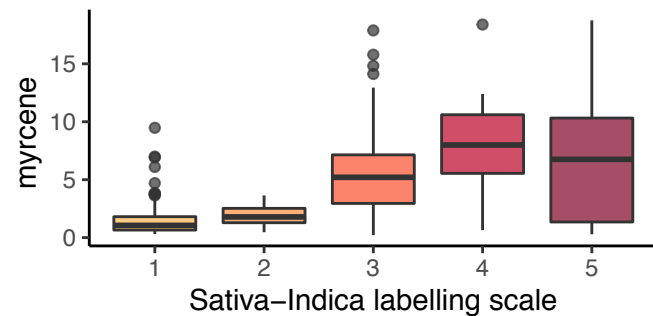
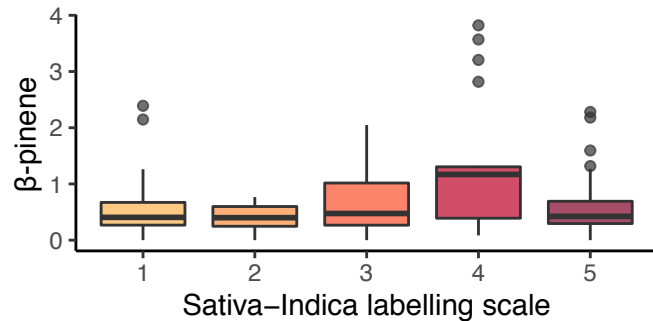
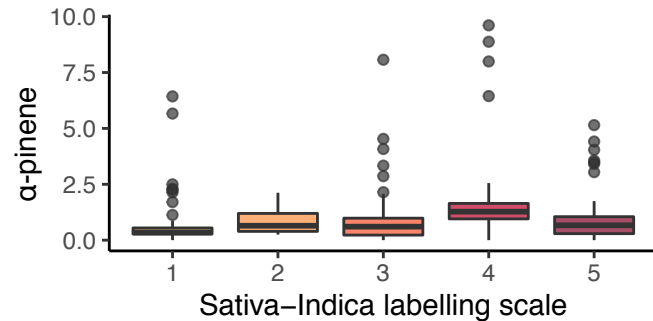
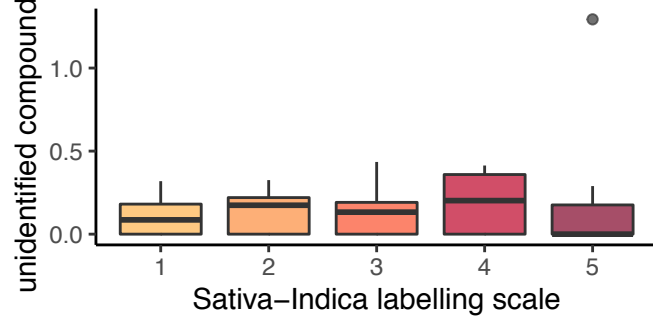
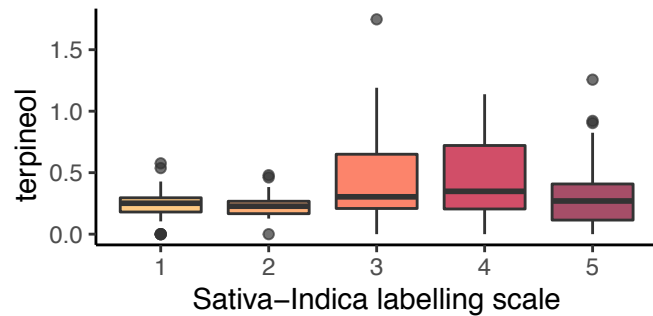
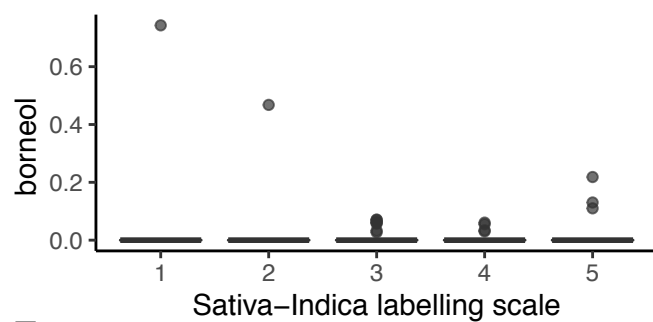
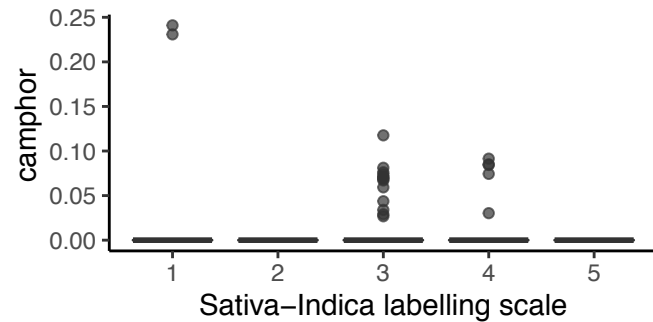
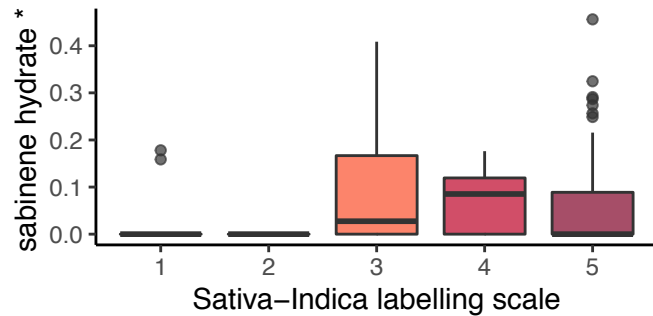
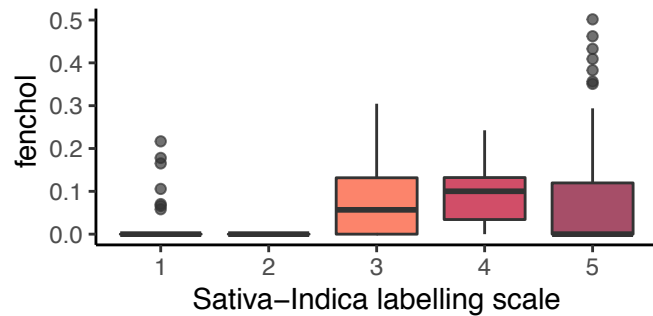
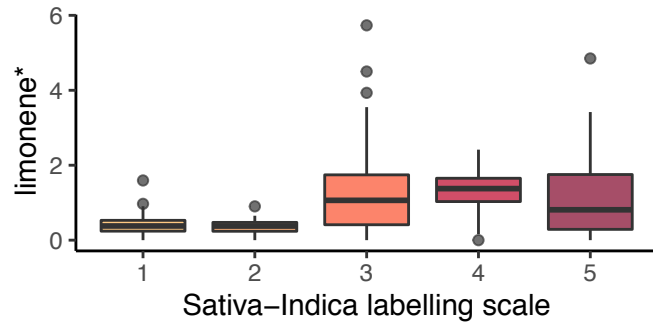
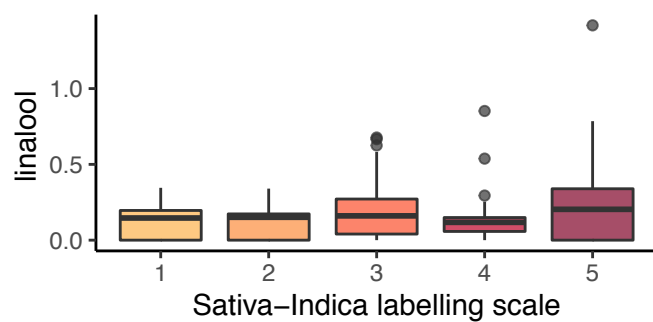

Supplementary information

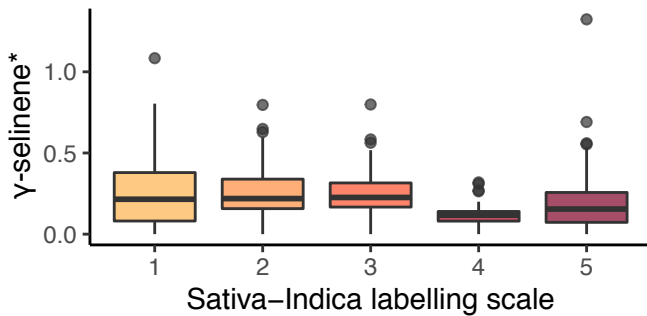
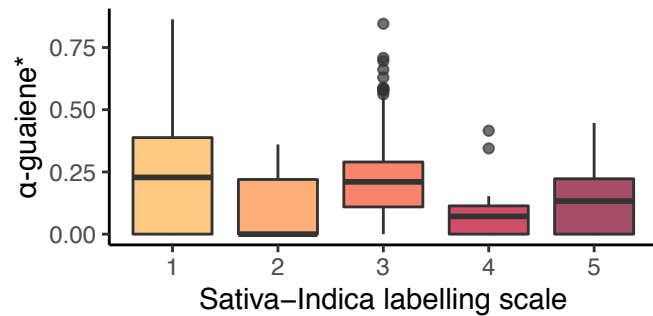
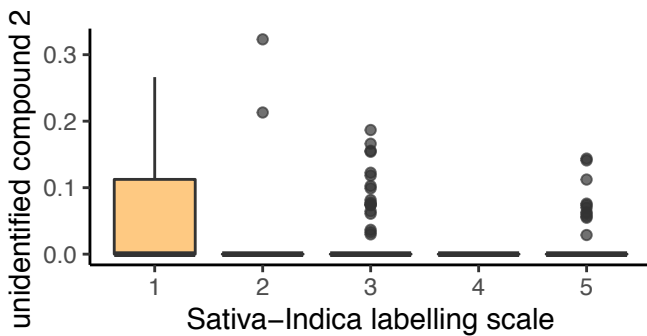
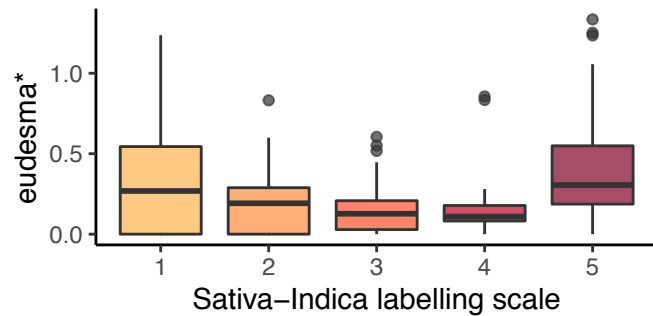
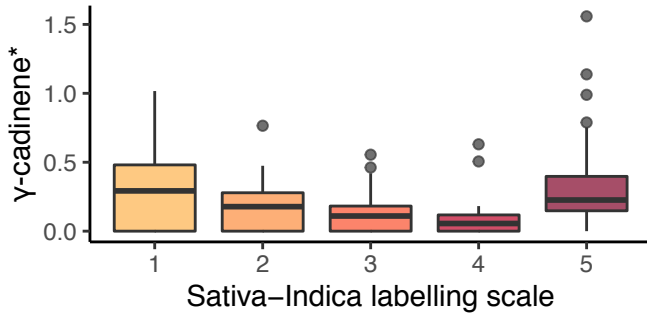
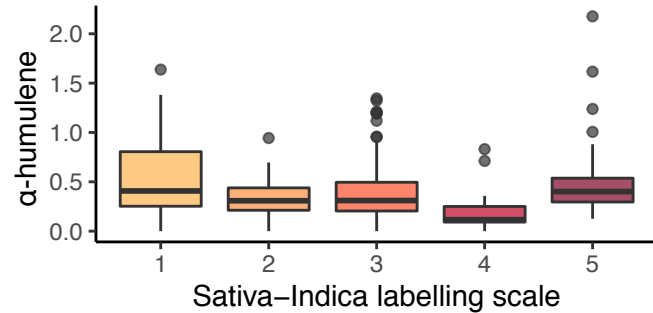
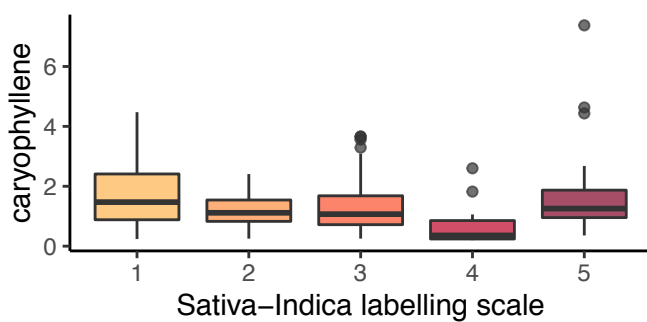
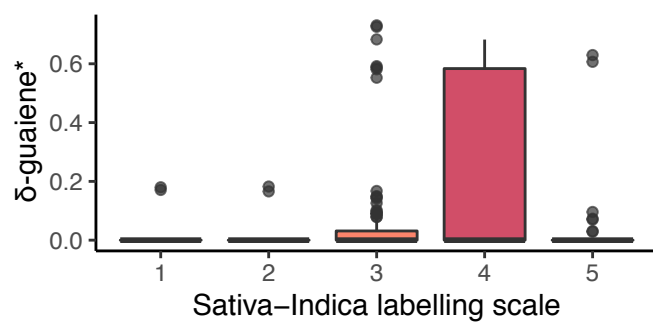
***Cannabis* labelling is associated with genetic variation in terpene synthase genes**

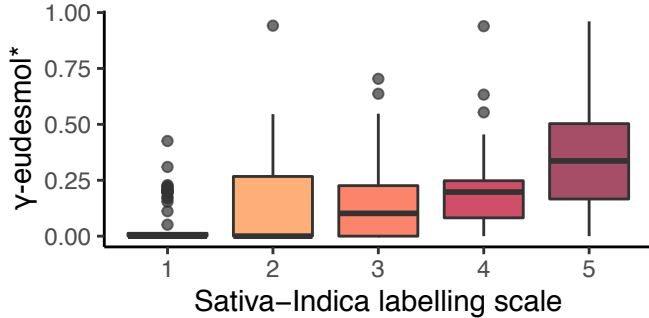
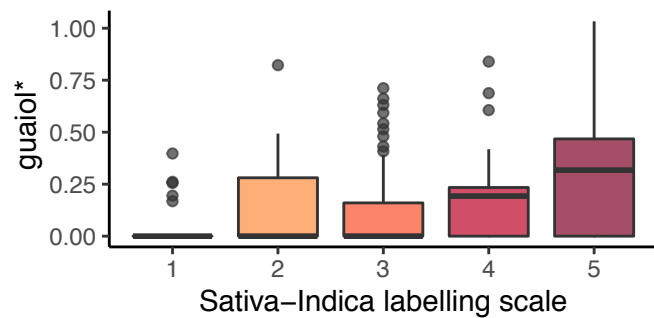
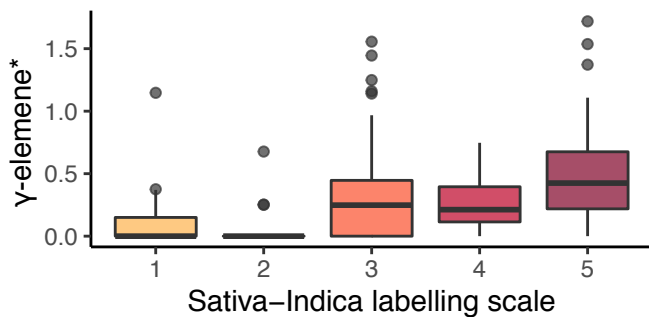
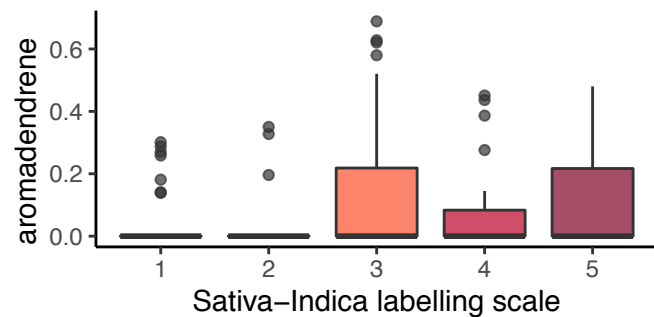
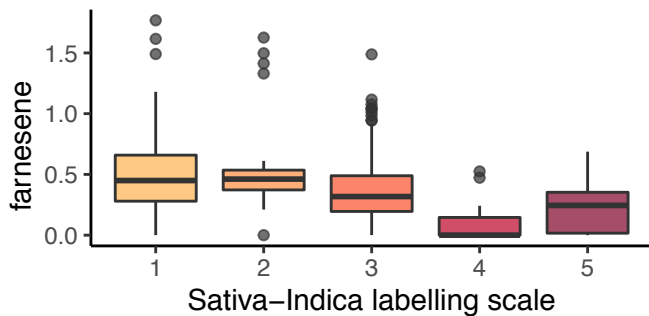
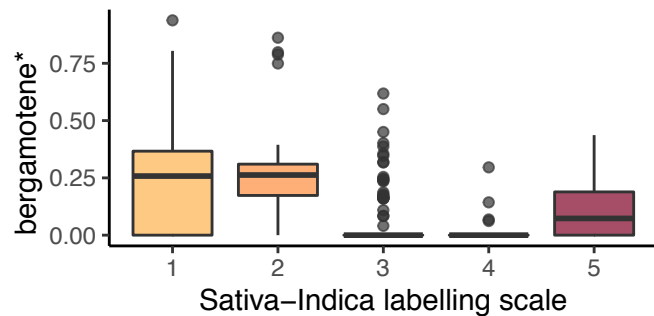
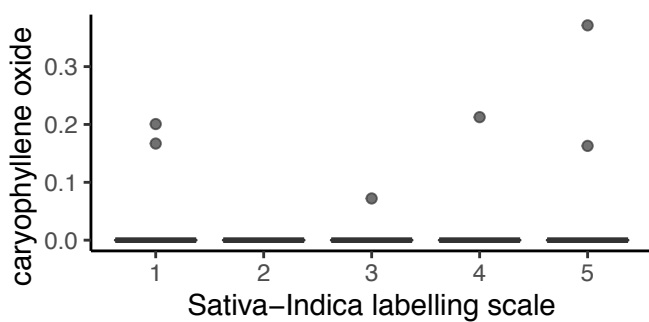
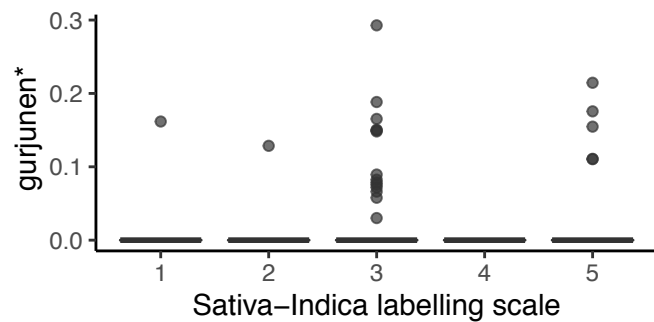
In the format provided by the authors and unedited

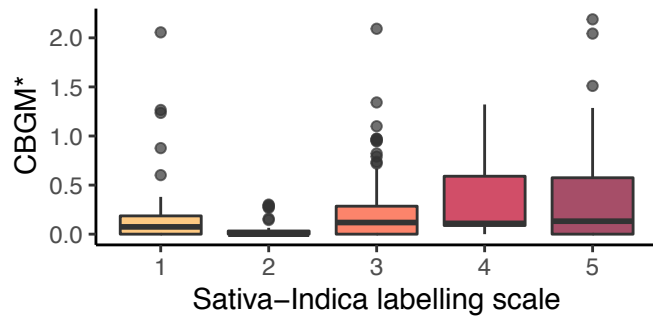
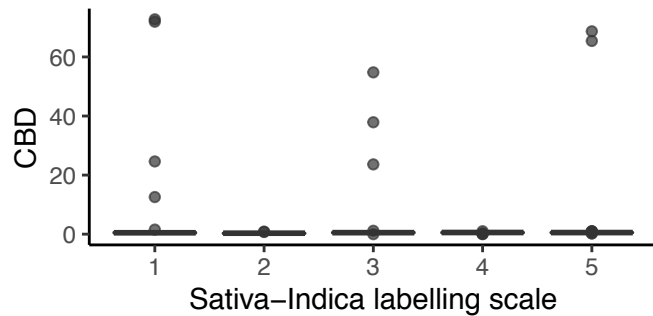
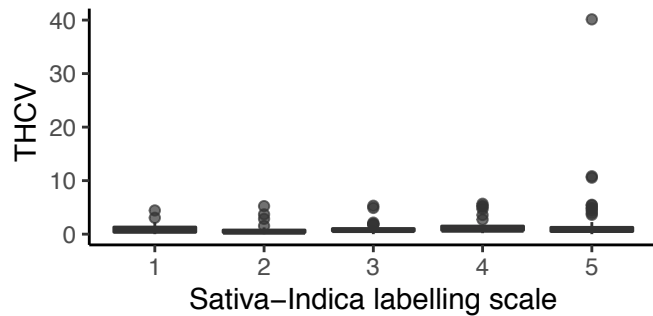
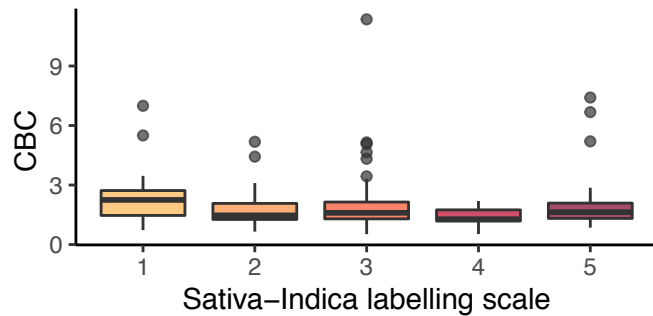
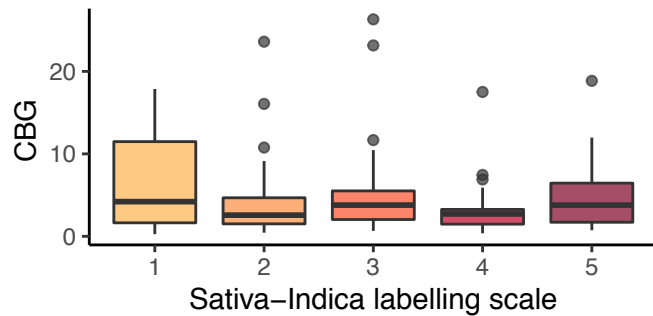
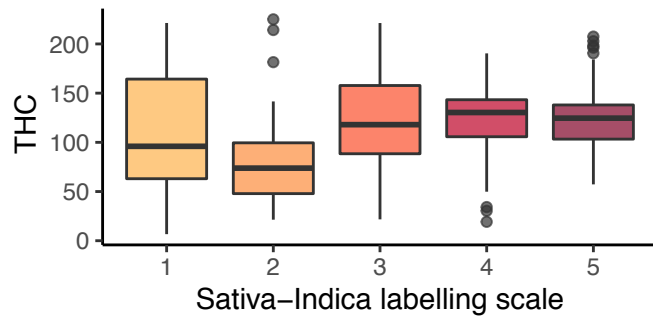
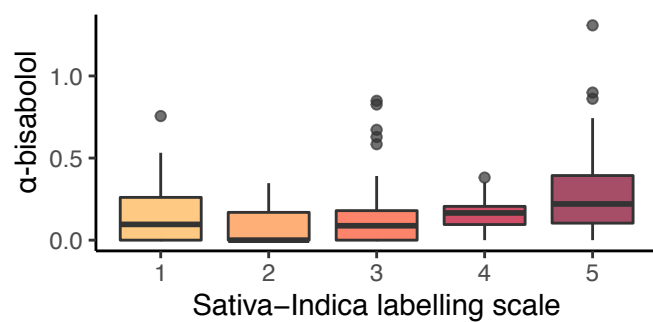
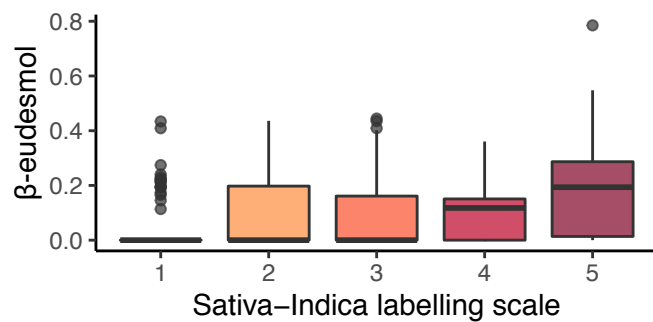
Supplemental Figure 1: Boxplots of chemical concentrations across the Sativa-Indica scale, n= 68 'Sativa', n= 27 'Sativa-Hybrid', n= 115 'Hybrid', n= 25 'Indica-Hybrid' and n= 62 'Indica' samples. The lower and upper bounds of the boxplots correspond to the 25% and 75% quantiles, the minima and maxima of whiskers extend to the lowest and largest value, respectively, within 1.5 times the inter-quartile range, and the centre of the boxes represent the median value. Outliers beyond the whiskers are plotted individually. Y-axis is expressed as milligrams per gram. Asterisks denote chemicals with tentative identifications.

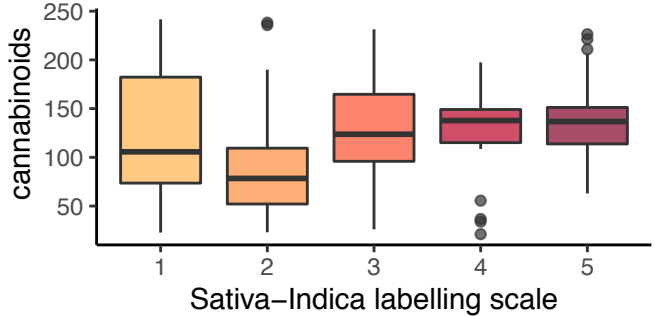
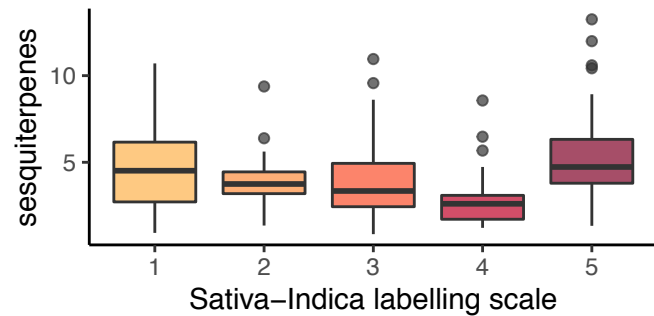
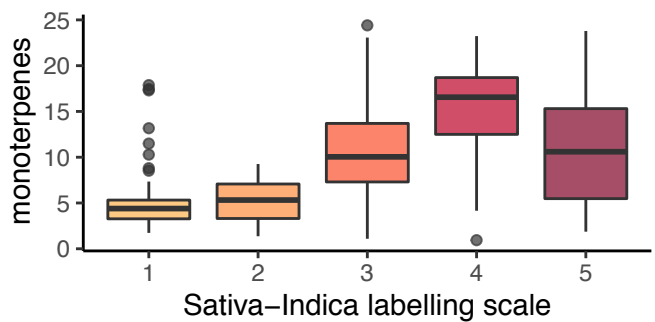
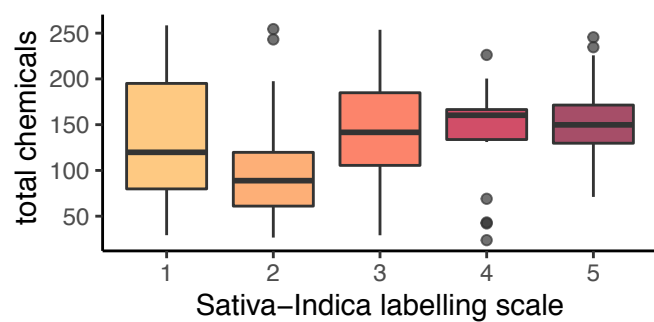






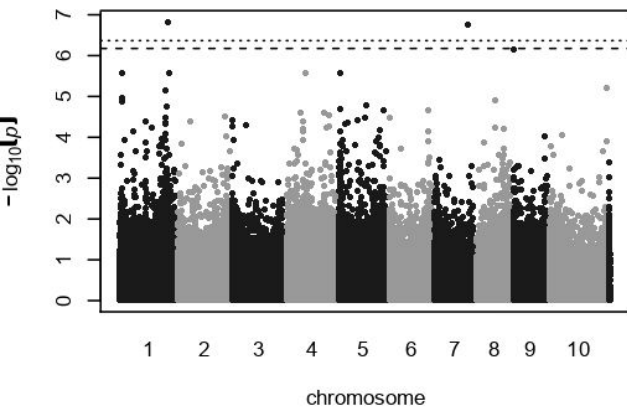




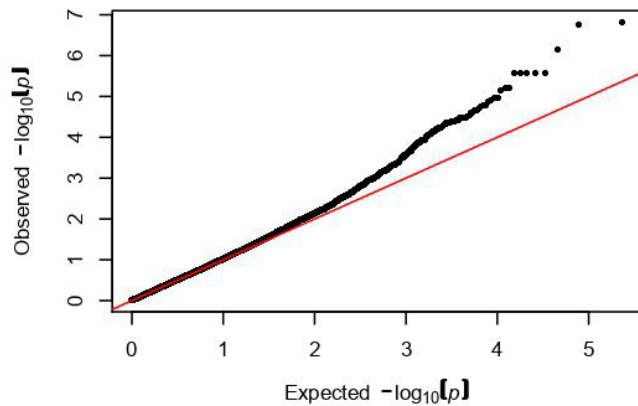


Supplemental Figure 2: Manhattan plots from the standard mixed linear model (MLM) and the multi-locus mixed-linear model (MLMM) GWAS and QQ plots from the standard MLM GWAS. Asterisks denote chemicals with tentative identifications.

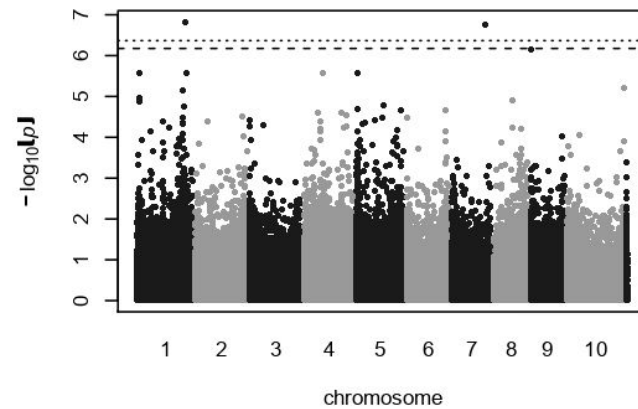
alpha-pinene norm (standard MLM)



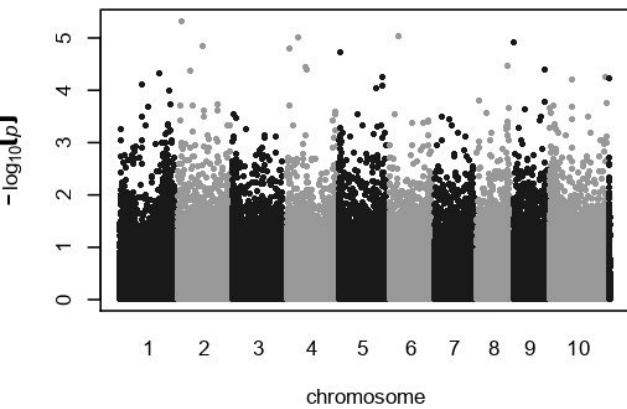
alpha-pinene norm QQ plot (standard MLM)



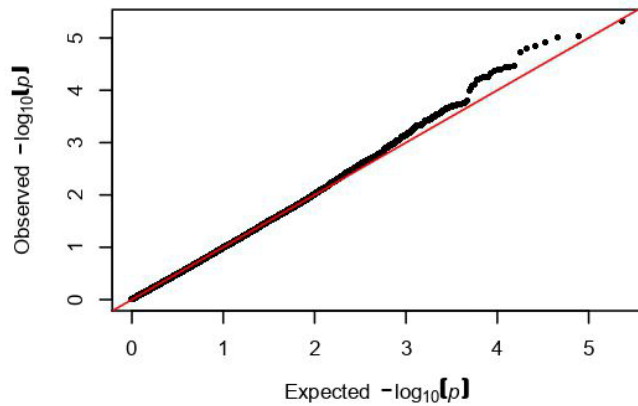
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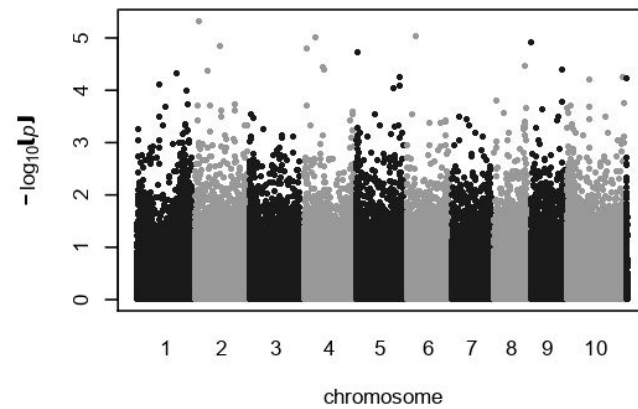
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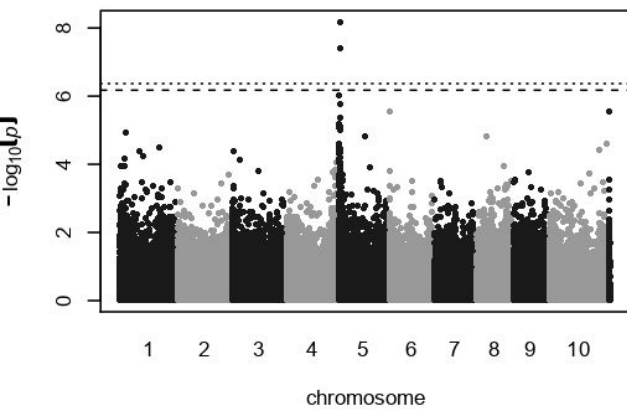
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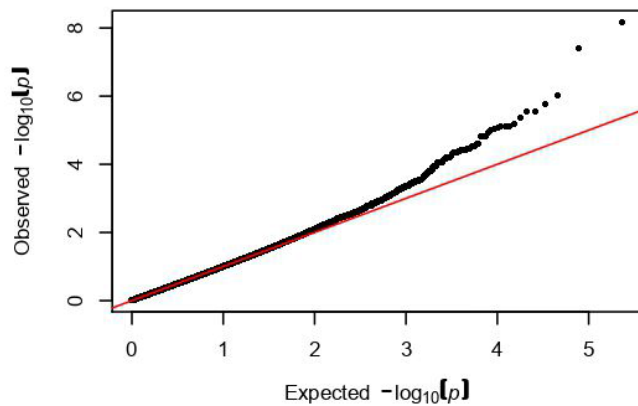
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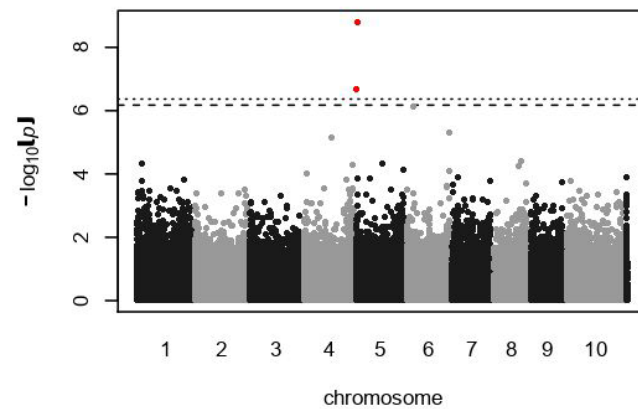
myrcene norm (standard MLM)



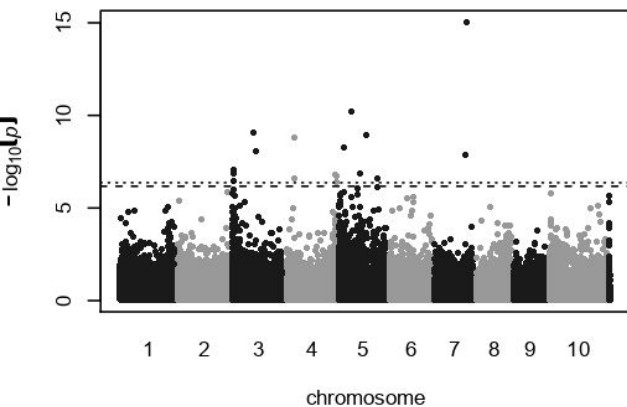
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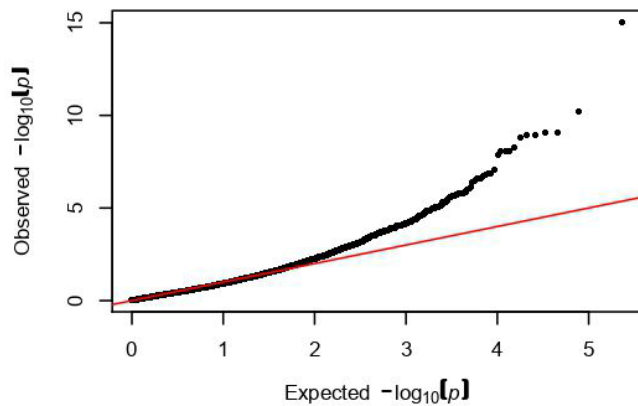
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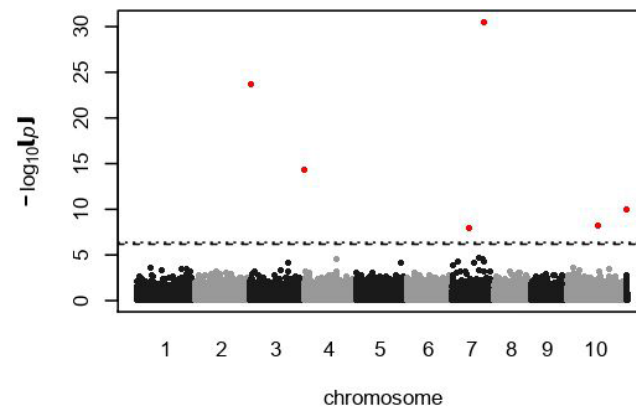
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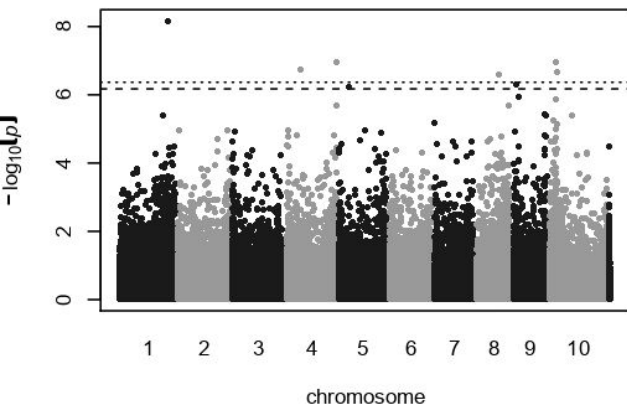
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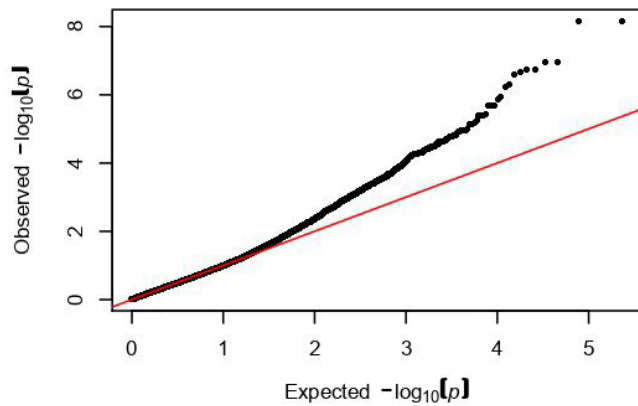
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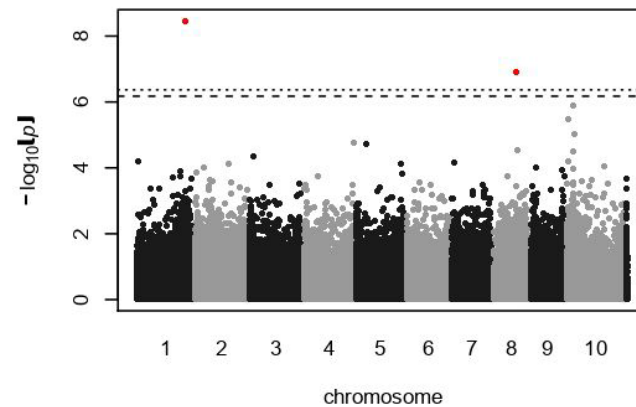
delta-3-carene norm (standard MLM)



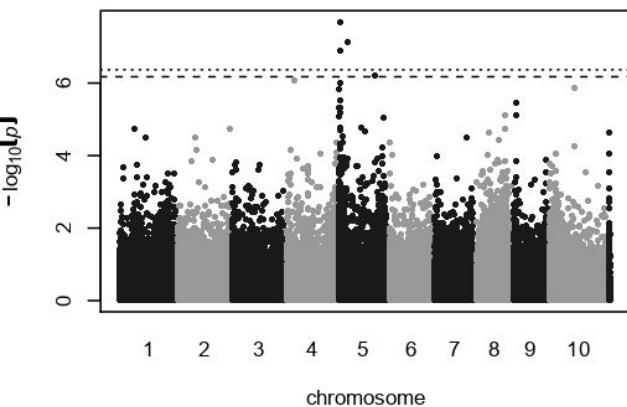
delta-3-carene norm QQ plot (standard MLM)



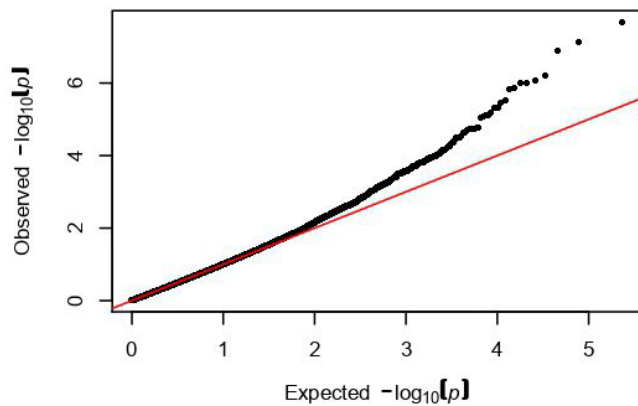
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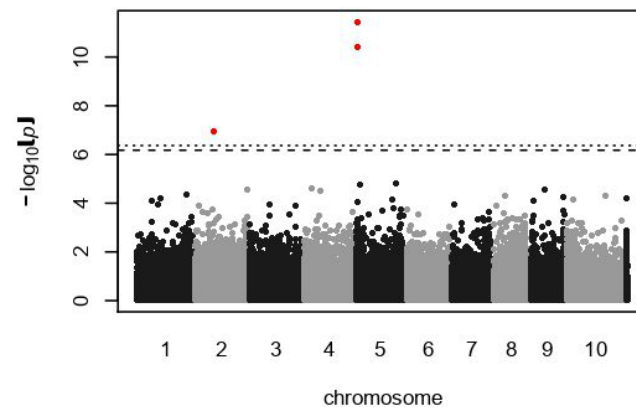
ocimene norm (standard MLM)

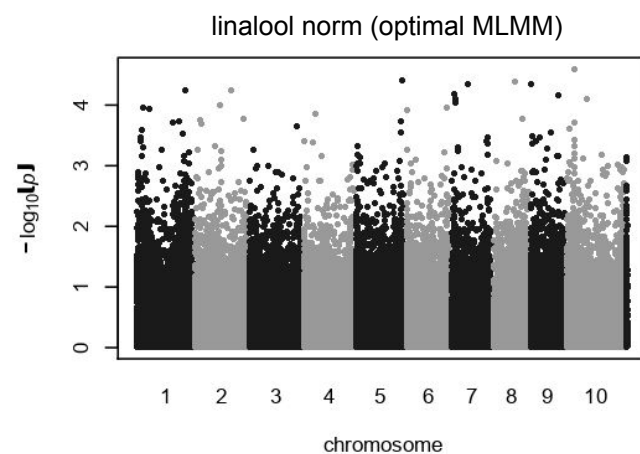
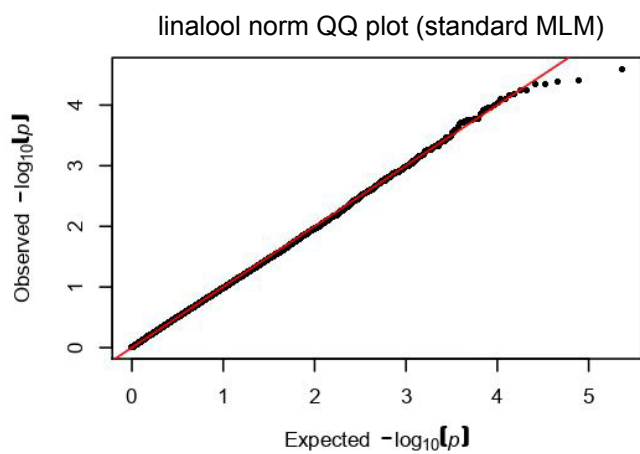
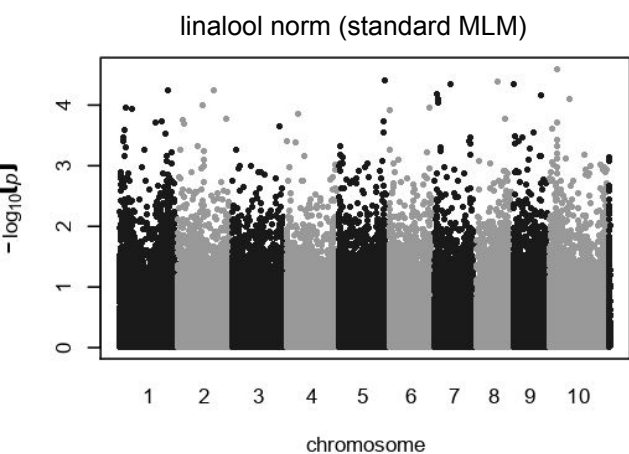
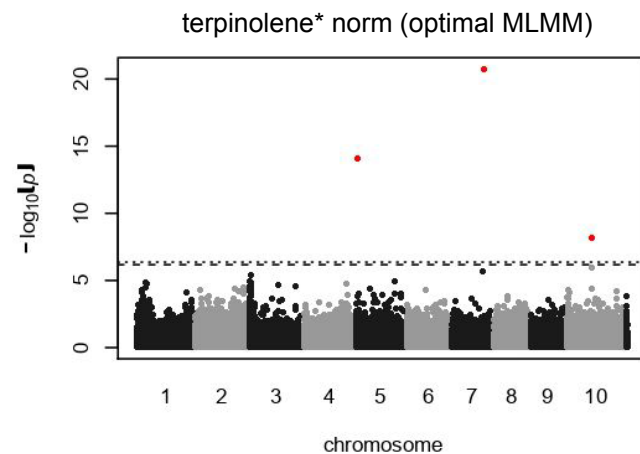
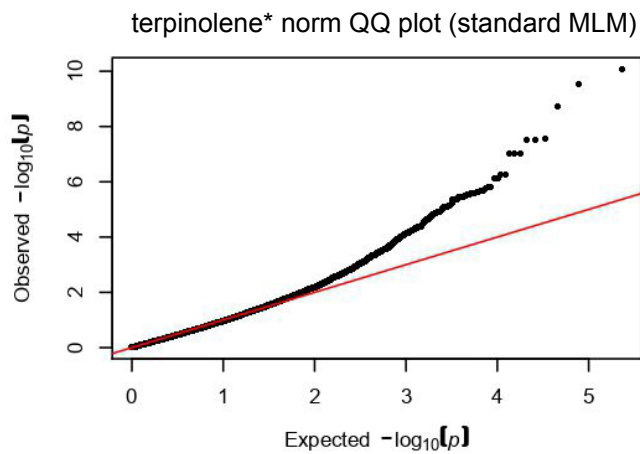
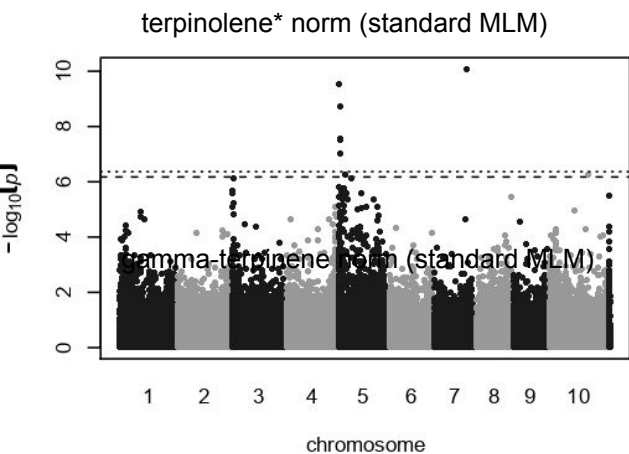
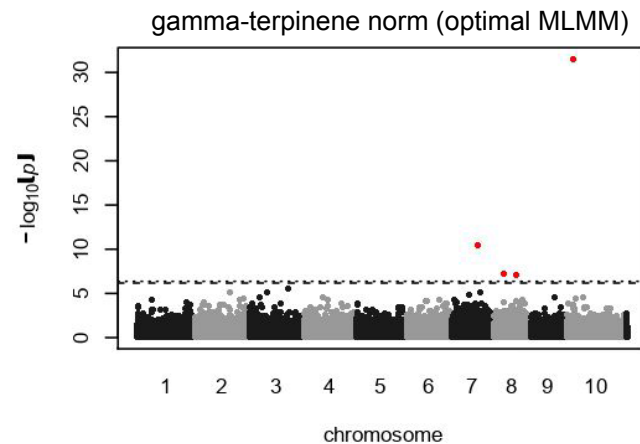
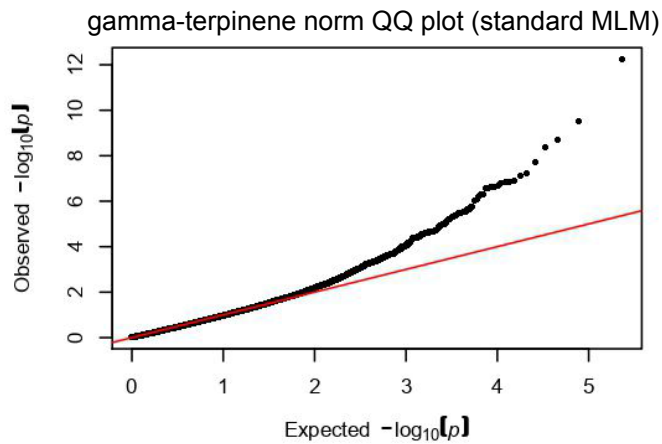
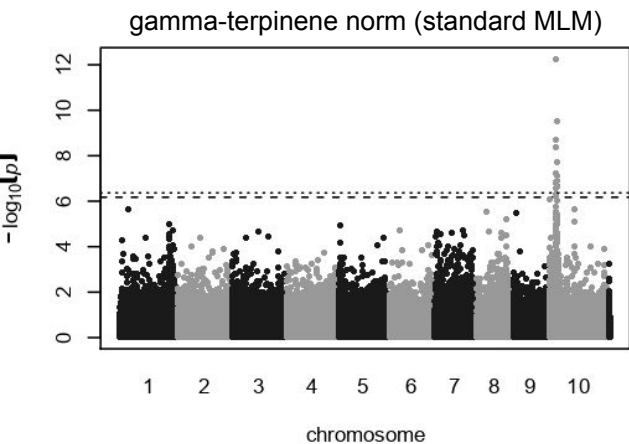


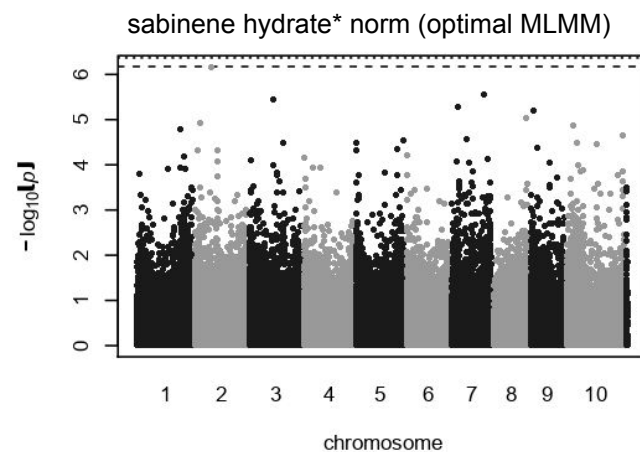
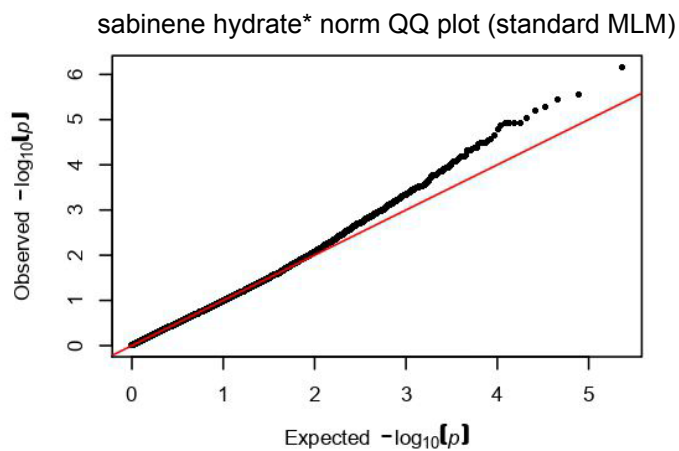
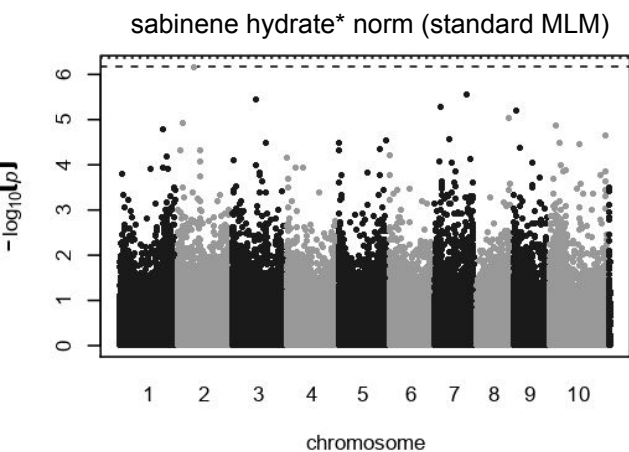
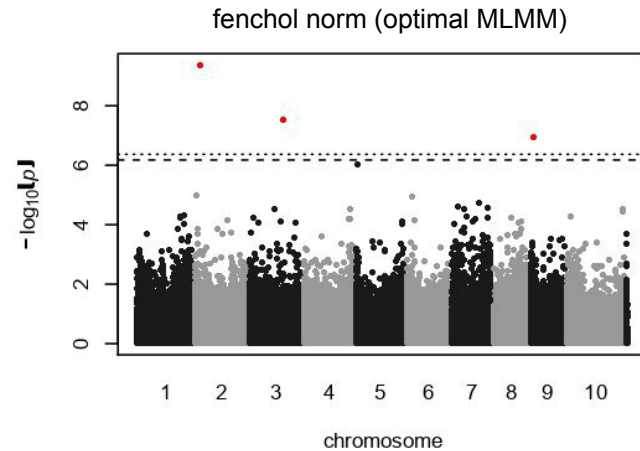
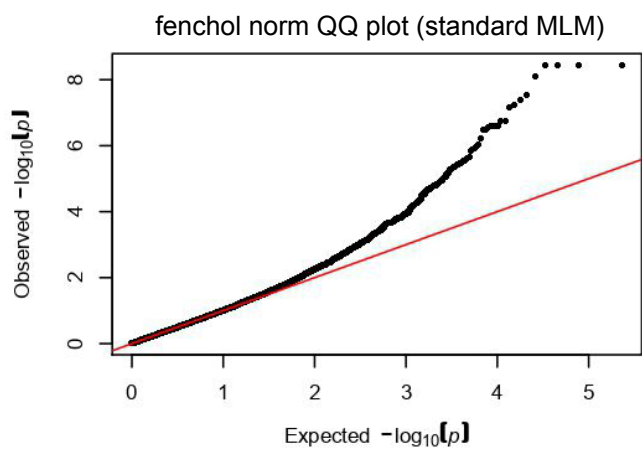
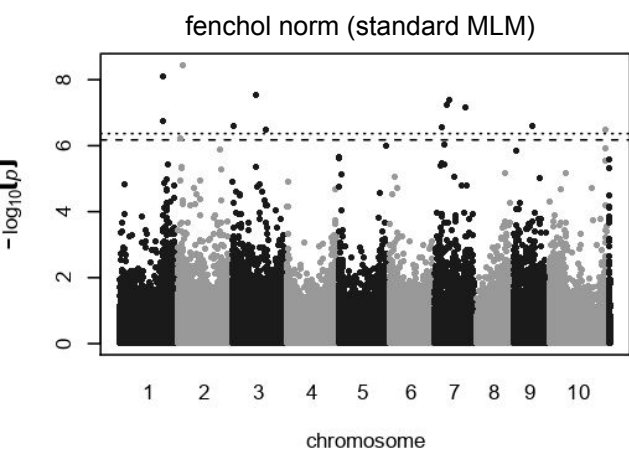
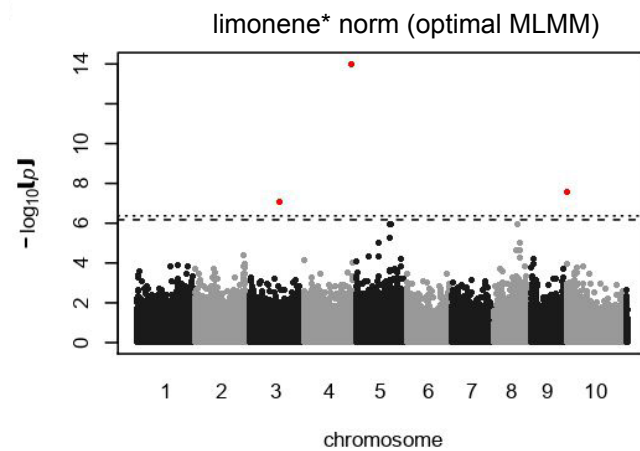
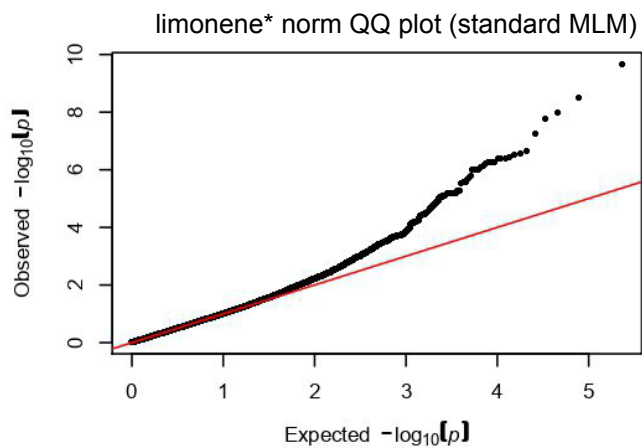
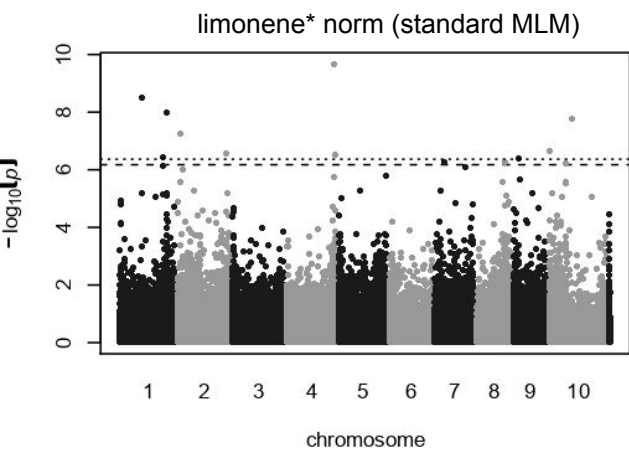
ocimene norm QQ plot (standard MLM)



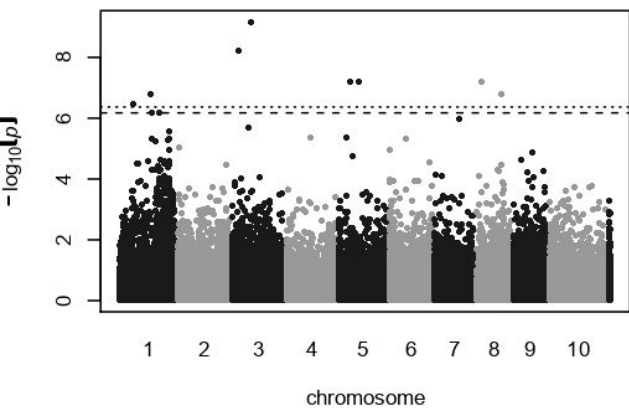
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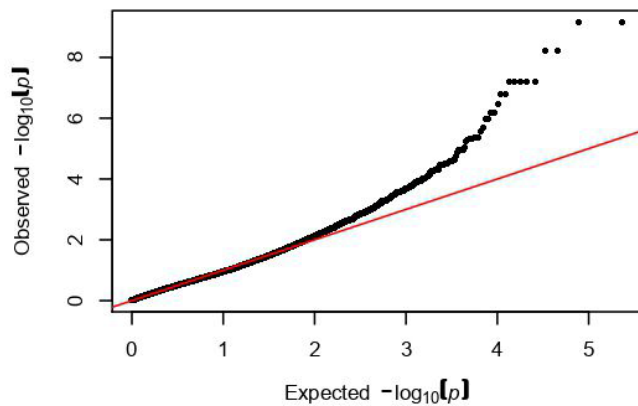




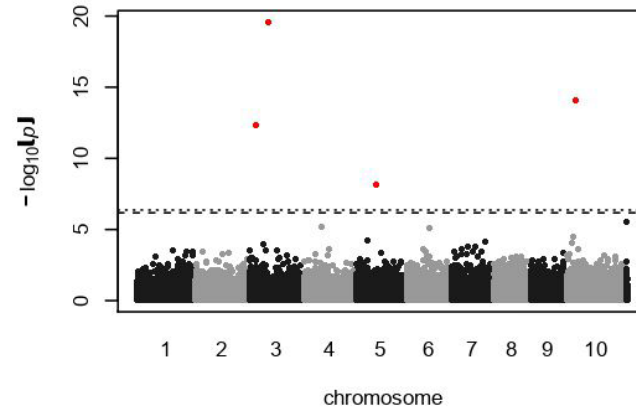
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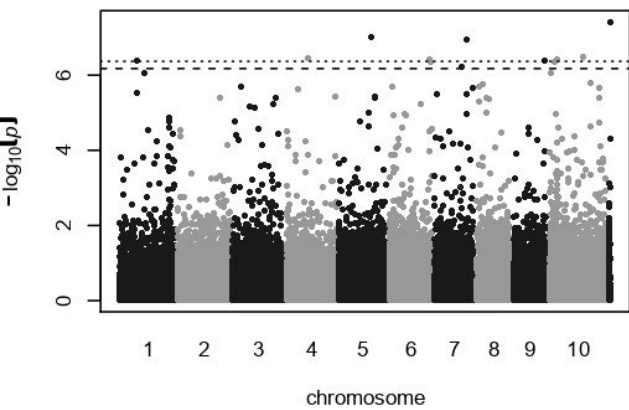
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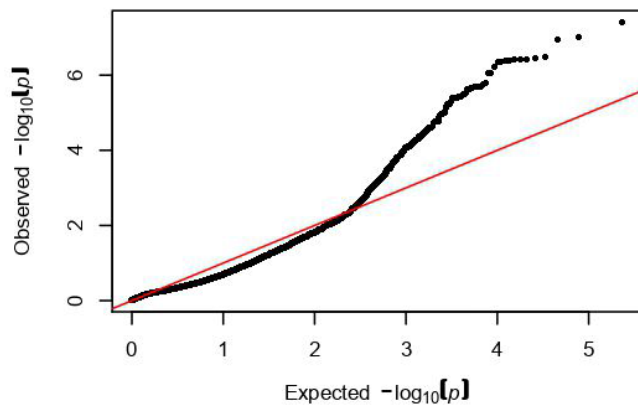
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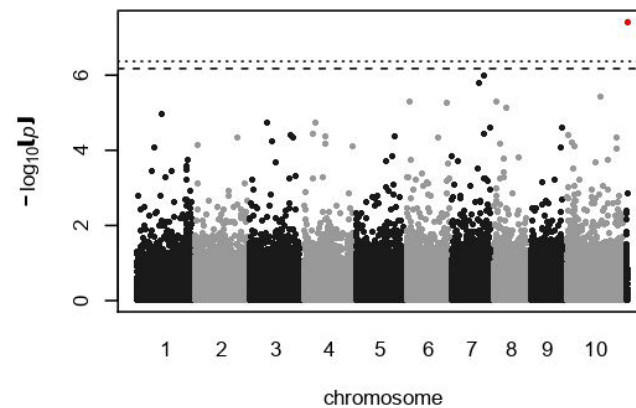
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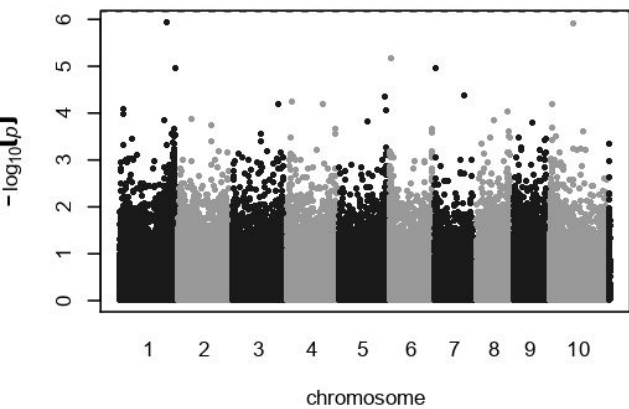
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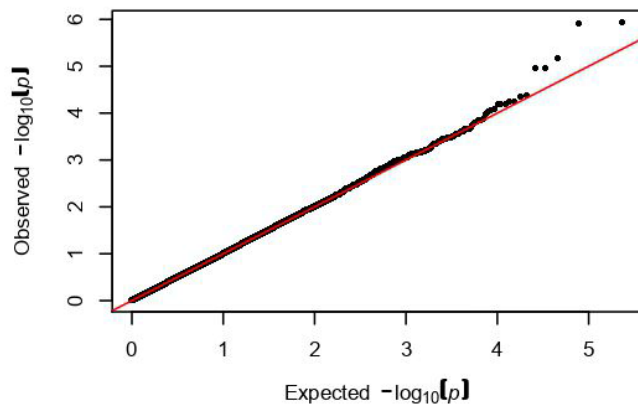
borneol norm (optimal MLMM)



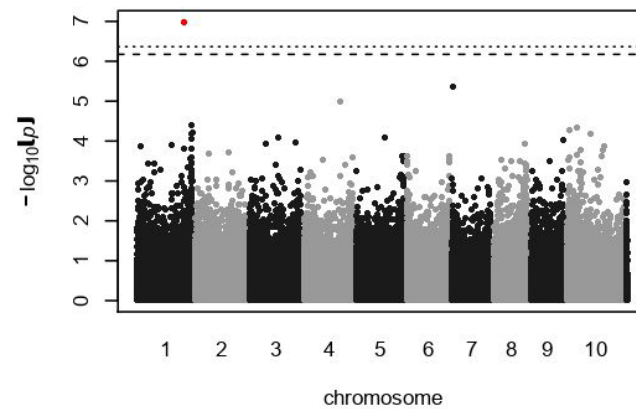
terpineol norm (standard MLM)



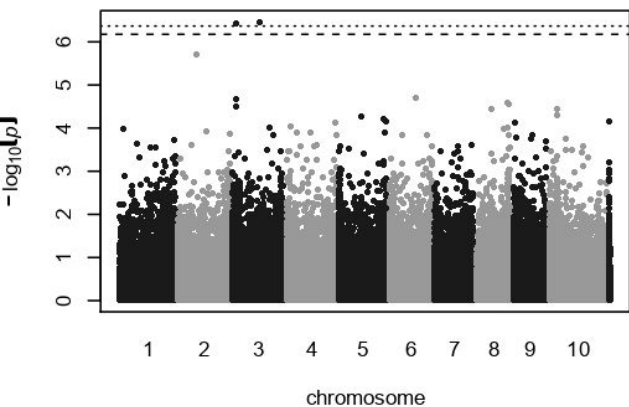
terpineol norm QQ plot (standard MLM)



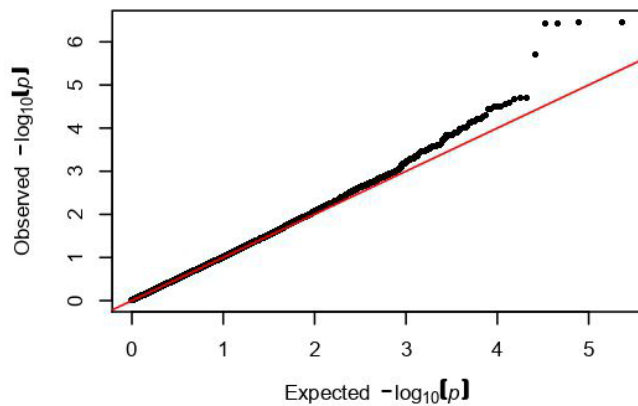
terpineol norm (optimal MLMM)



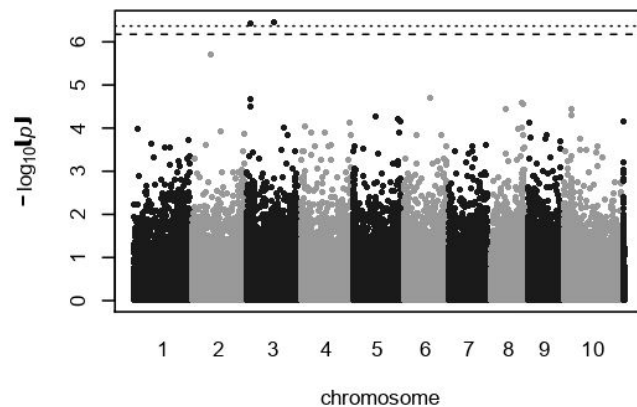
unidentified compound 1 norm (standard MLM)



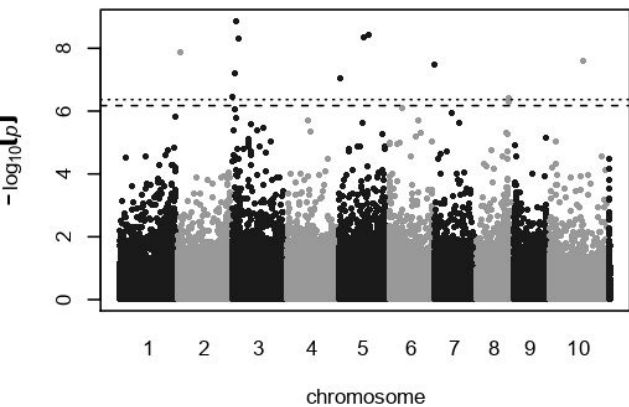
unidentified compound 1 norm QQ plot (standard MLM)



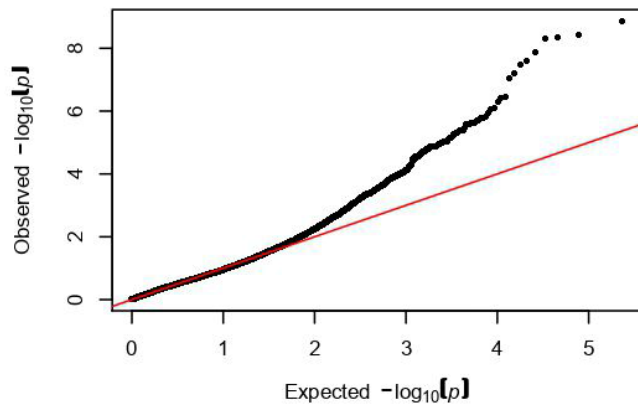
unidentified compound 1 norm (optimal MLMM)



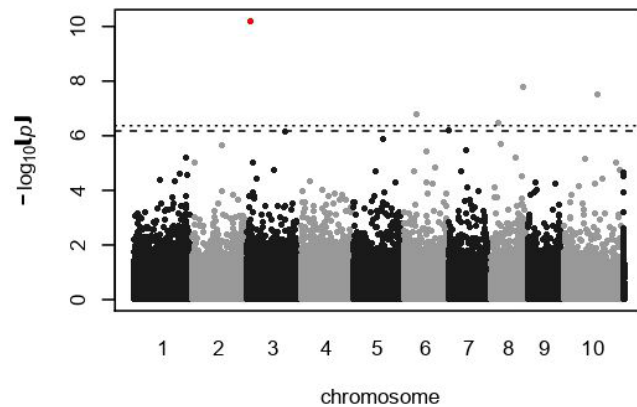
delta-guaiene* norm (standard MLM)



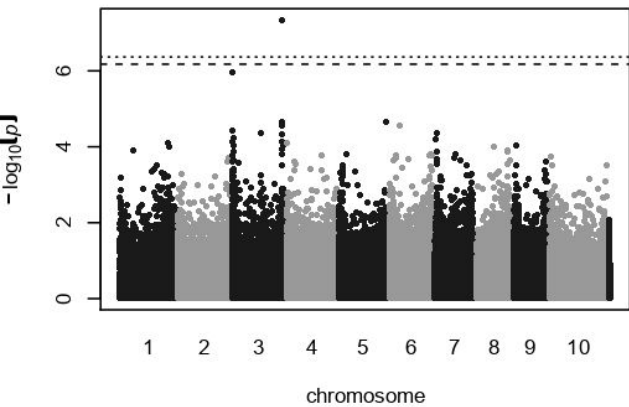
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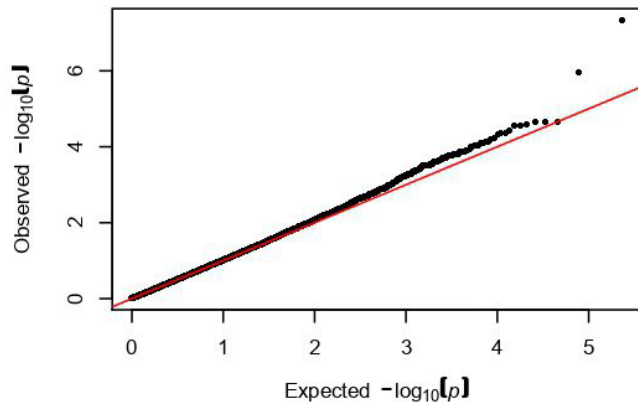
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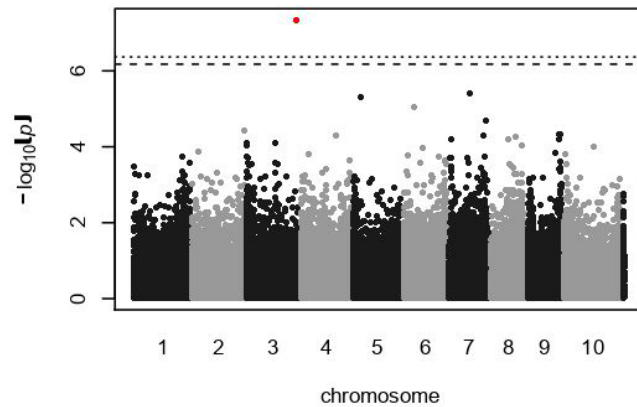
caryophyllene norm (standard MLM)



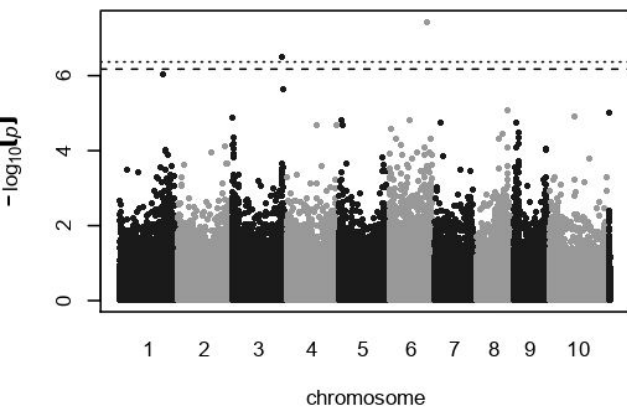
caryophyllene norm QQ plot (standard MLM)



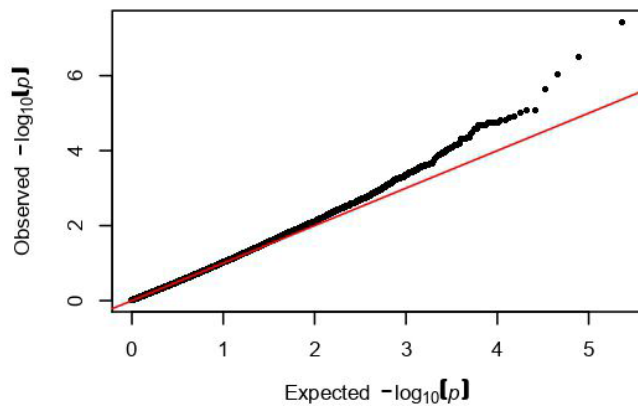
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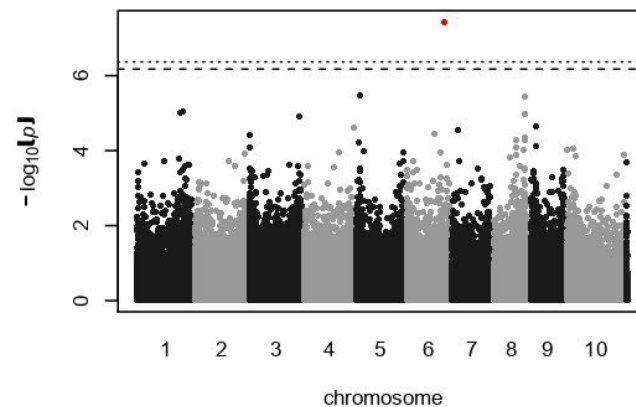
alpha-humulene norm (standard MLM)



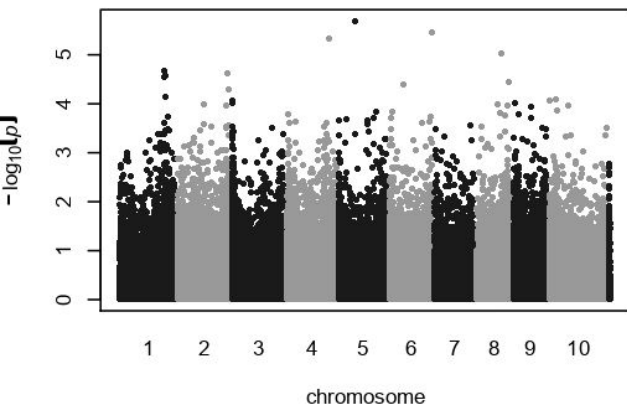
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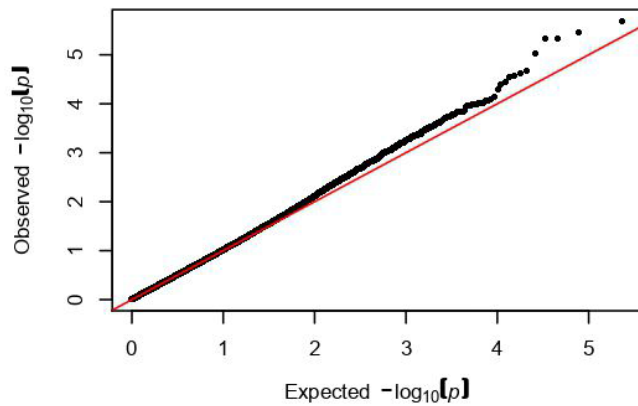
alpha-humulene norm (optimal MLMM)



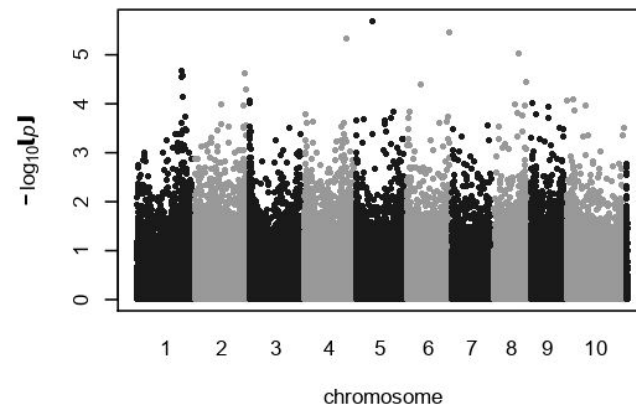
gamma-cadinene* norm (standard MLM)



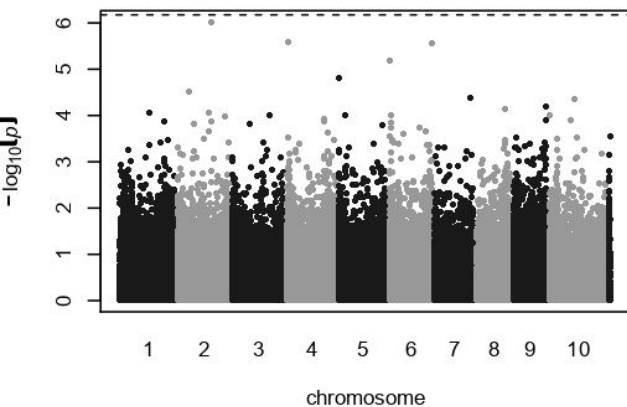
gamma-cadinene* norm QQ plot (standard MLM)



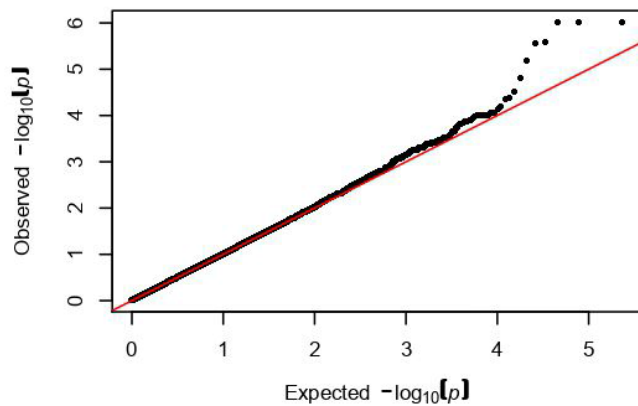
gamma-cadinene* norm (optimal MLMM)



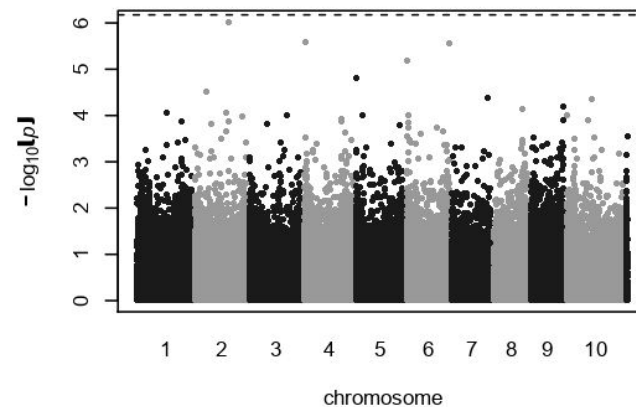
eudesma* norm (standard MLM)



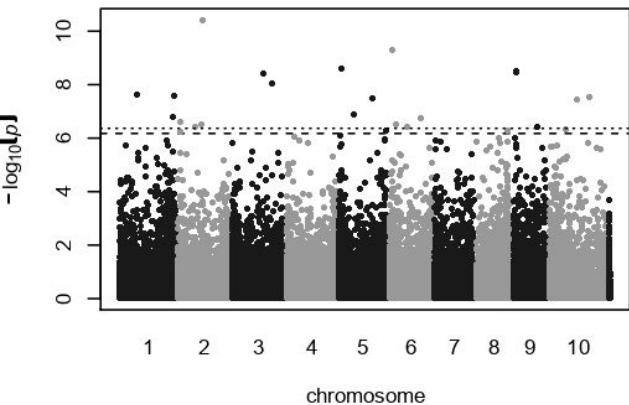
eudesma* norm QQ plot (standard MLM)



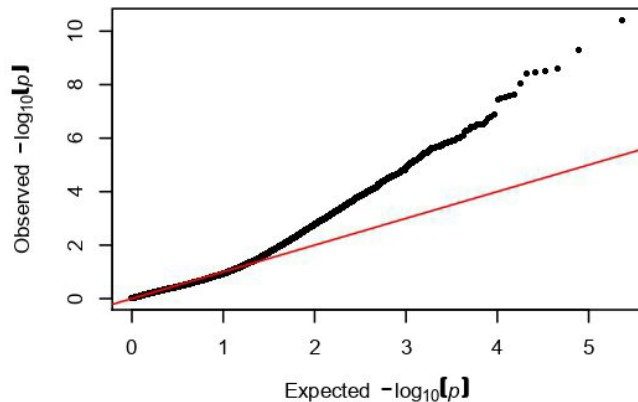
eudesma* norm (optimal MLMM)



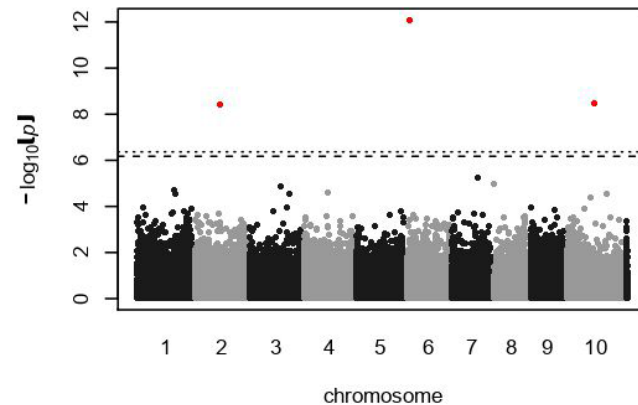
unidentified compound 2 norm (standard MLM)



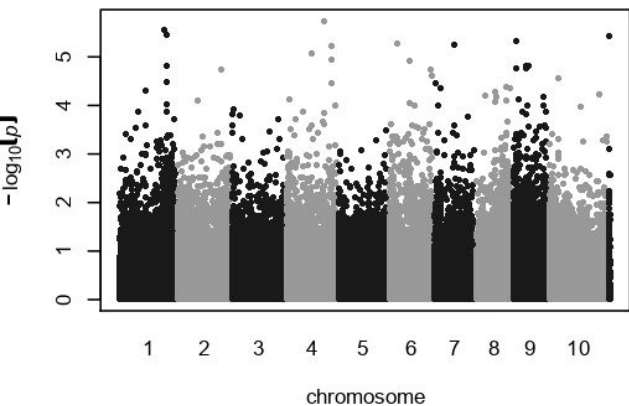
unidentified compound 2 norm QQ plot (standard MLM)



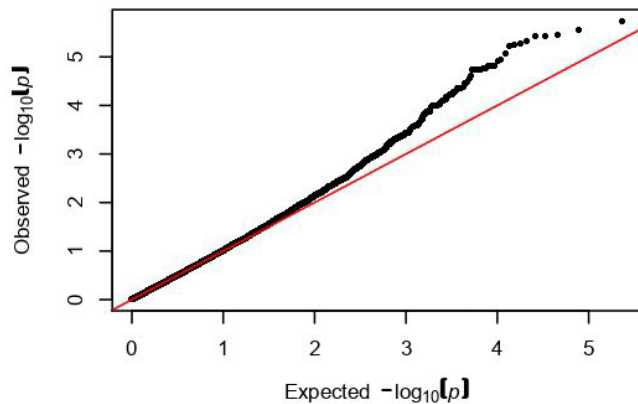
unidentified compound 2 norm (optimal MLM)



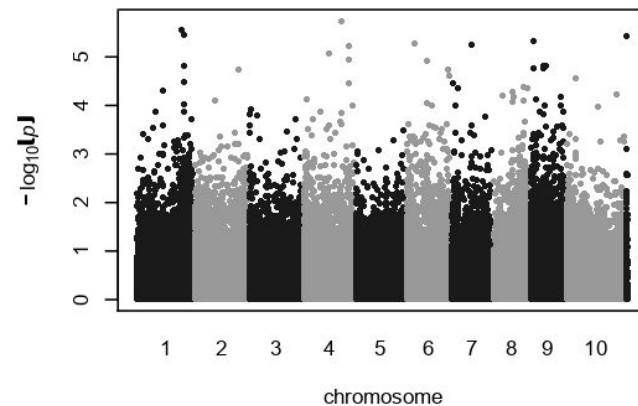
alpha-guainene* norm (standard MLM)



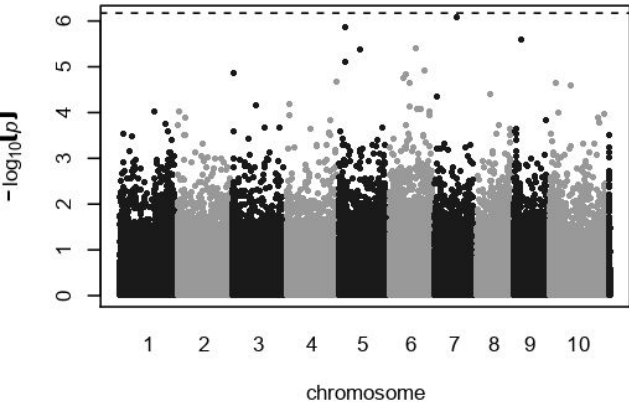
alpha-guainene* norm QQ plot (standard MLM)



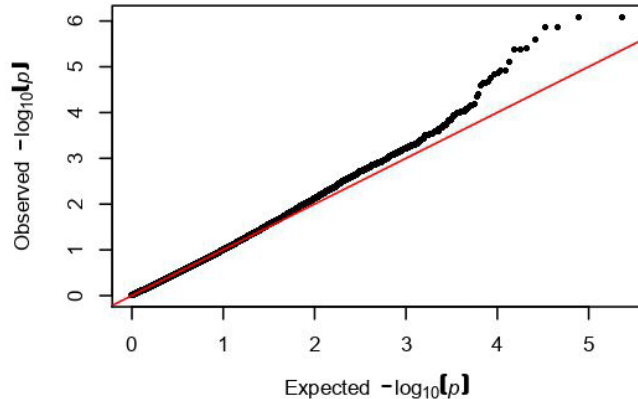
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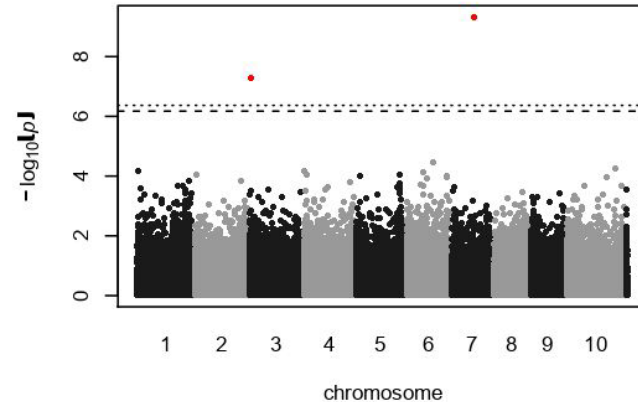
gamma-selinene* norm (standard MLM)



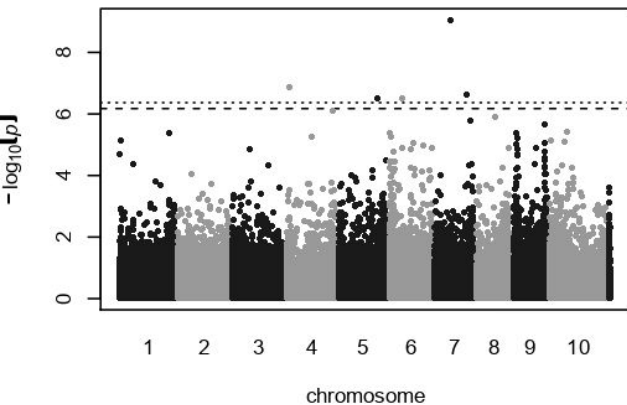
gamma-selinene* norm QQ plot (standard MLM)



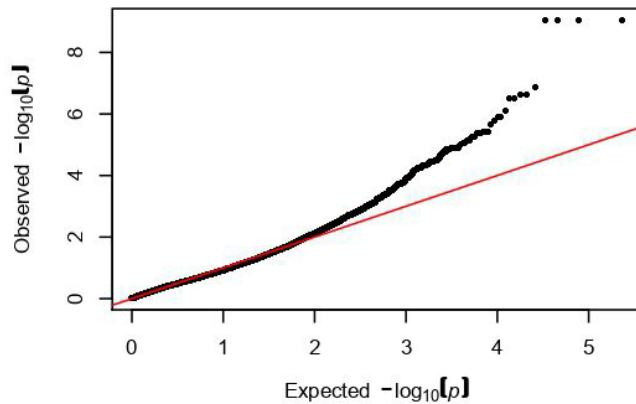
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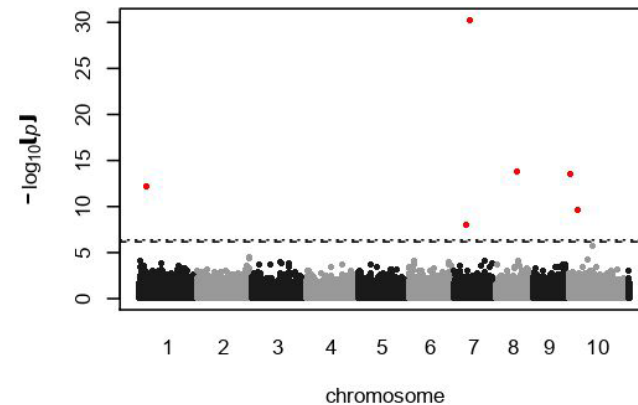
gurjunen* norm (standard MLM)



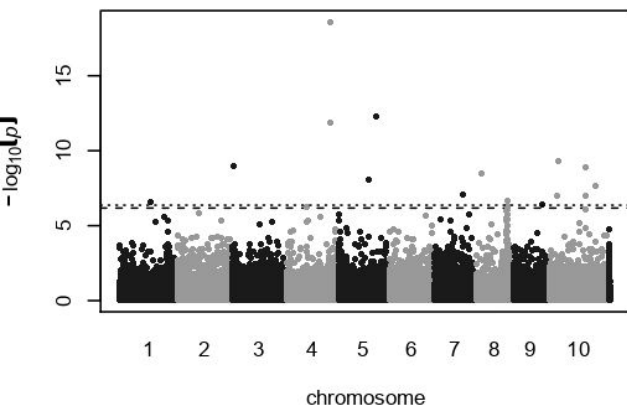
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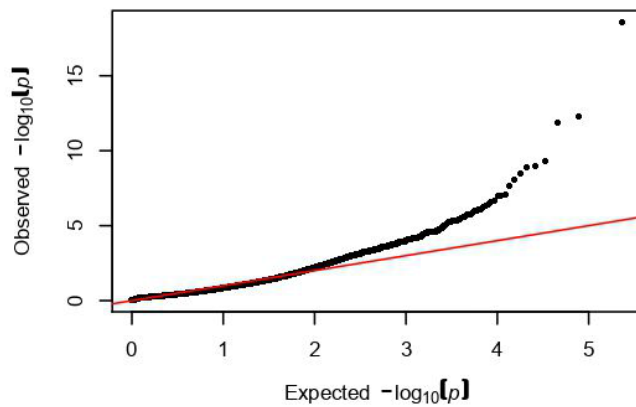
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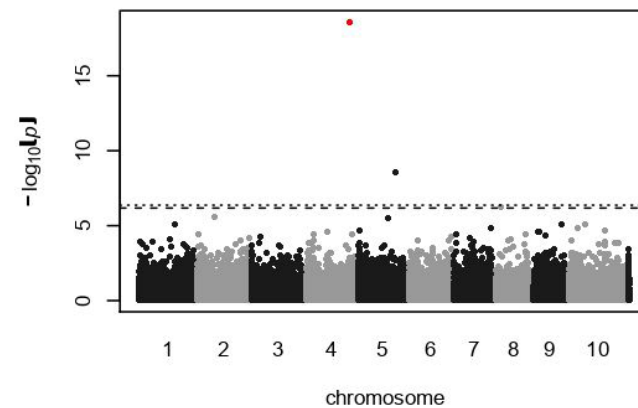
caryophyllene oxide norm (standard MLM)



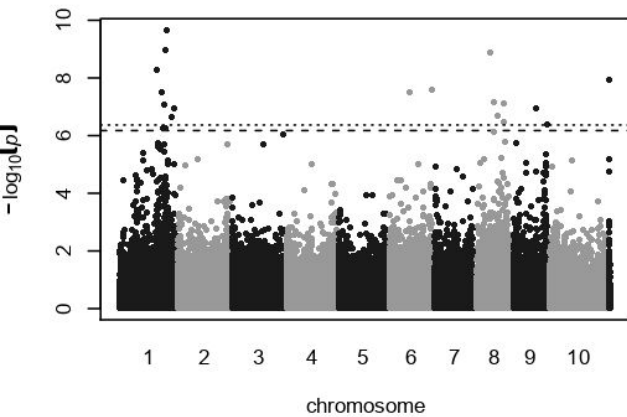
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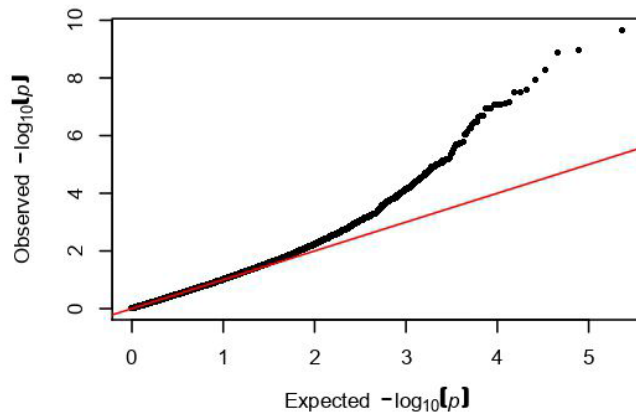
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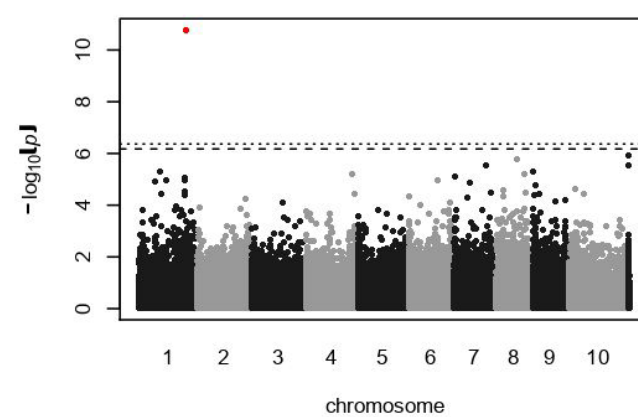
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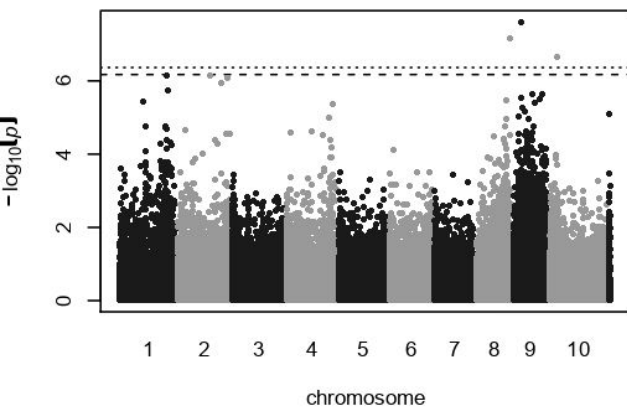
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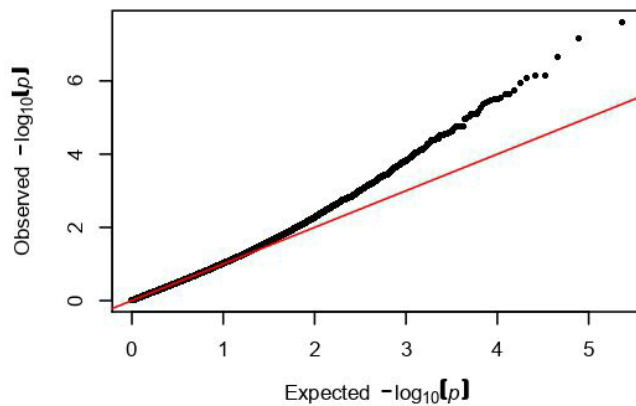
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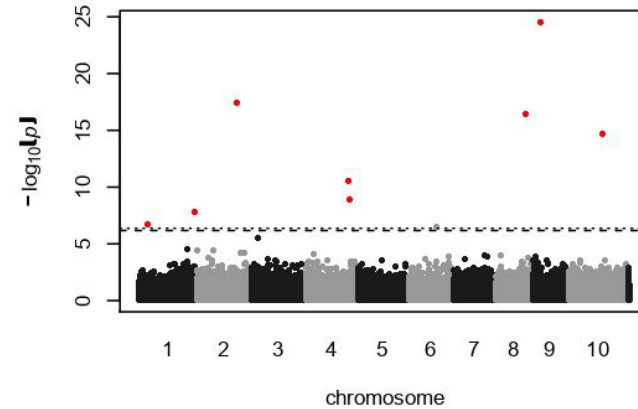
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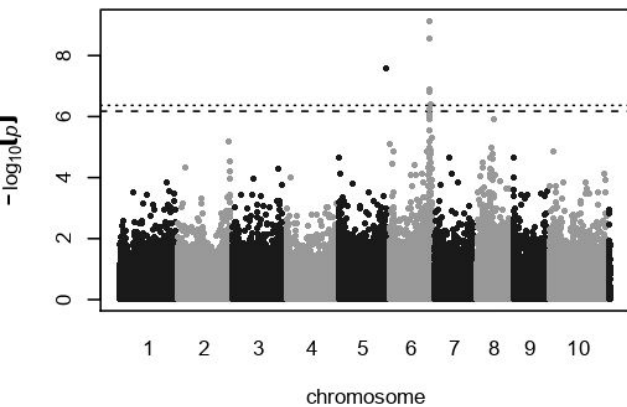
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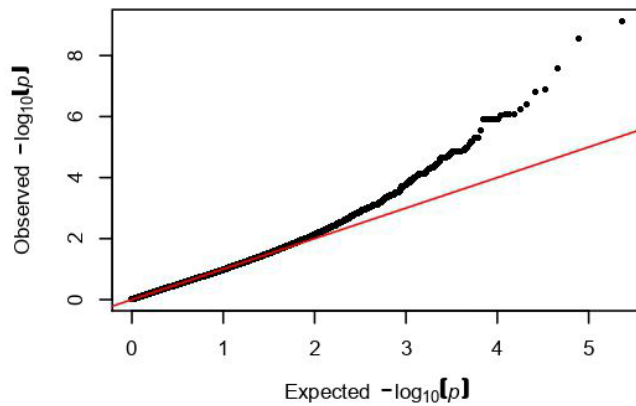
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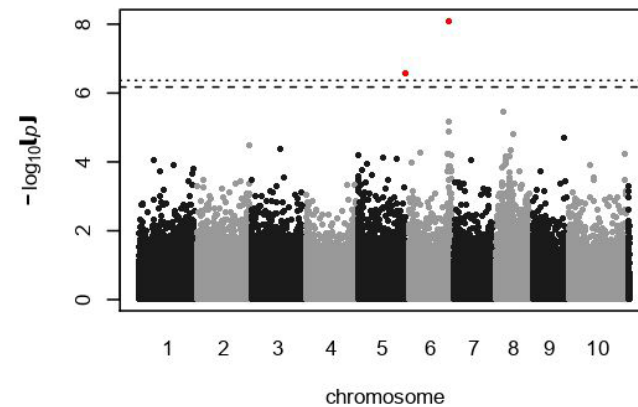
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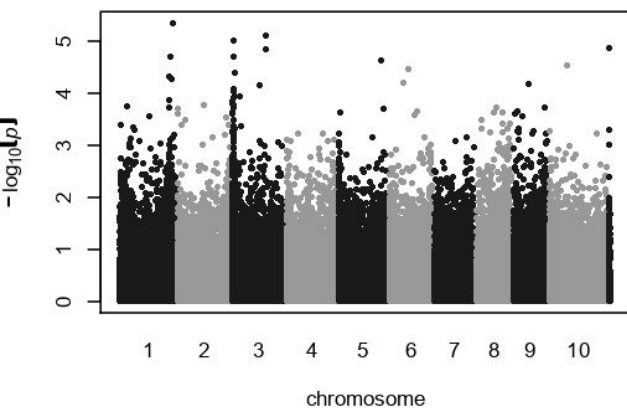
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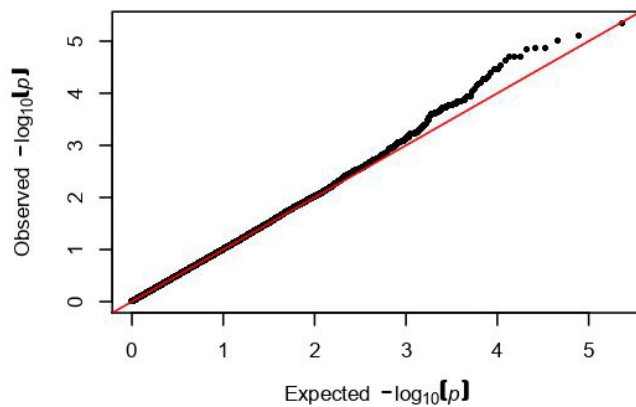
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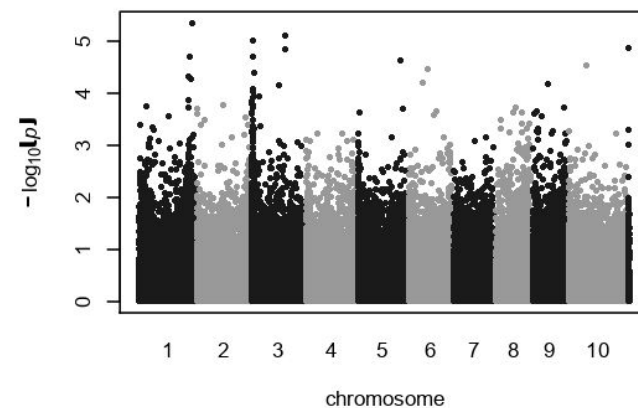
gamma-elemene* norm (standard MLM)



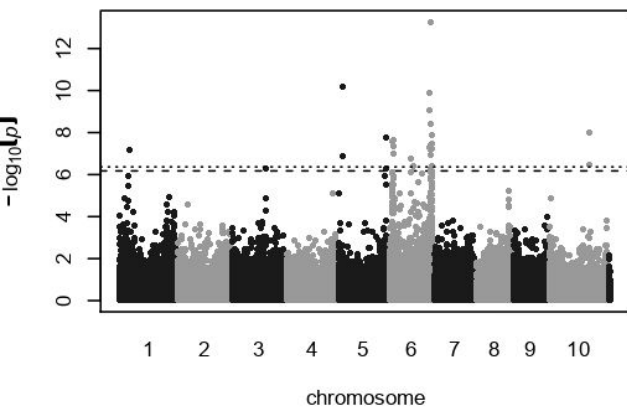
gamma-elemene* norm QQ plot (standard MLM)



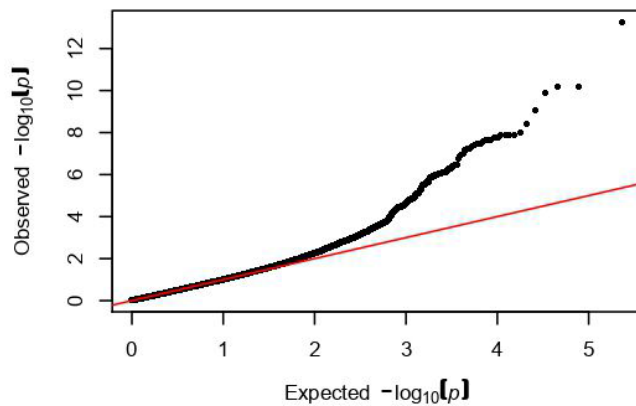
gamma-elemene* norm (optimal MLMM)



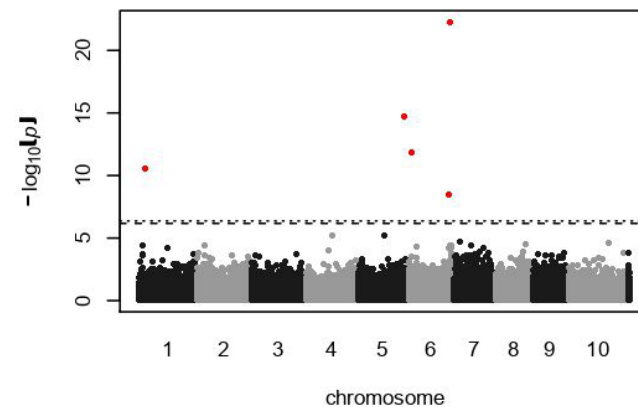
guaiol* norm (standard MLM)



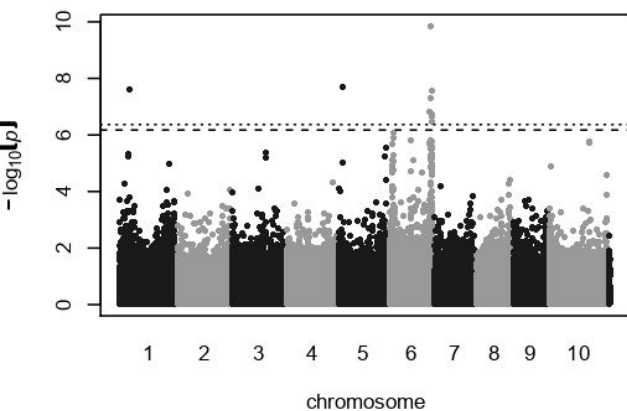
guaiol* norm QQ plot (standard MLM)



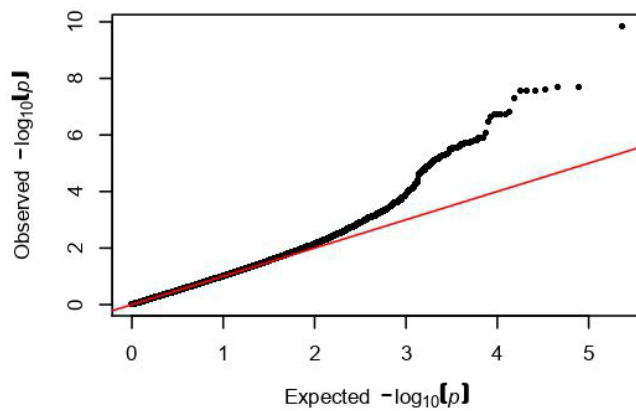
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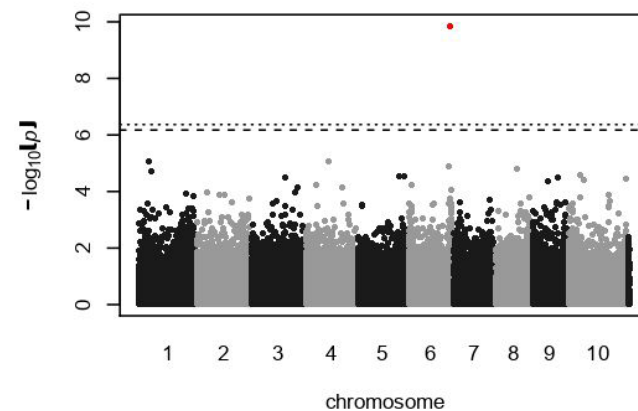
gamma-eudesmol* norm (standard MLM)



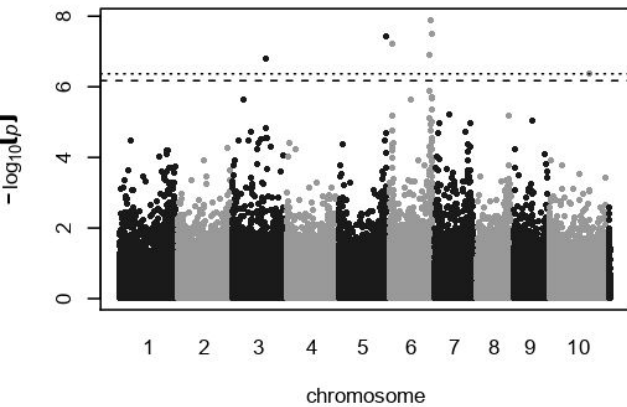
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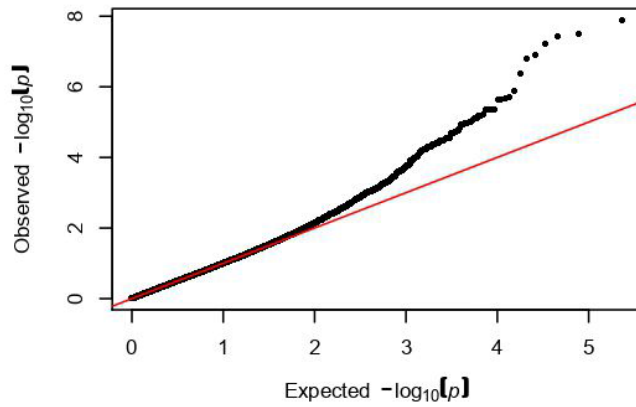
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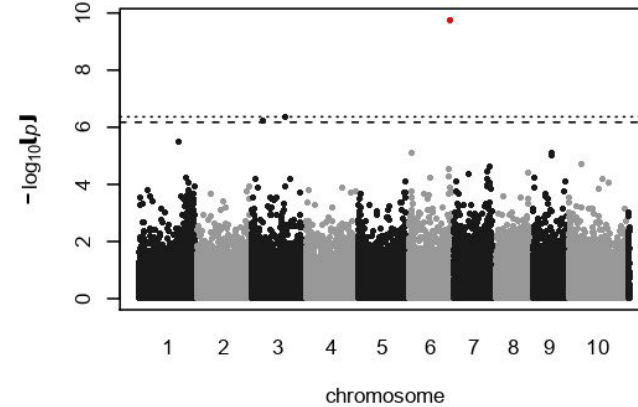
beta-eudesmol norm (standard MLM)



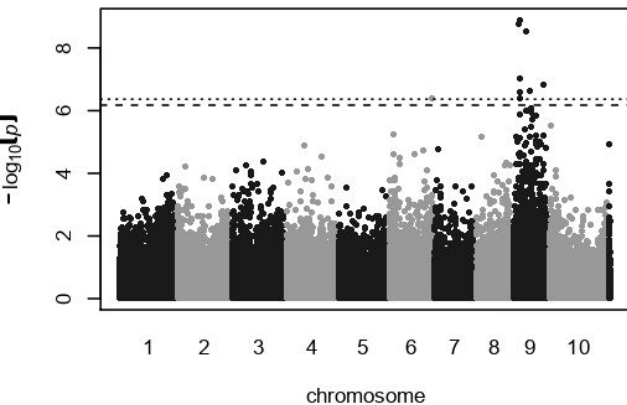
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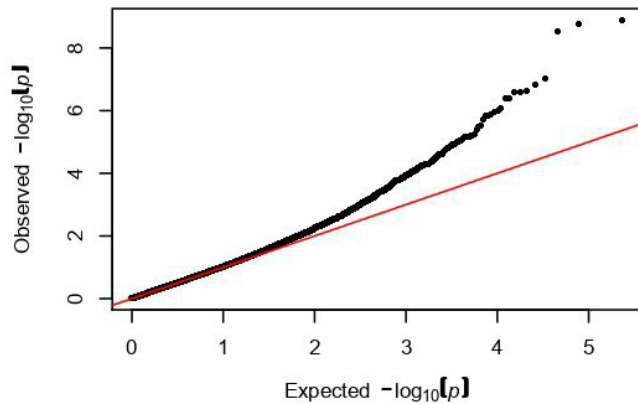
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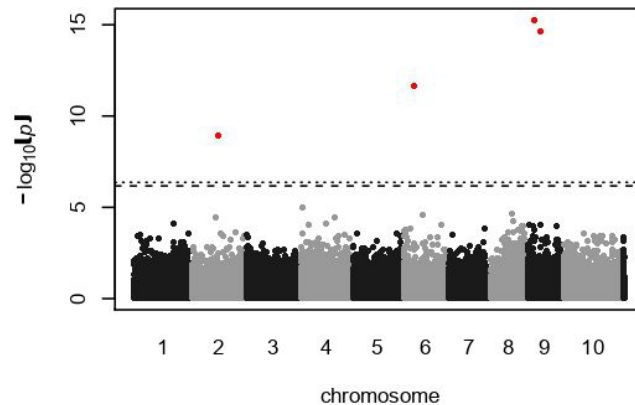
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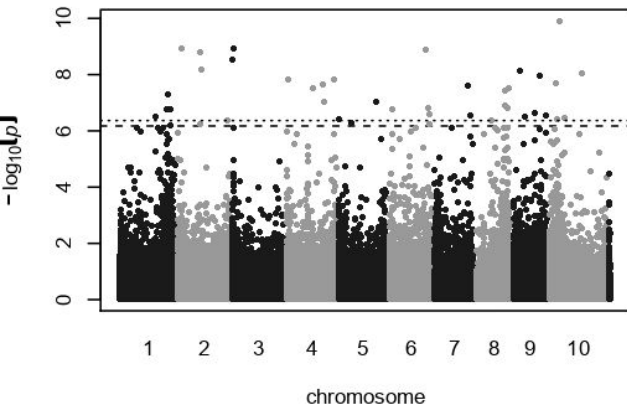
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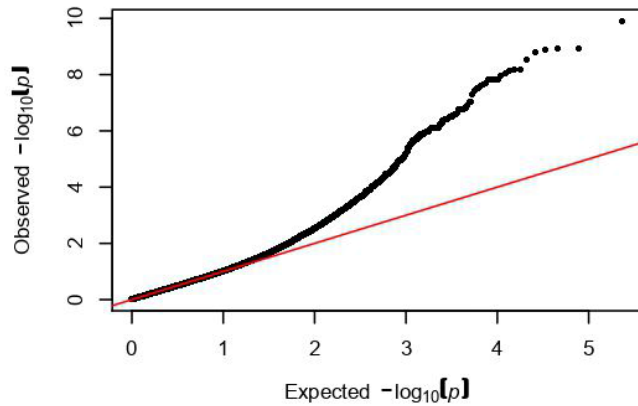
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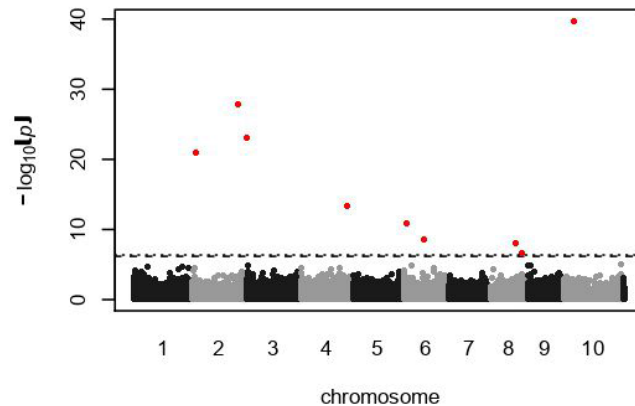
THC norm (standard MLM)



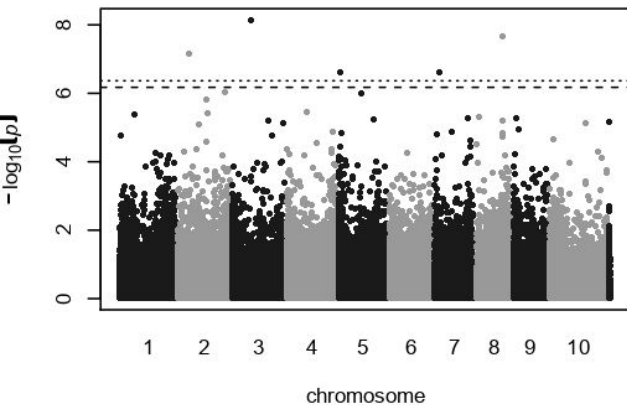
THC norm QQ plot (standard MLM)



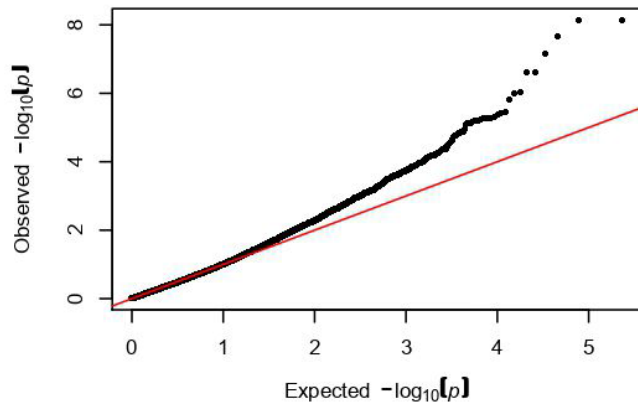
THC norm (optimal MLMM)



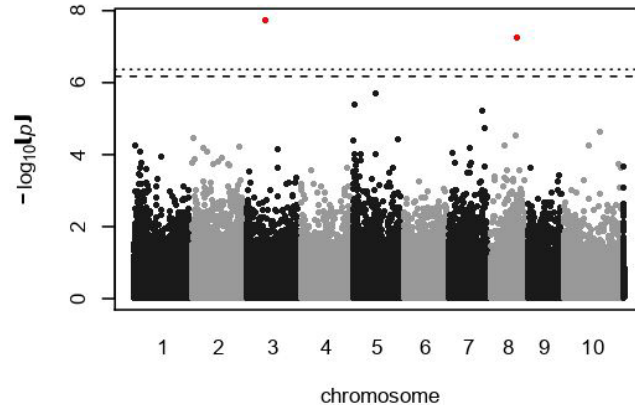
CBG norm (standard MLM)



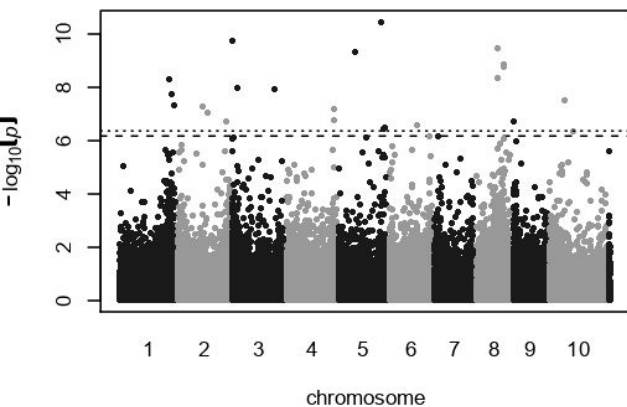
CBG norm QQ plot (standard MLM)



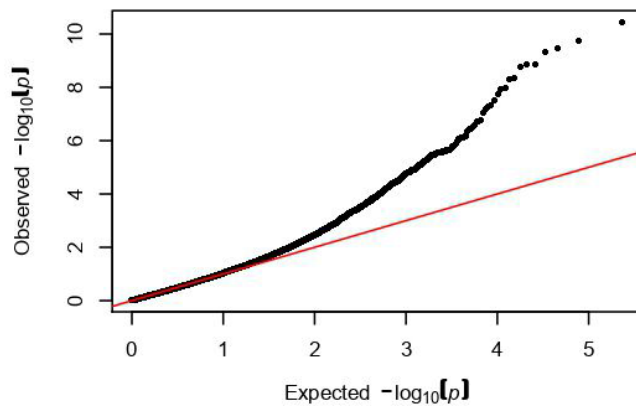
CBG norm (optimal MLMM)



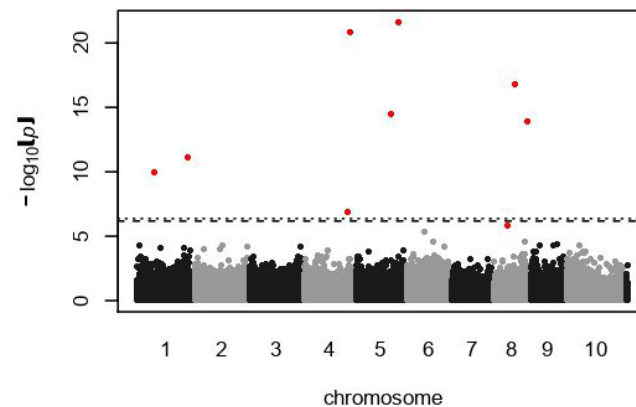
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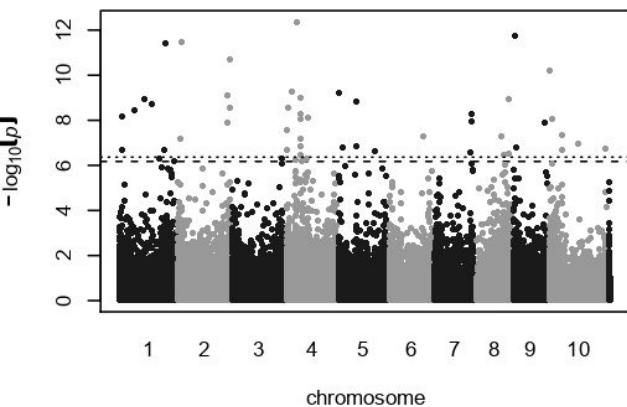
CBC norm QQ plot (standard MLM)



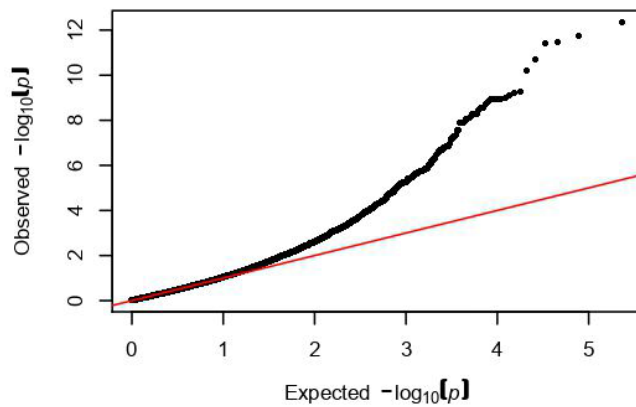
CBC norm (optimal MLMM)



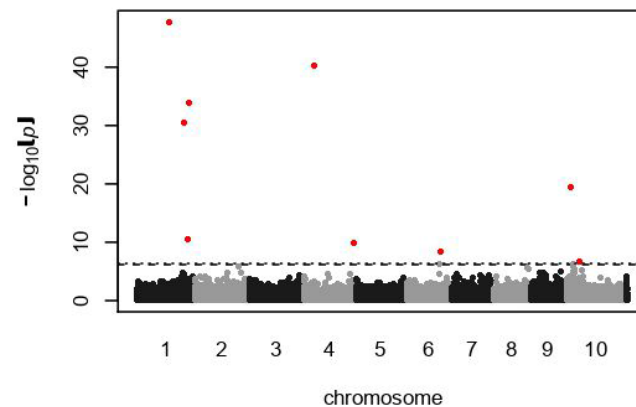
THCV norm (standard MLM)



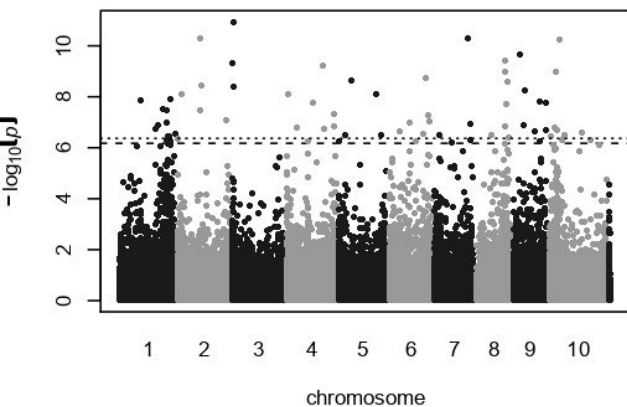
THCV norm QQ plot (standard MLM)



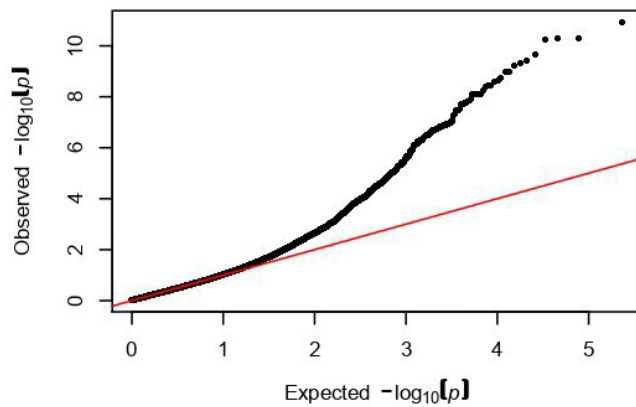
THCV norm (optimal MLMM)



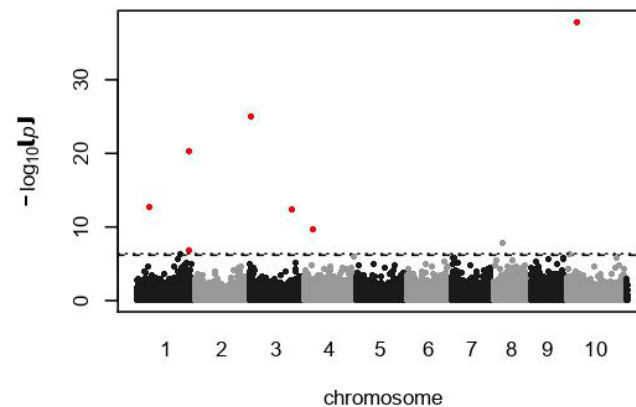
CBD norm (standard MLM)

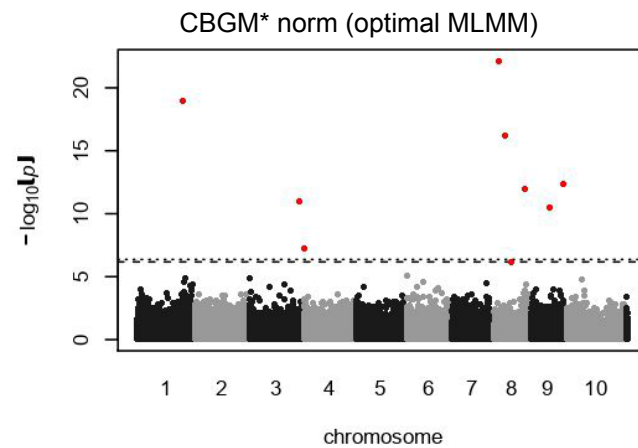
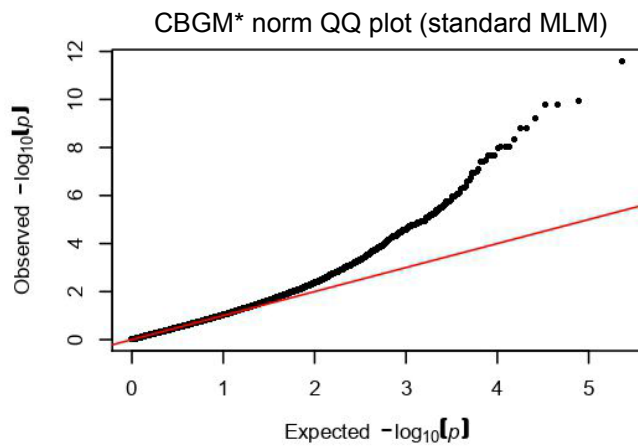
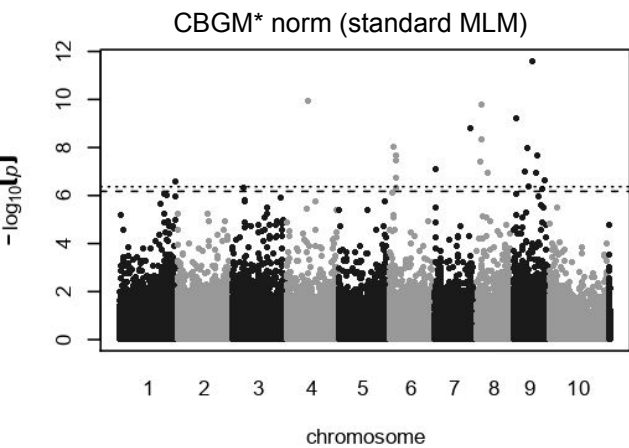


CBD norm QQ plot (standard MLM)

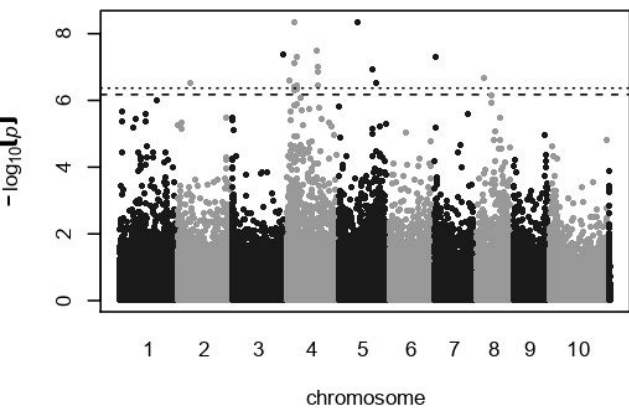


CBD norm (optimal MLMM)

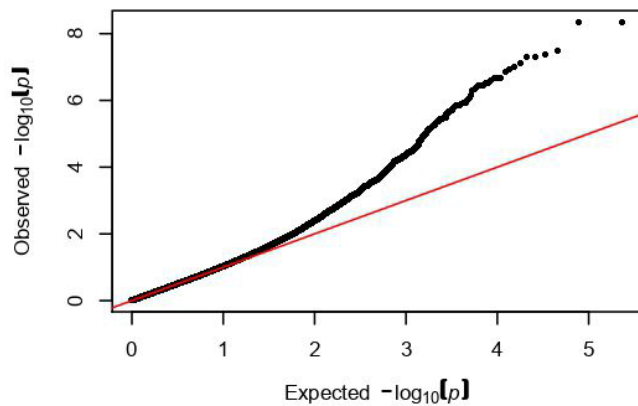




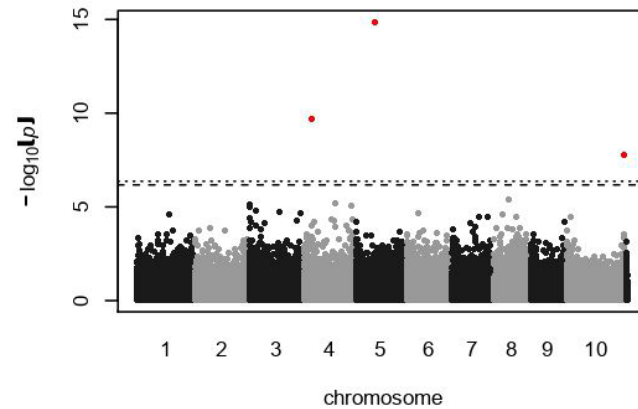
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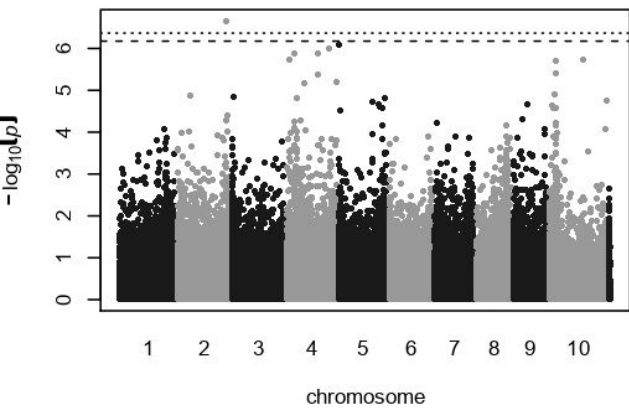
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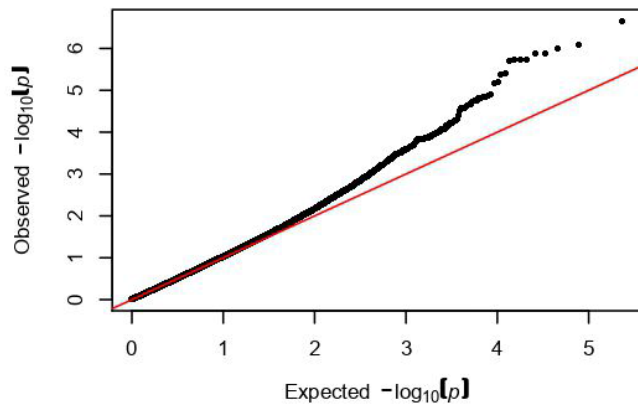
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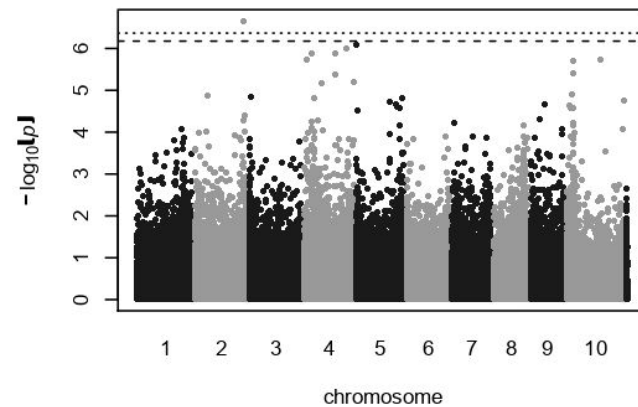
beta-pinene (standard MLM)



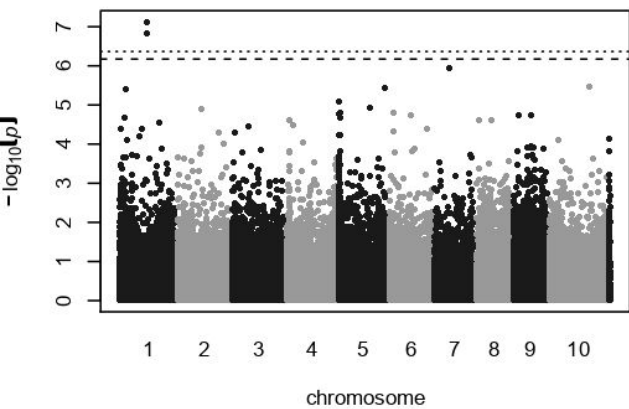
beta-pinene QQ plot (standard MLM)



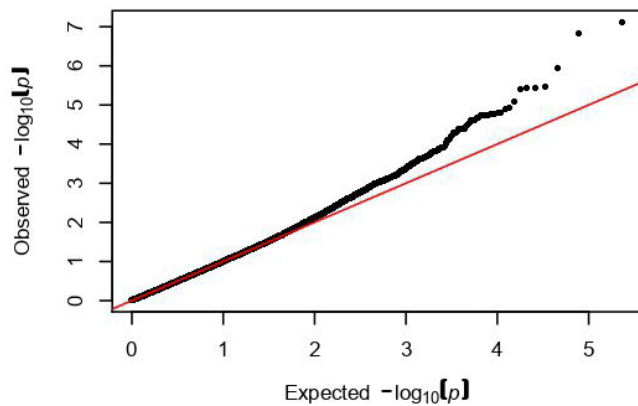
beta-pinene (optimal MLMM)



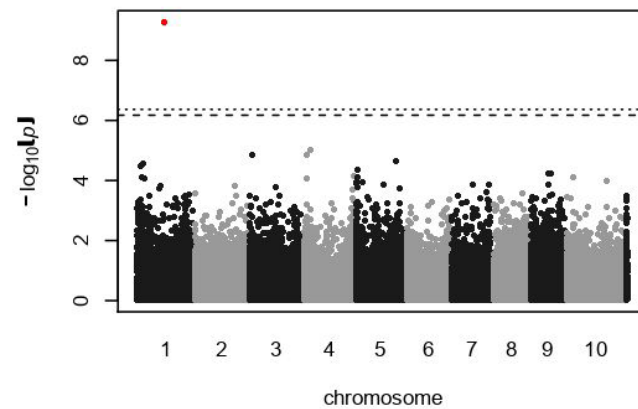
myrcene (standard MLM)



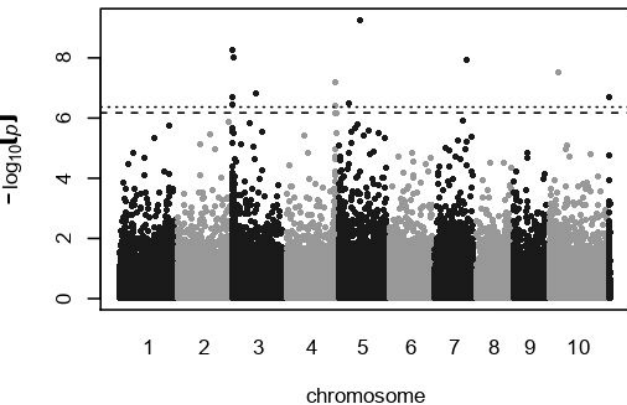
myrcene QQ plot (standard MLM)



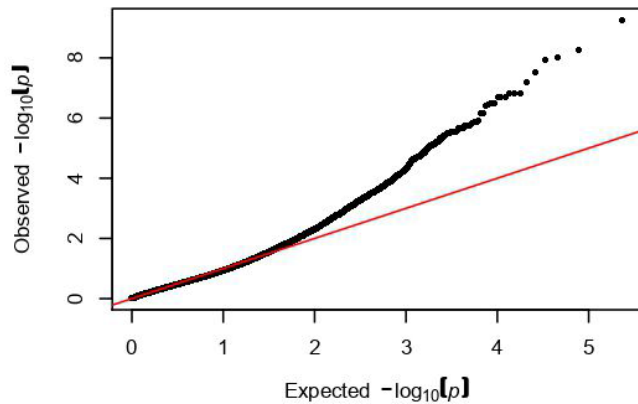
myrcene (optimal MLMM)



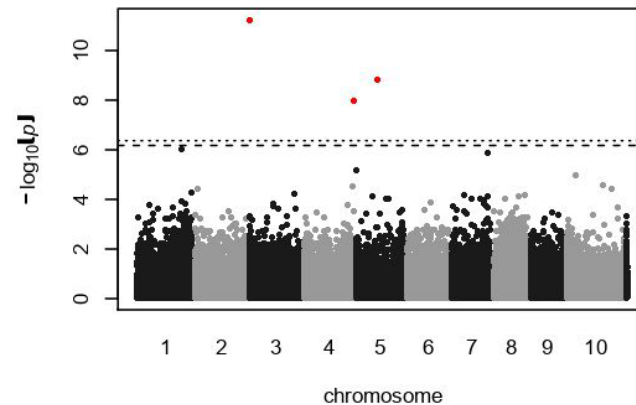
alpha-phellandrene (standard MLM)



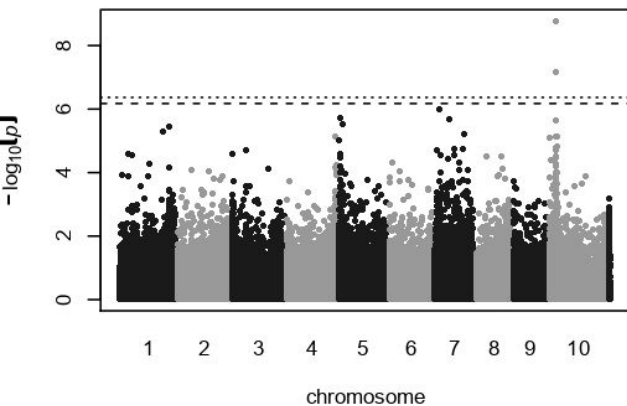
alpha-phellandrene QQ plot (standard MLM)



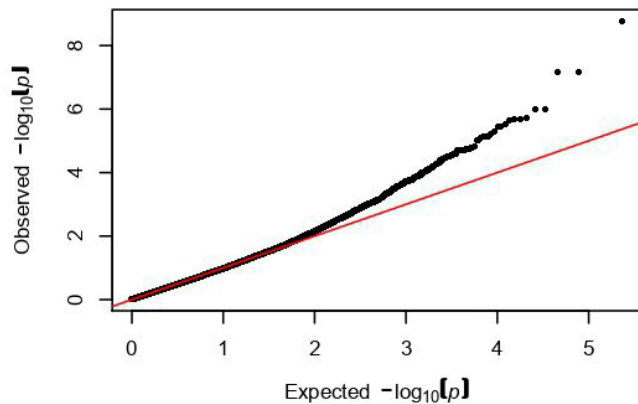
alpha-phellandrene (optimal MLMM)



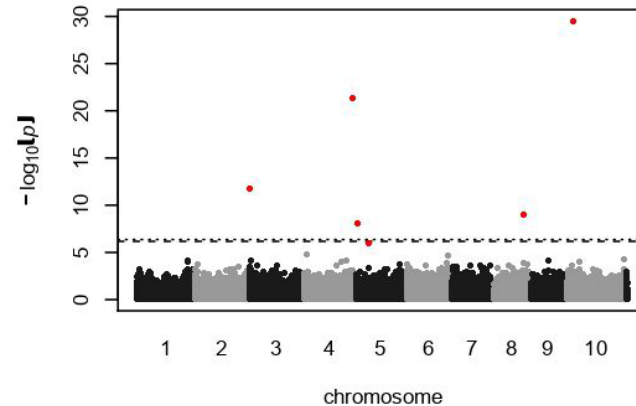
delta-3-carene (standard MLM)



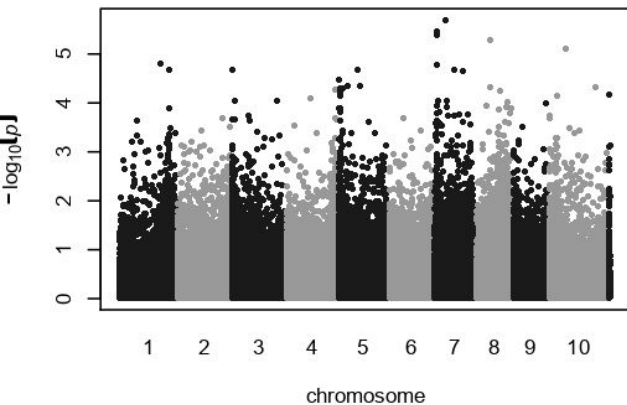
delta-3-carene QQ plot (standard MLM)



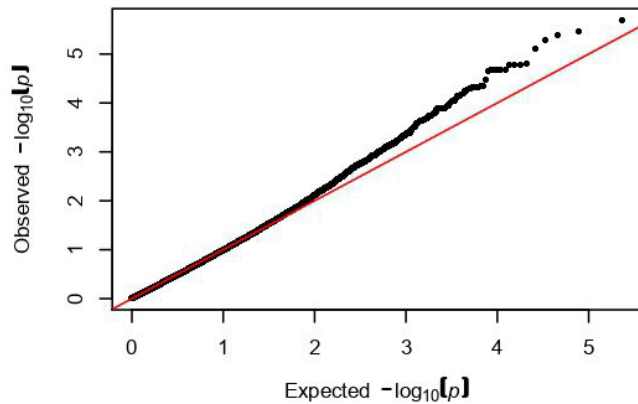
delta-3-carene (optimal MLMM)



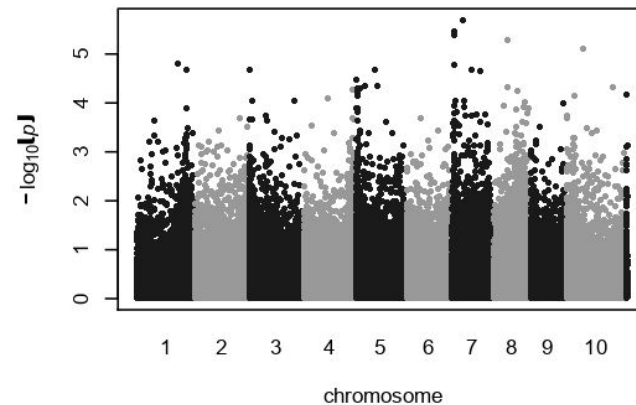
ocimene (standard MLM)



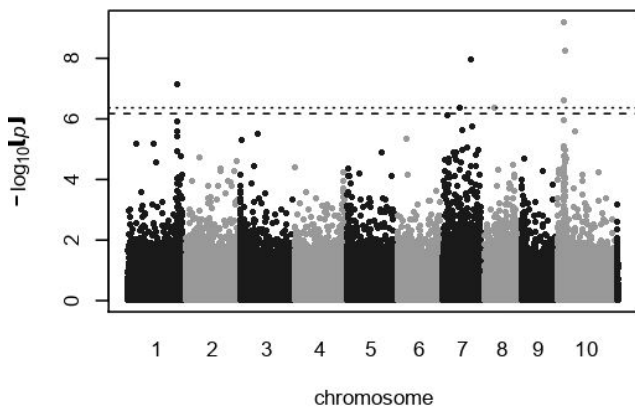
ocimene QQ plot (standard MLM)



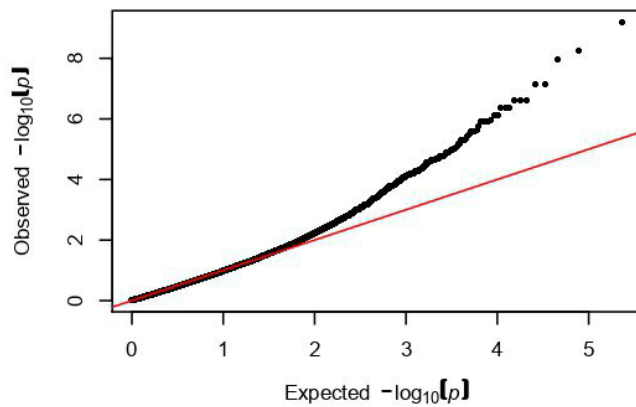
ocimene (optimal MLMM)



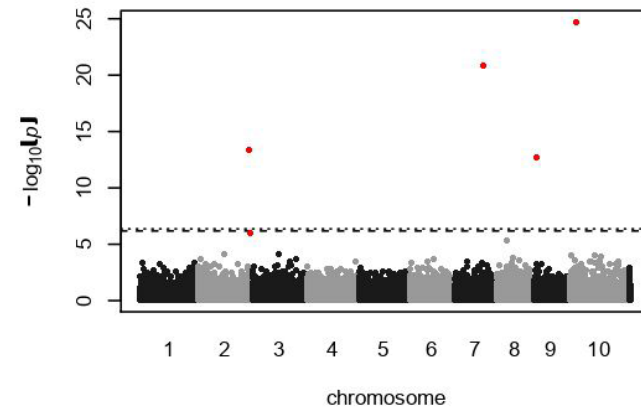
gamma-terpinene (standard MLM)



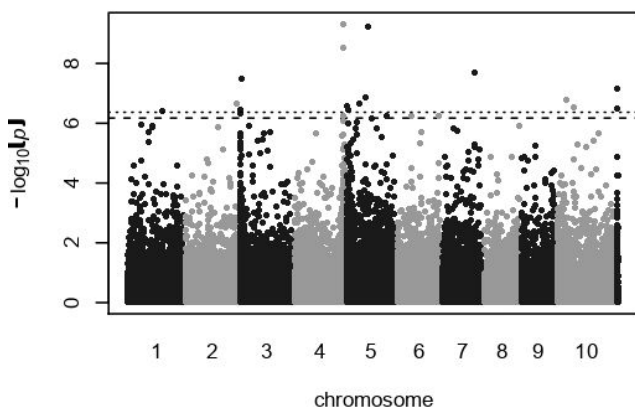
gamma-terpinene QQ plot (standard MLM)



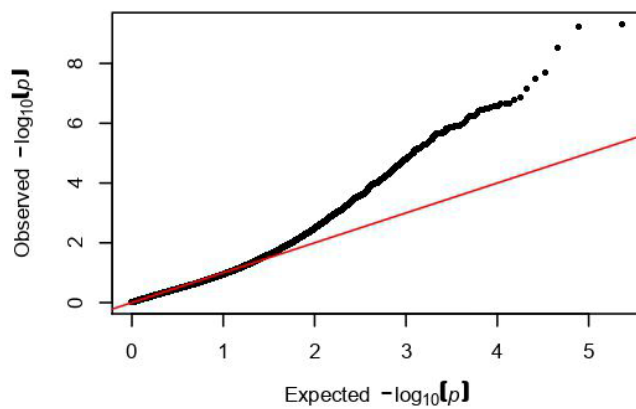
gamma-terpinene (optimal MLMM)



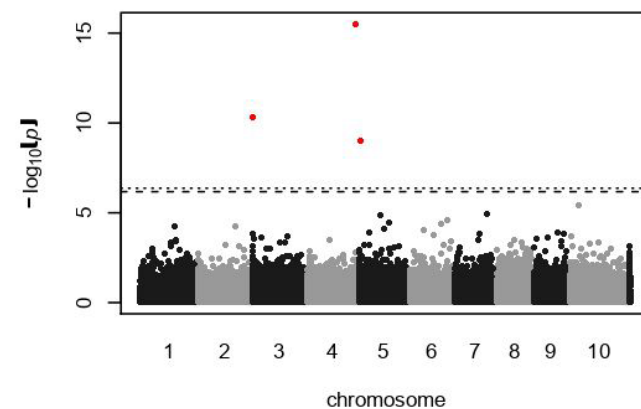
terpinolene* (standard MLM)



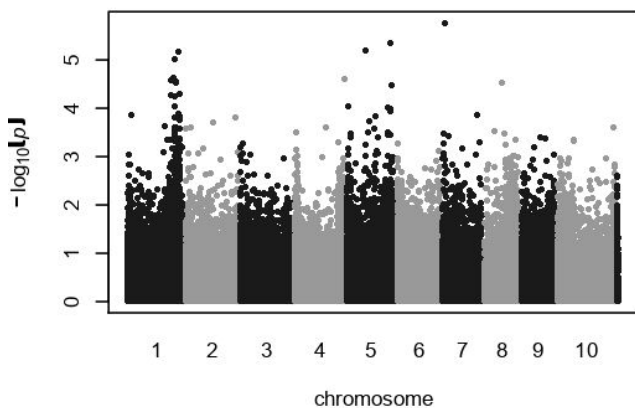
terpinolene* QQ plot (standard MLM)



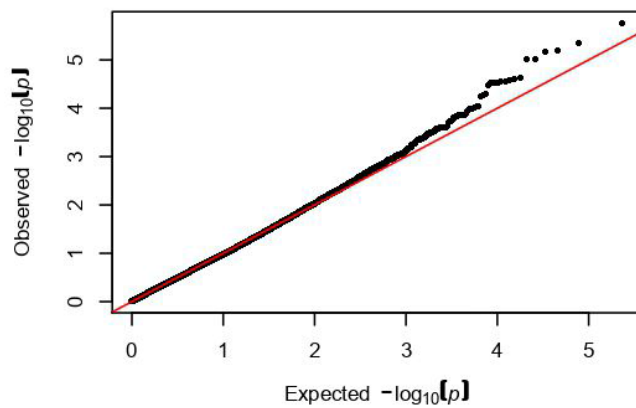
terpinolene* (optimal MLMM)



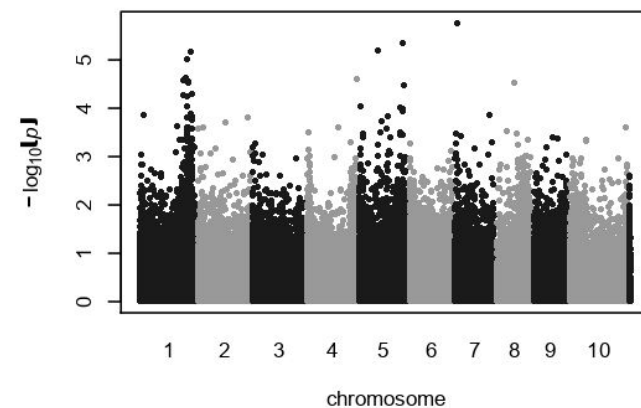
linalool (standard MLM)



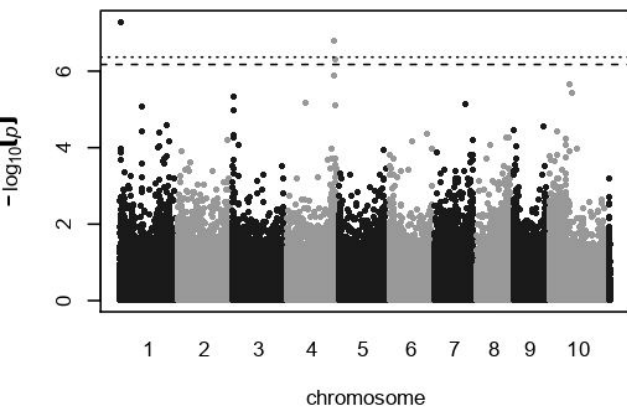
linalool QQ plot (standard MLM)



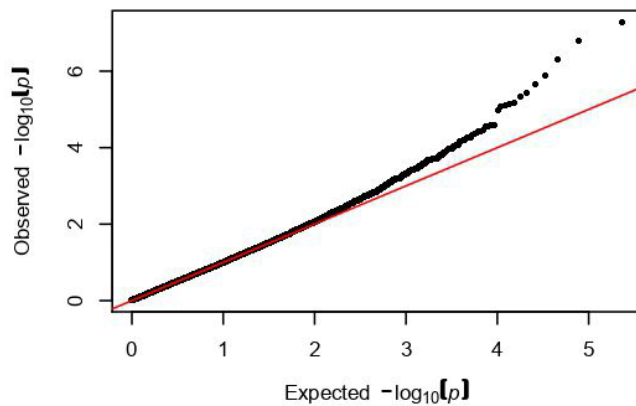
linalool (optimal MLMM)



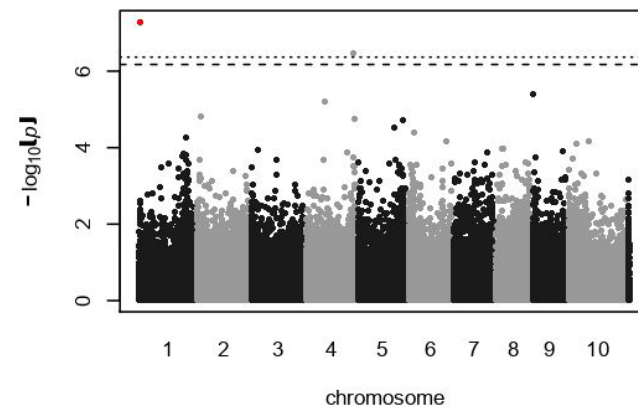
limonene* (standard MLM)



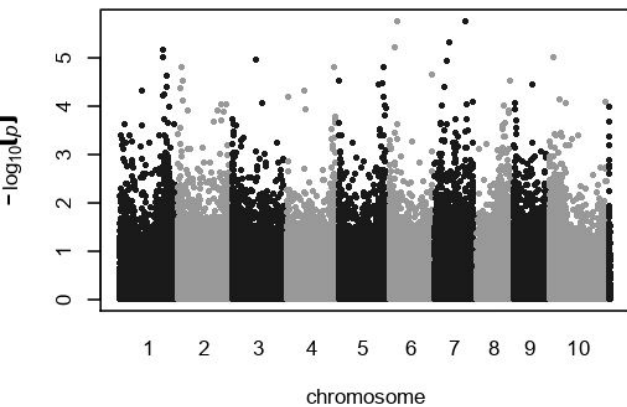
limonene* QQ plot (standard MLM)



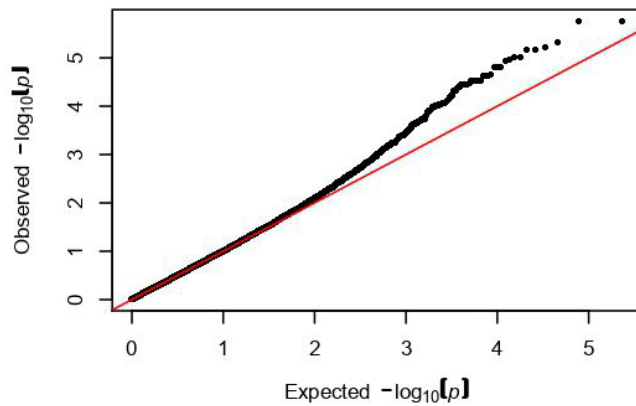
limonene* (optimal MLMM)



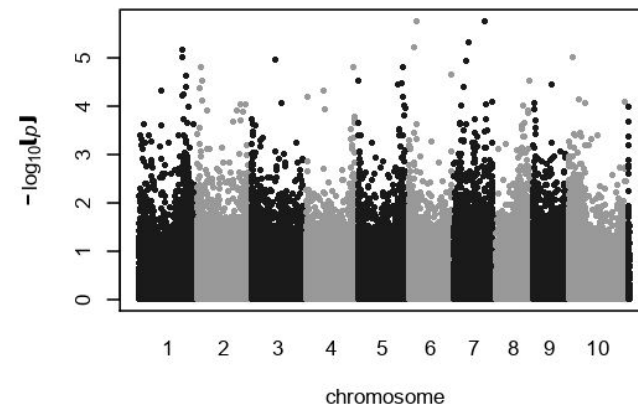
fenchol (standard MLM)



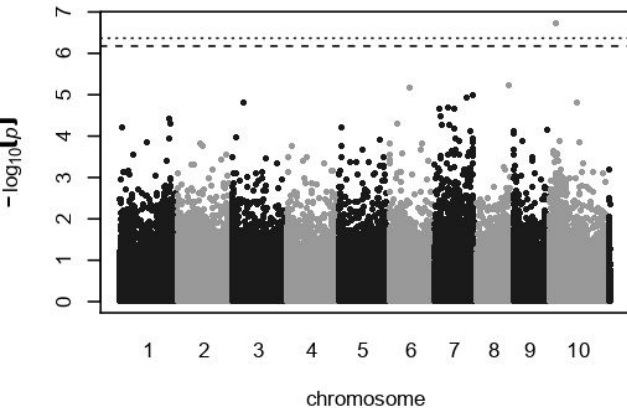
fenchol QQ plot (standard MLM)



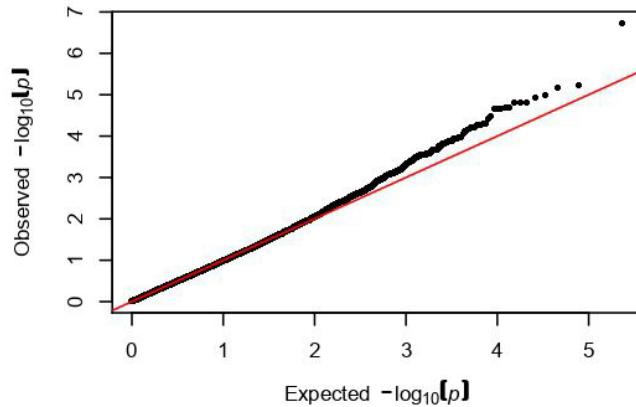
fenchol (optimal MLMM)



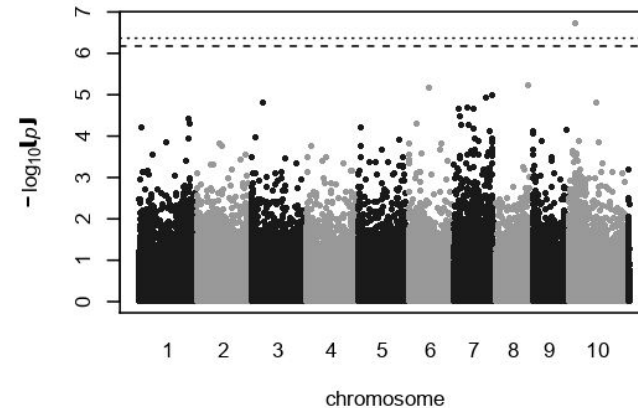
sabinene hydrate* (standard MLM)



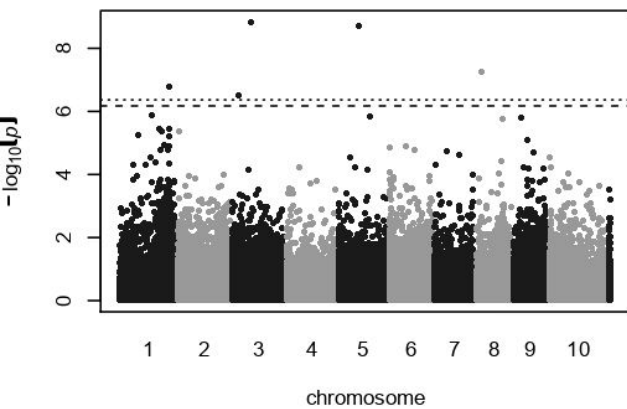
sabinene hydrate* QQ plot (standard MLM)



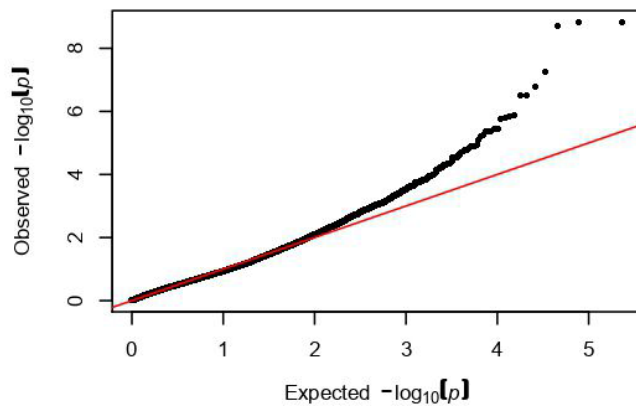
sabinene hydrate* (optimal MLMM)



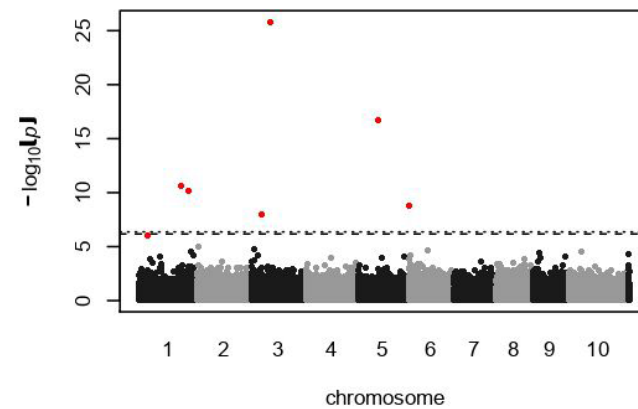
camphor (standard MLM)



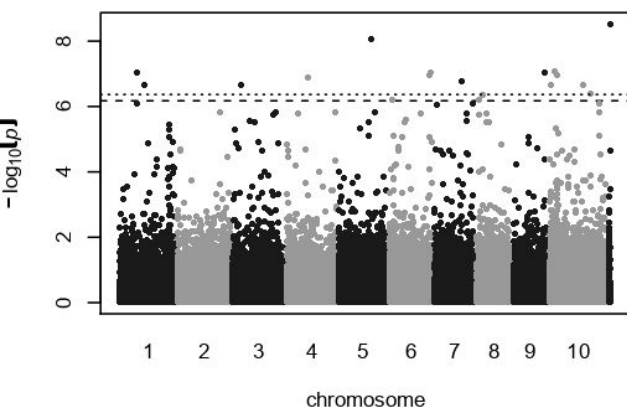
camphor QQ plot (standard MLM)



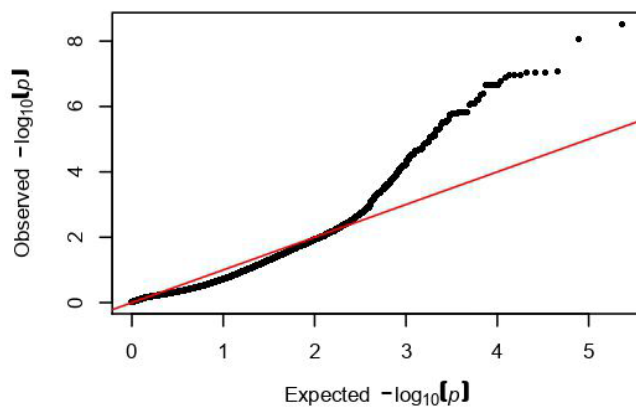
camphor (optimal MLMM)



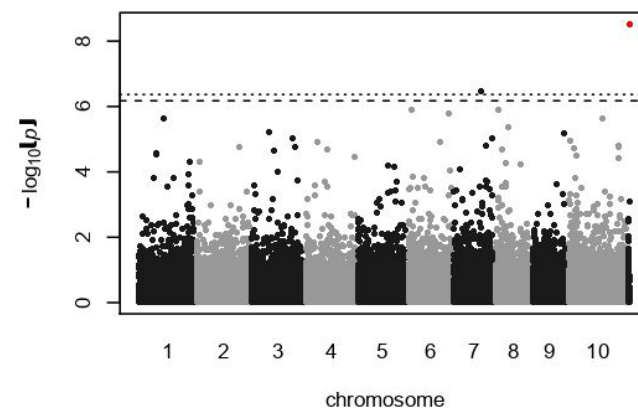
borneol (standard MLM)



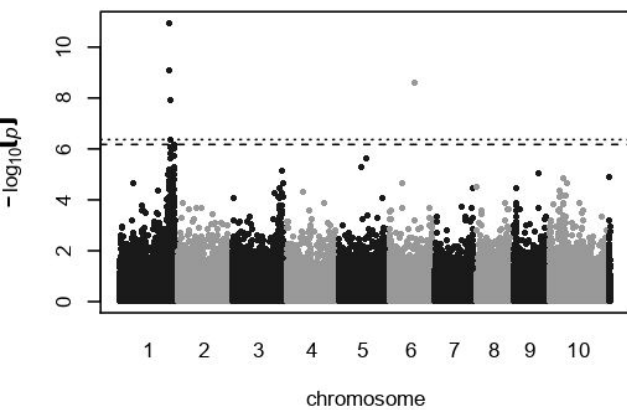
borneol QQ plot (standard MLM)



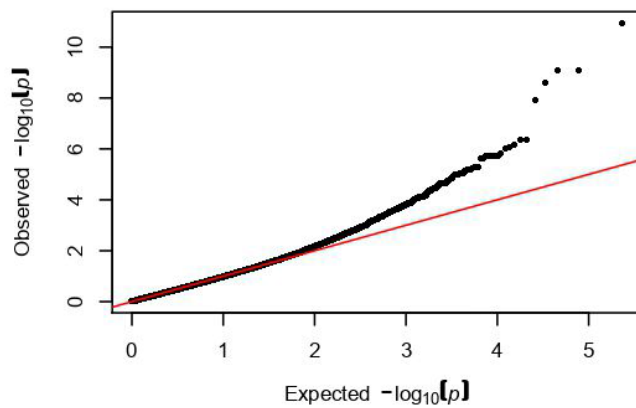
borneol (optimal MLMM)



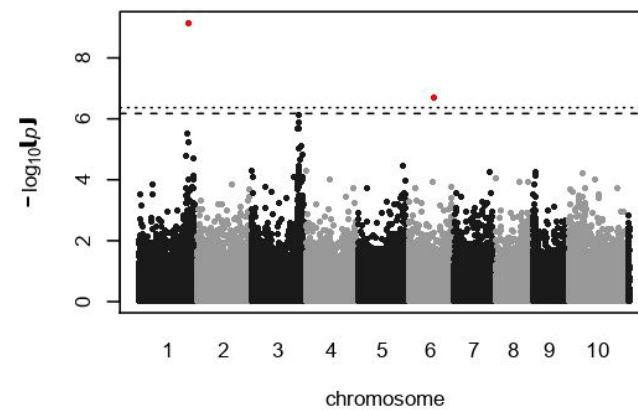
terpineol (standard MLM)



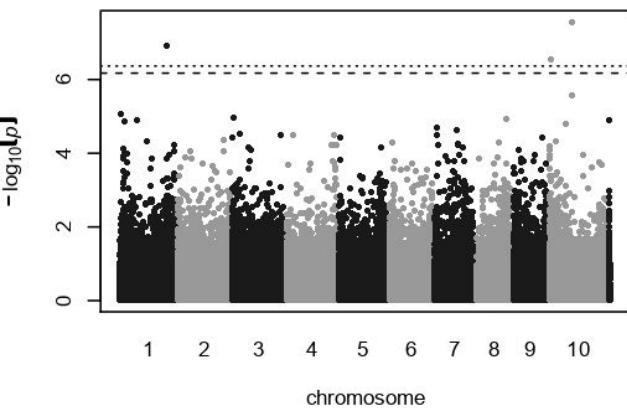
terpineol QQ plot (standard MLM)



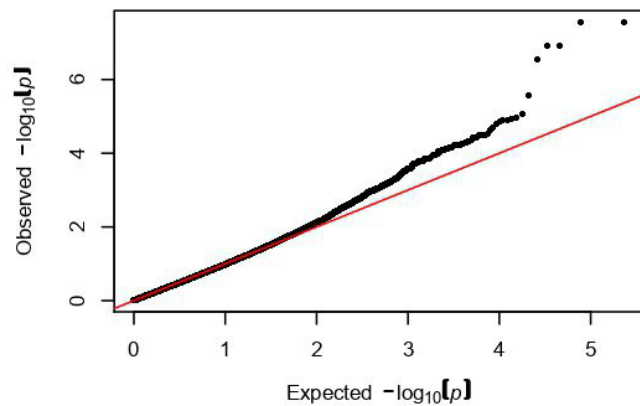
terpineol (optimal MLMM)



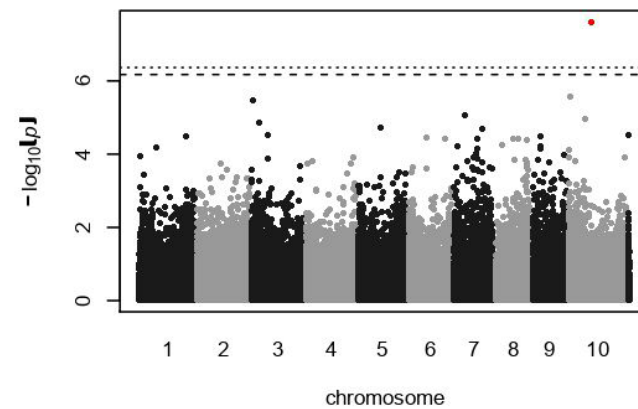
unidentified compound 1 (standard MLM)



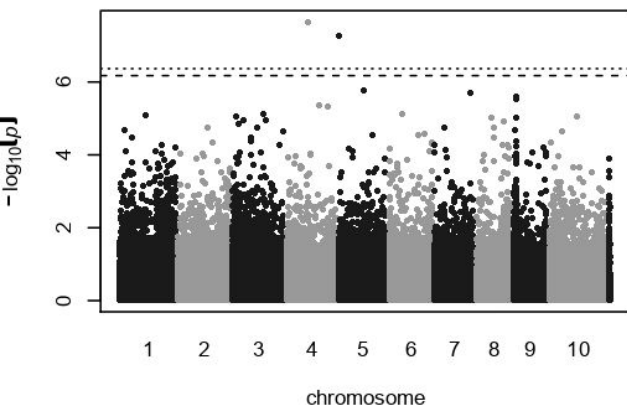
unidentified compound 1 QQ plot (standard MLM)



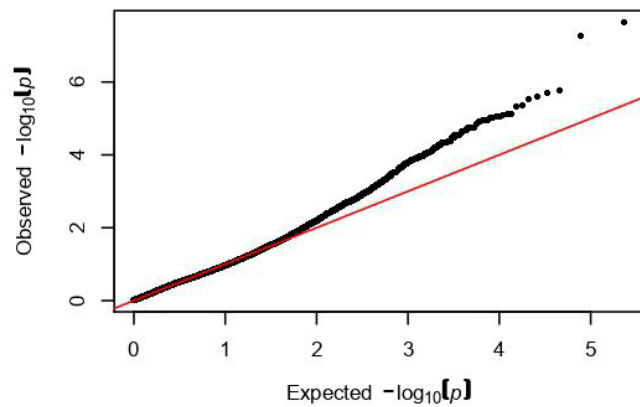
unidentified compound 1 (optimal MLMM)



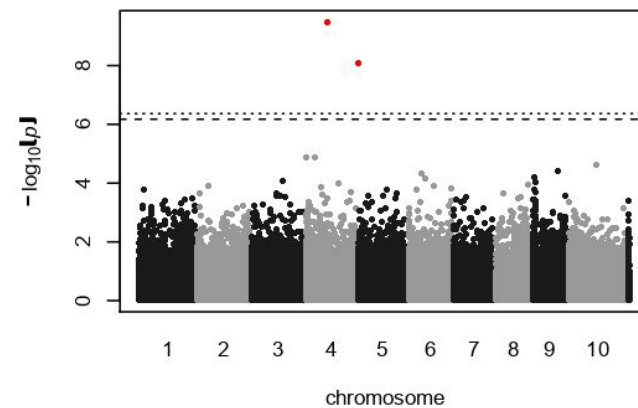
delta-guaiene* (standard MLM)



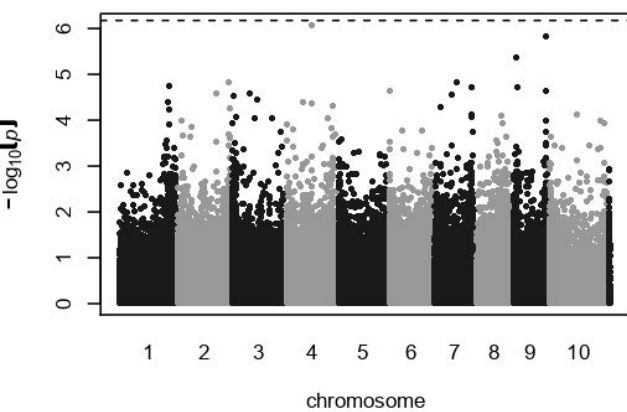
delta-guaiene* QQ plot (standard MLM)



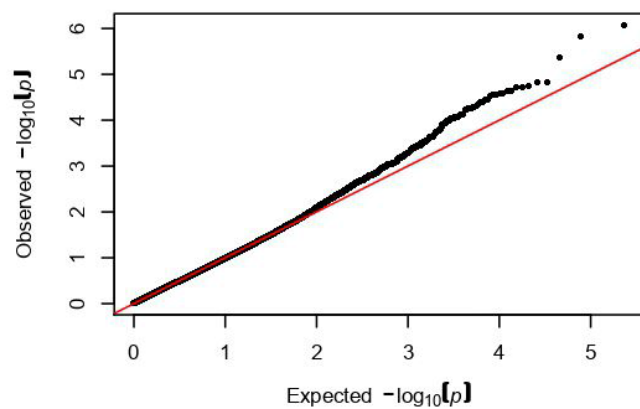
delta-guaiene* (optimal MLMM)



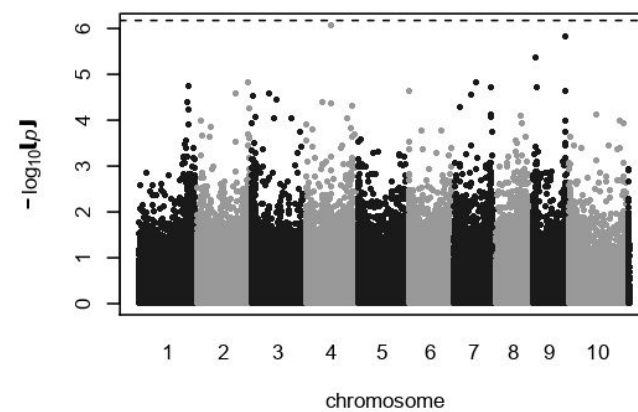
caryophyllene (standard MLM)



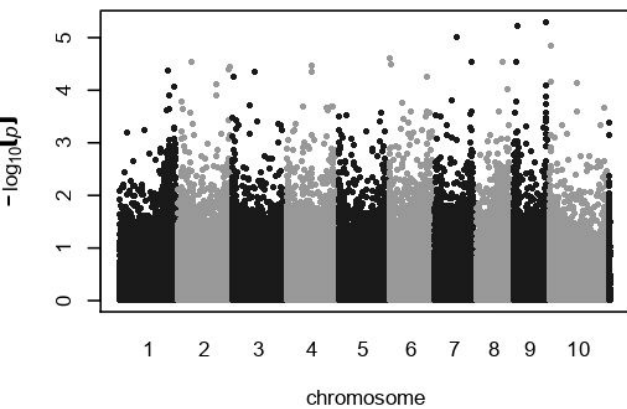
caryophyllene QQ plot (standard MLM)



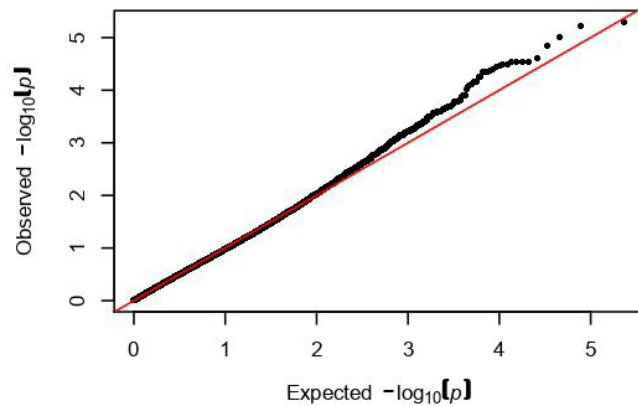
caryophyllene (optimal MLMM)



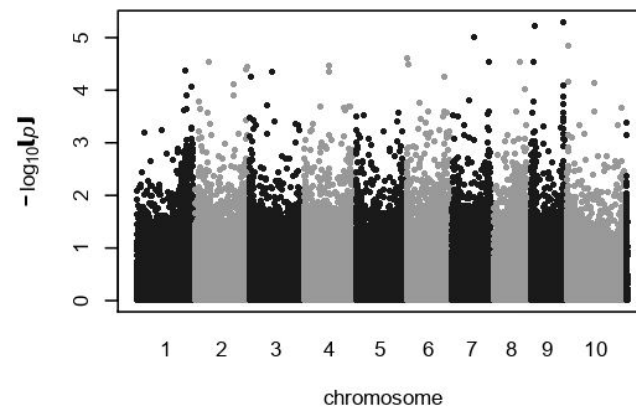
alpha-humulene (standard MLM)



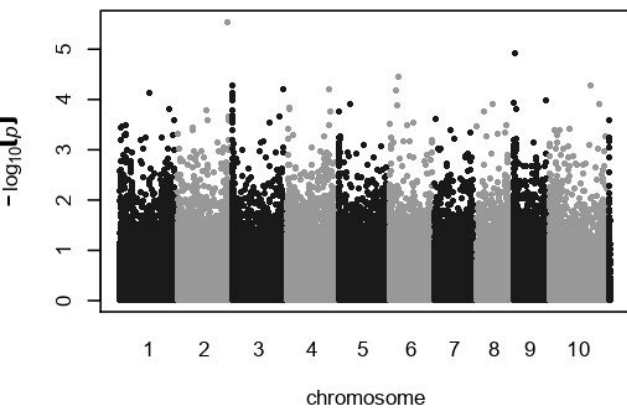
alpha-humulene QQ plot (standard MLM)



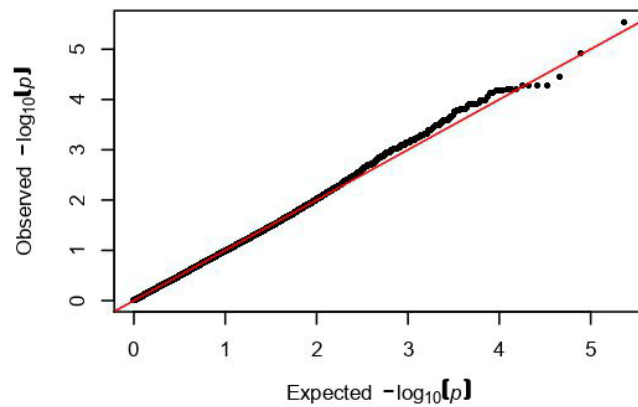
alpha-humulene (optimal MLMM)



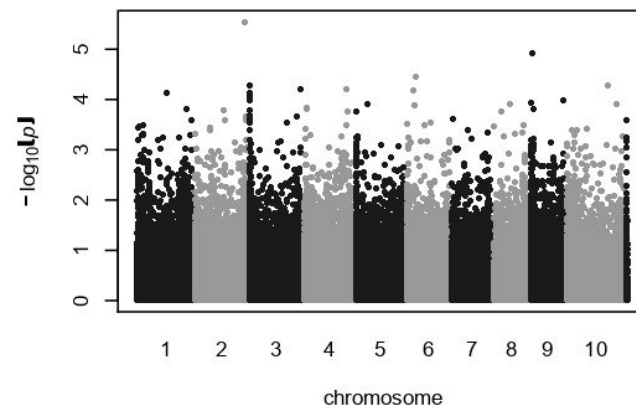
gamma-cadinene* (standard MLM)



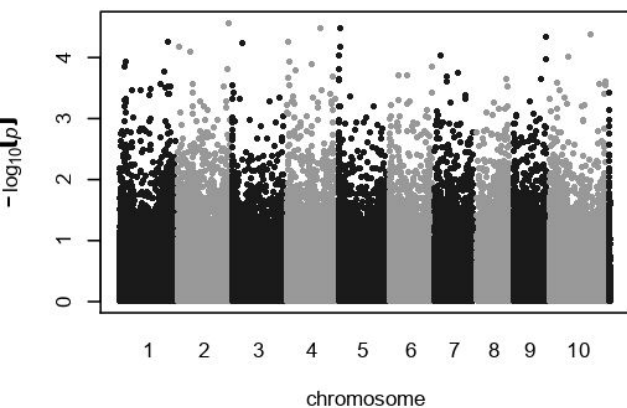
gamma-cadinene* QQ plot (standard MLM)



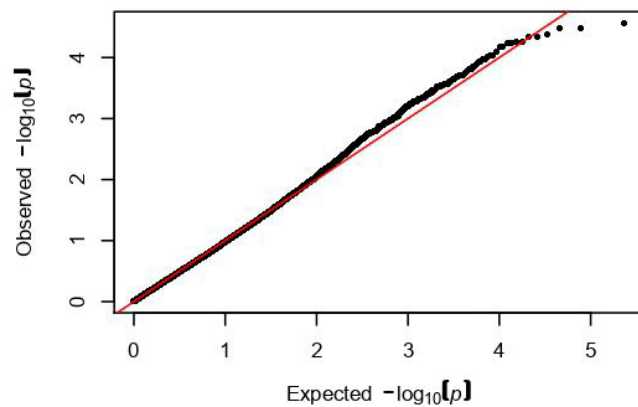
gamma-cadinene* (optimal MLMM)



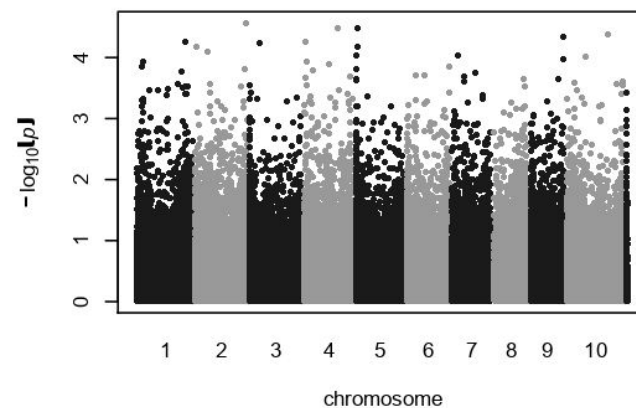
eudesma* (standard MLM)



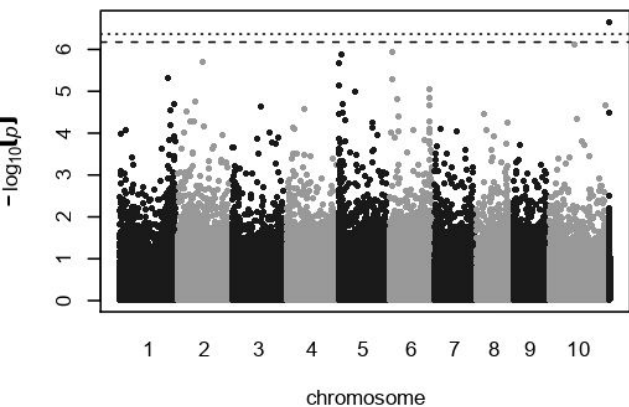
eudesma* QQ plot (standard MLM)



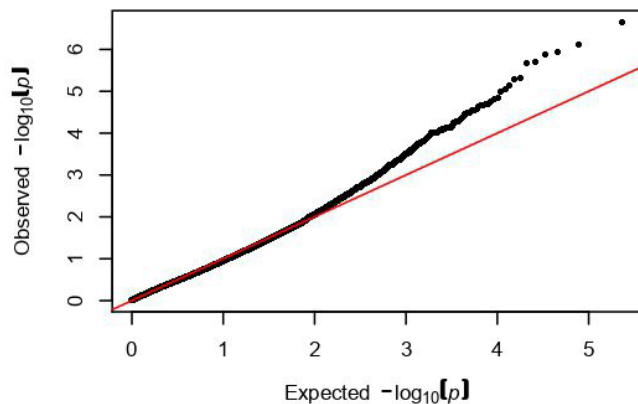
eudesma* (optimal MLMM)



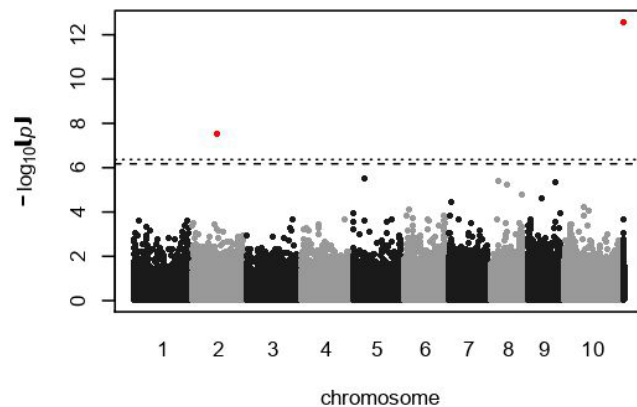
unidentified compound 2 (standard MLM)



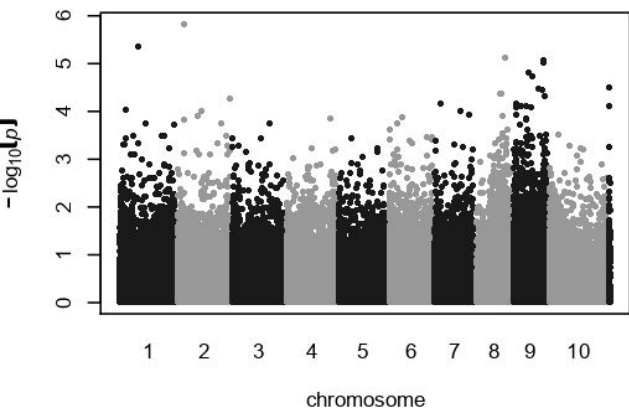
unidentified compound 2 QQ plot (standard MLM)



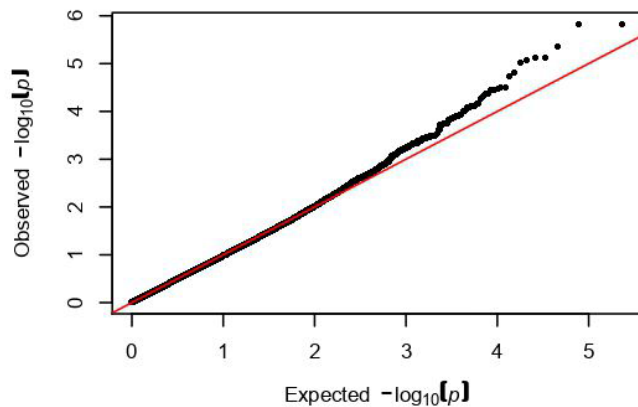
unidentified compound 2 (optimal MLMM)



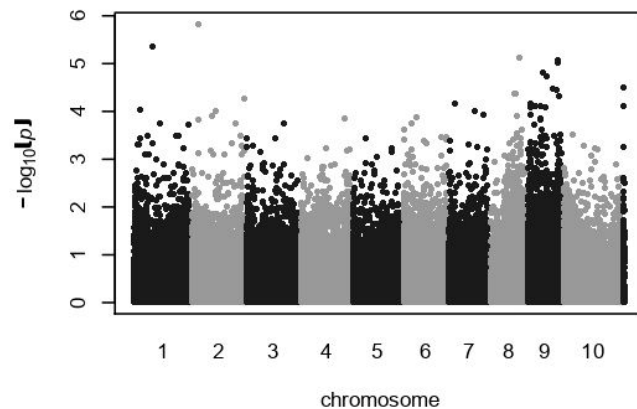
alpha-guaiene* (standard MLM)



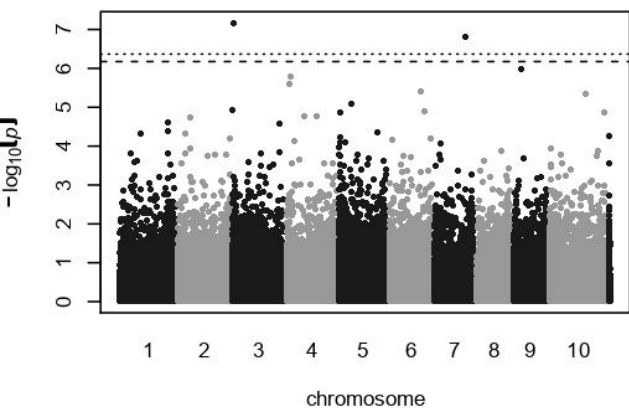
alpha-guaiene* QQ plot (standard MLM)



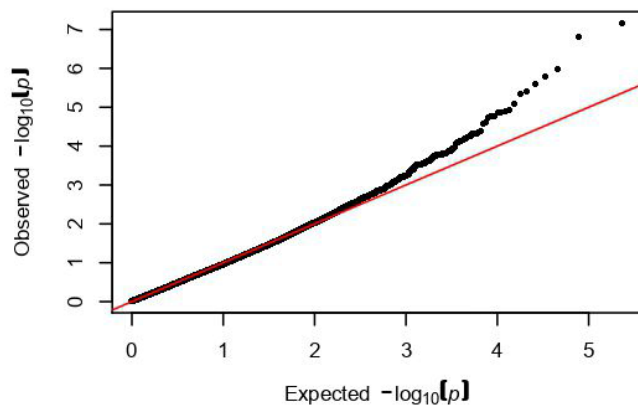
alpha-guaiene* (optimal MLMM)



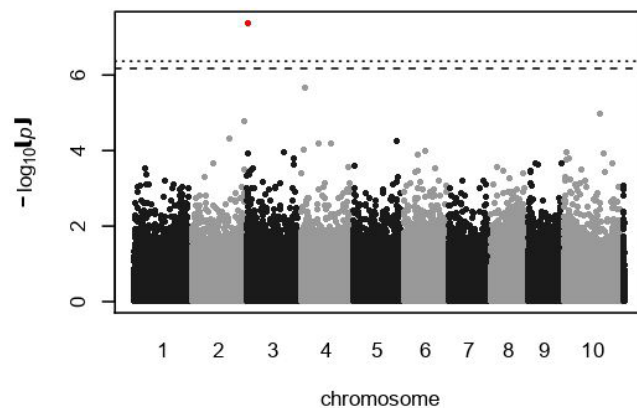
gamma-selinene* (standard MLM)



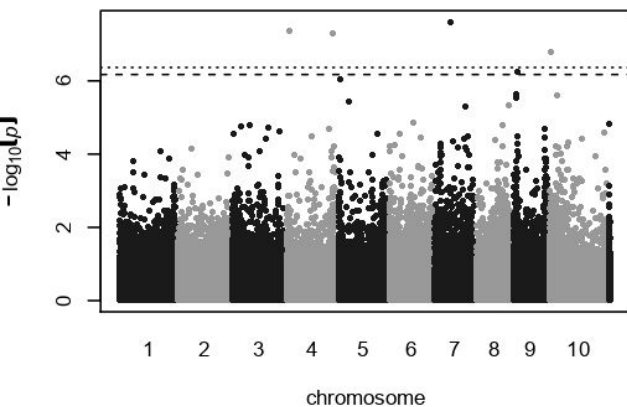
gamma-selinene* QQ plot (standard MLM)



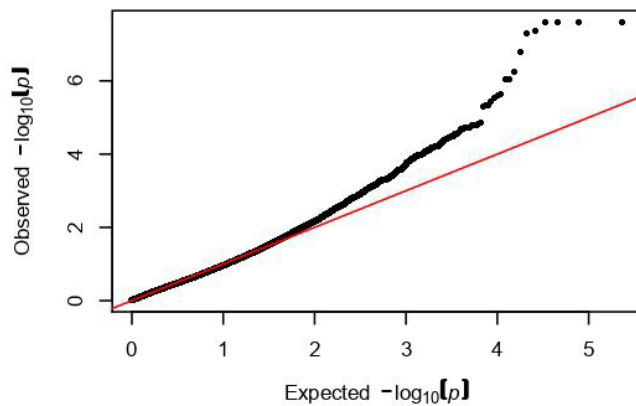
gamma-selinene* (optimal MLMM)



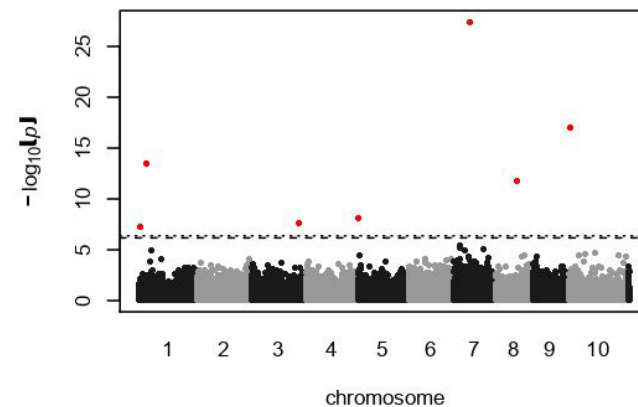
gurjunen* (standard MLM)



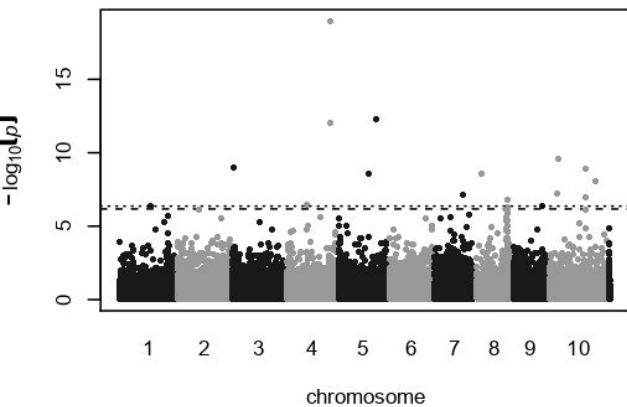
gurjunen* QQ plot (standard MLM)



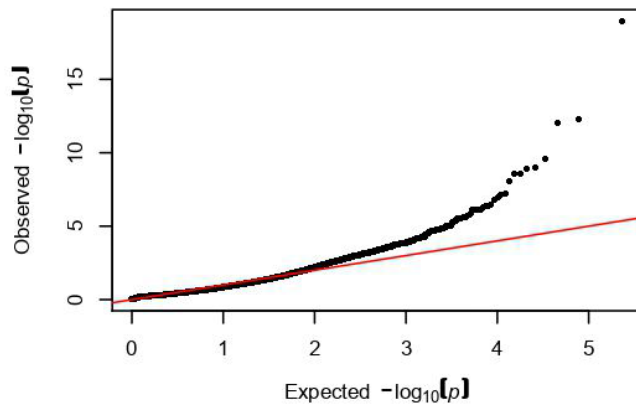
gurjunen* (optimal MLMM)



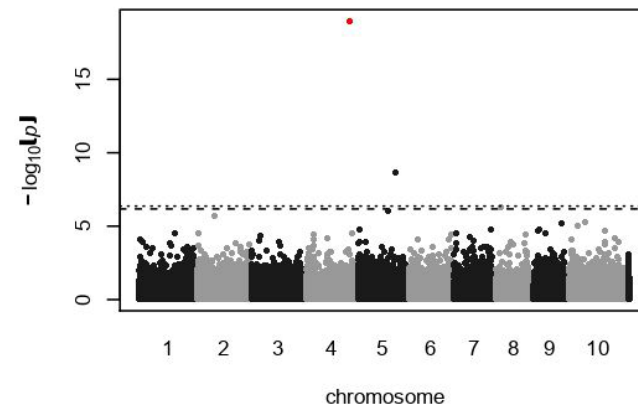
caryophyllene oxide (standard MLM)



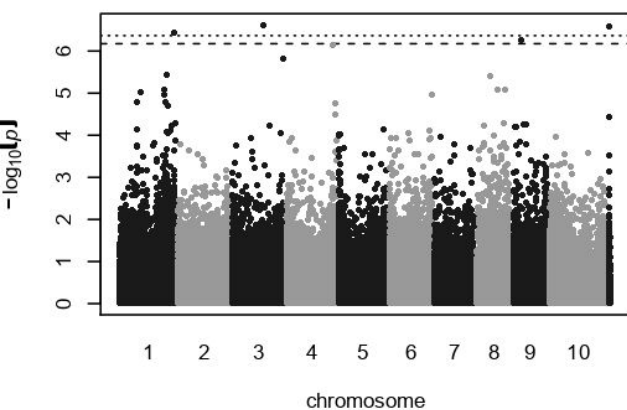
caryophyllene oxide QQ plot (standard MLM)



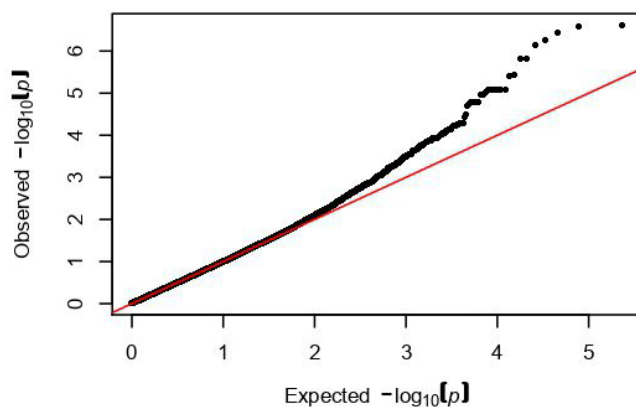
caryophyllene oxide (optimal MLMM)



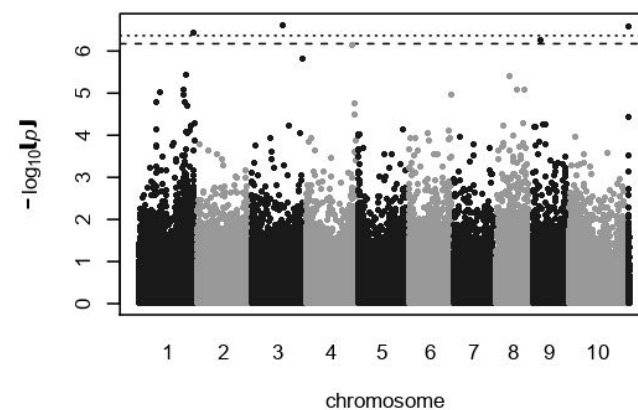
bergamotene* (standard MLM)



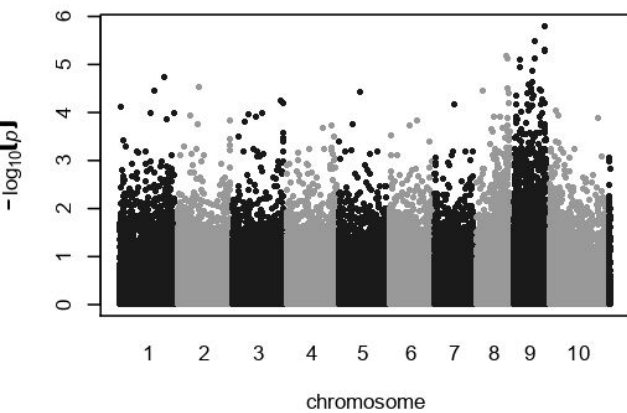
bergamotene* QQ plot (standard MLM)



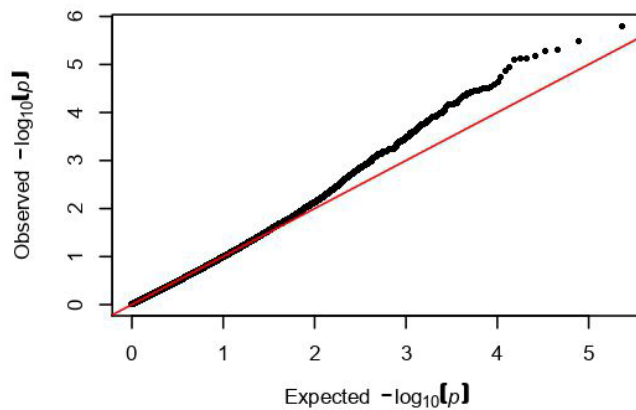
bergamotene* (optimal MLMM)



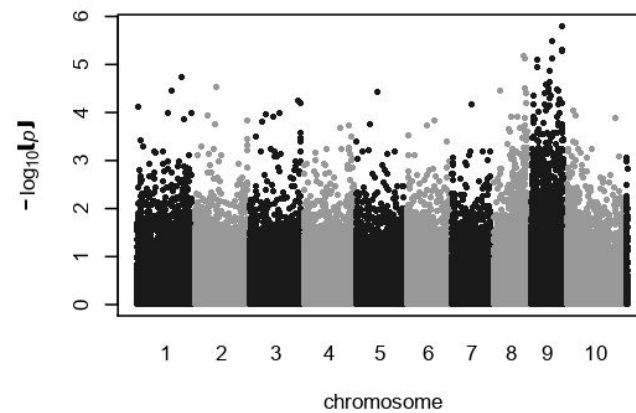
farnesene (standard MLM)



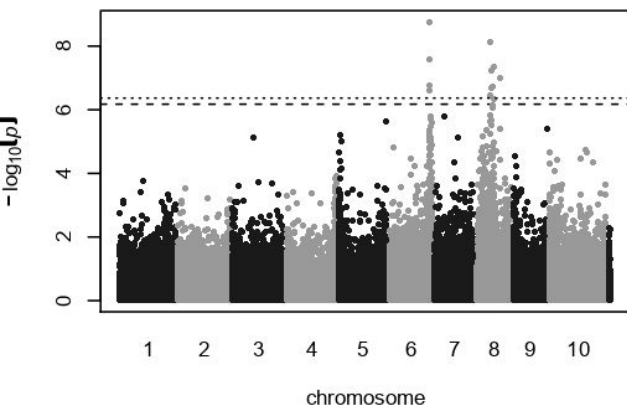
farnesene QQ plot (standard MLM)



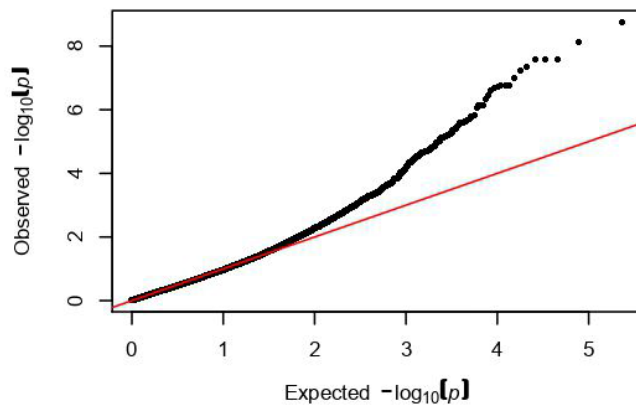
farnesene (optimal MLMM)



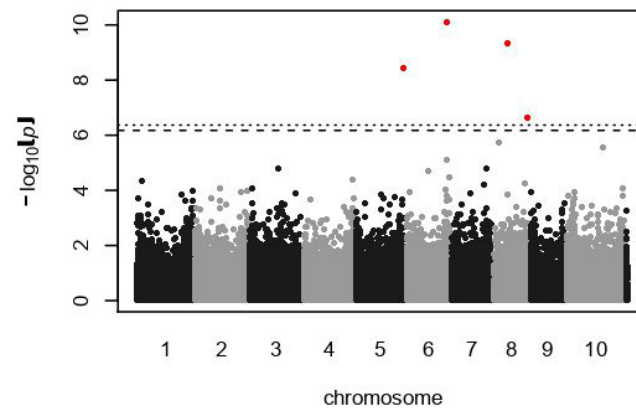
aromadendrene (standard MLM)



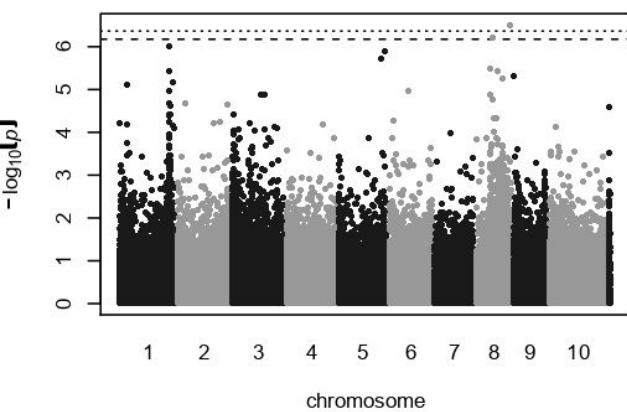
aromadendrene QQ plot (standard MLM)



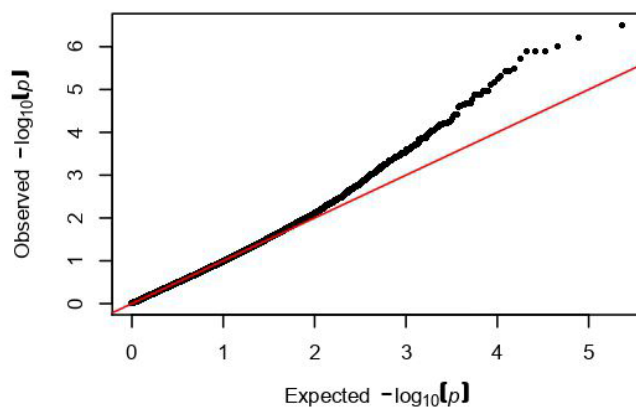
aromadendrene (optimal MLMM)



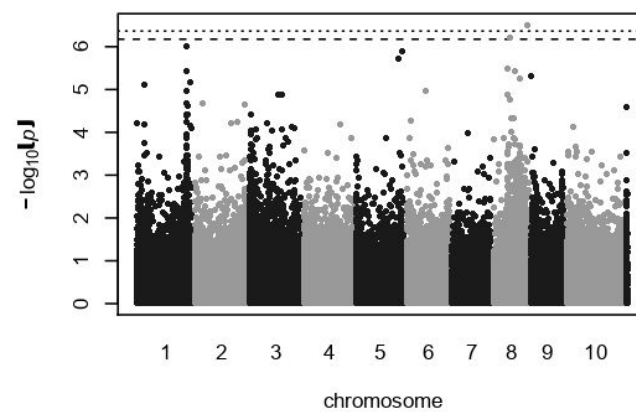
gamma-elemene* (standard MLM)

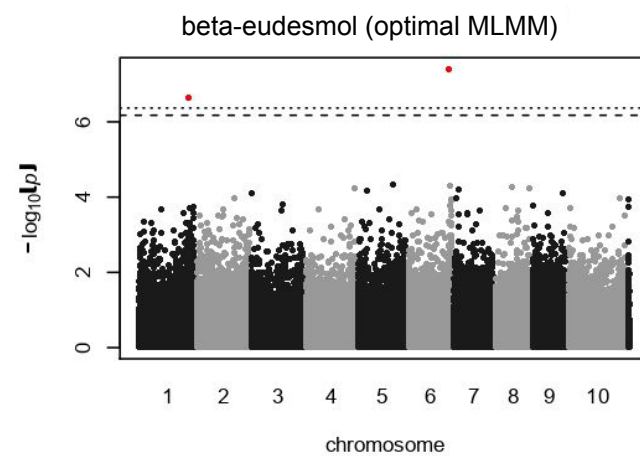
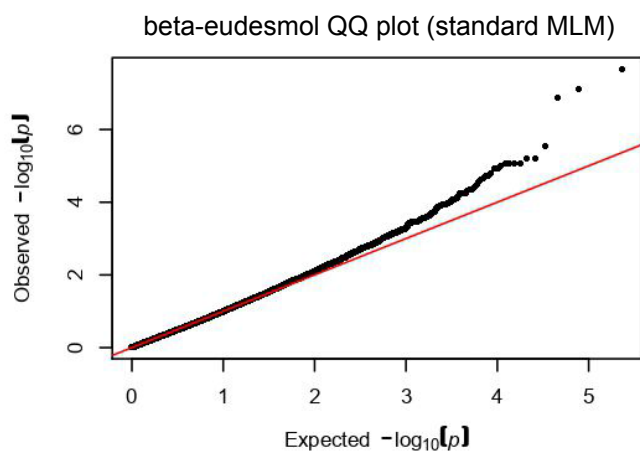
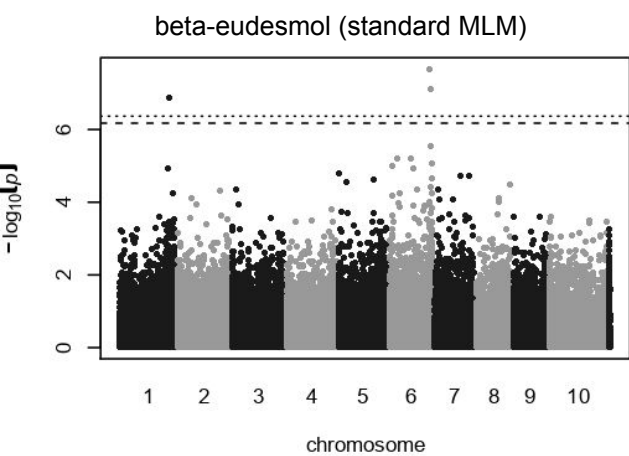
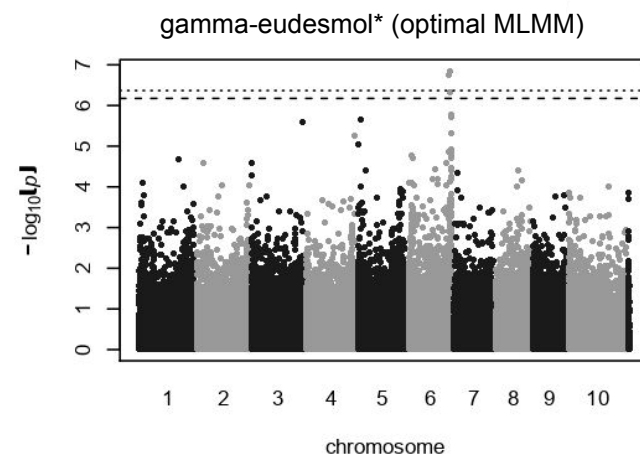
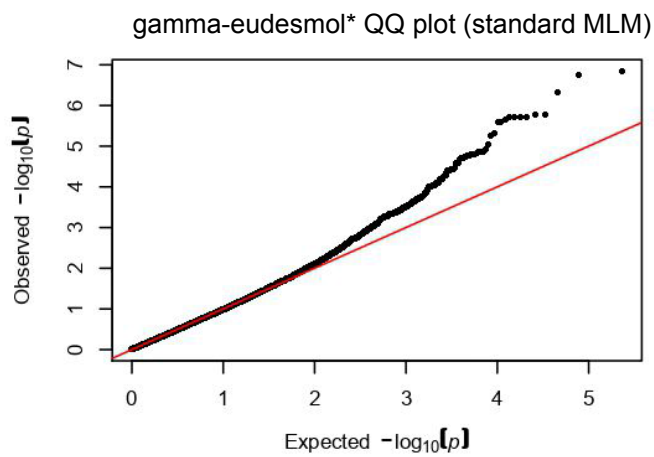
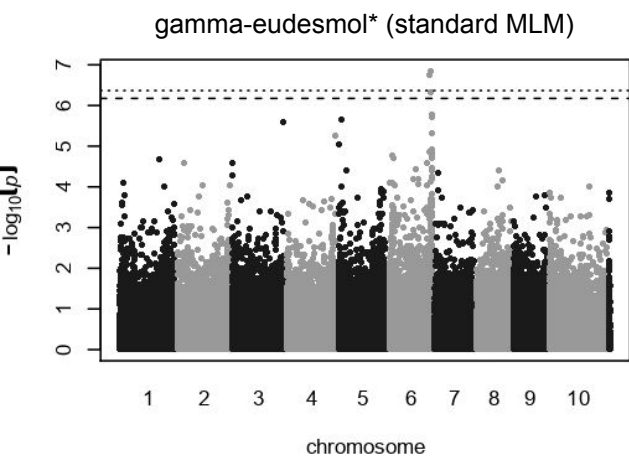
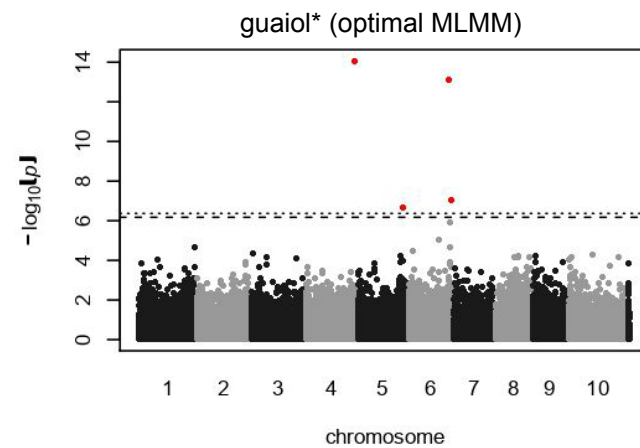
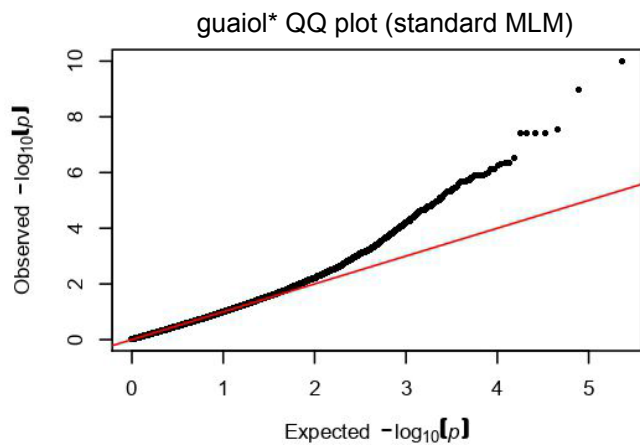
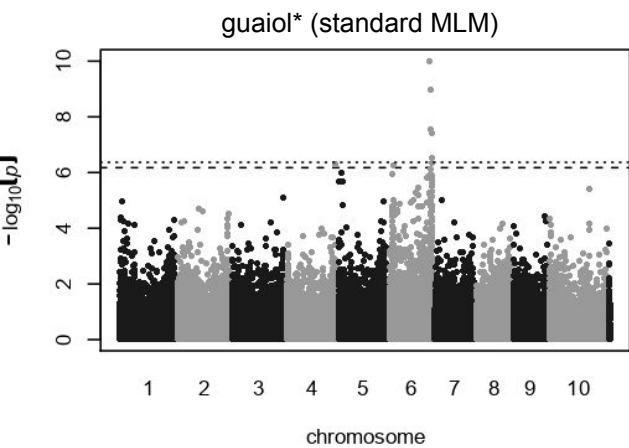


gamma-elemene* QQ plot (standard MLM)

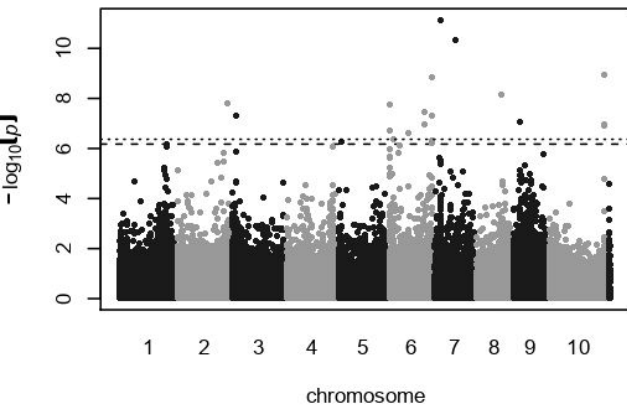


gamma-elemene* (optimal MLMM)

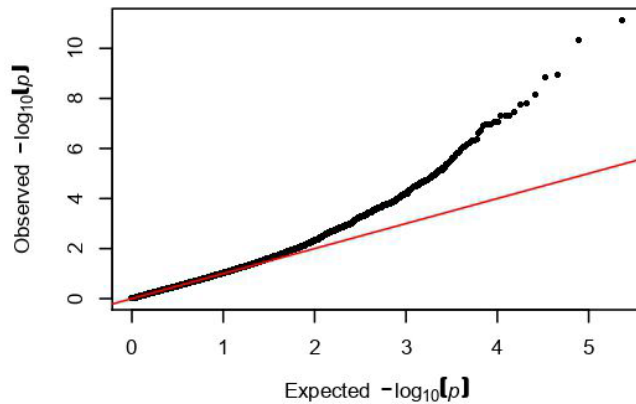




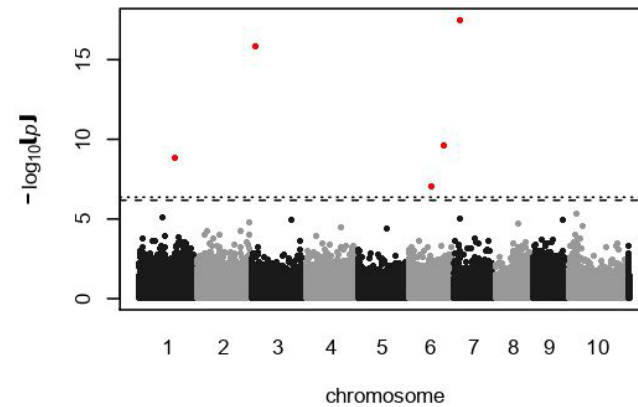
alpha-bisabolol (standard MLM)



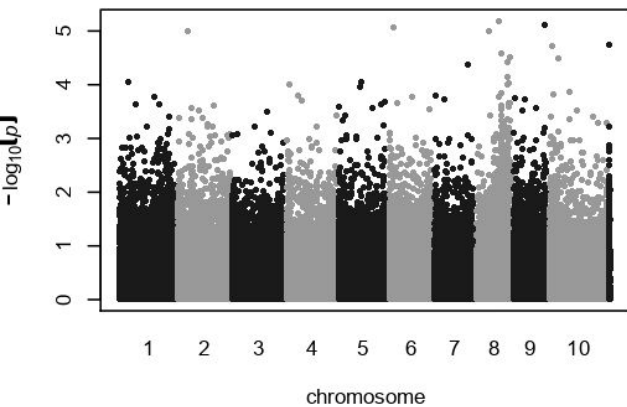
alpha-bisabolol QQ plot (standard MLM)



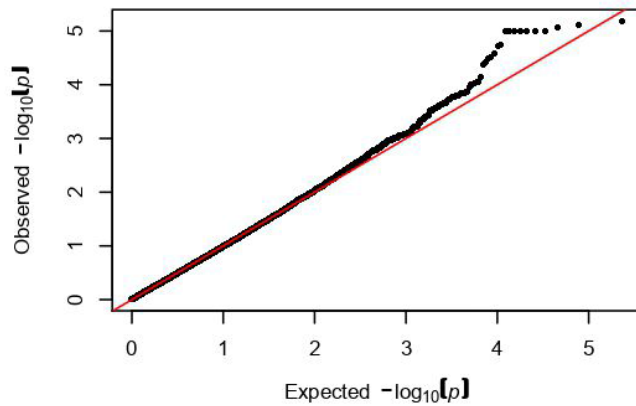
alpha-bisabolol (optimal MLMM)



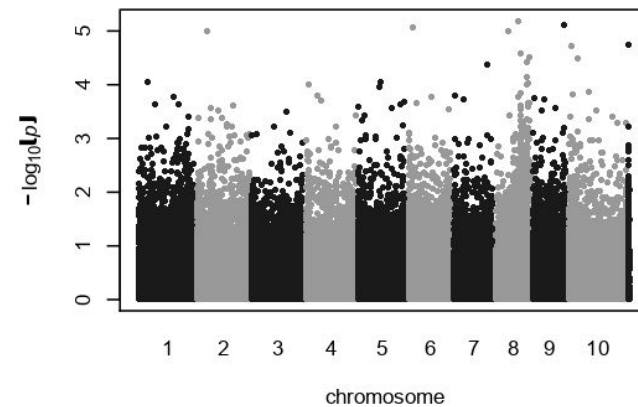
THC (standard MLM)



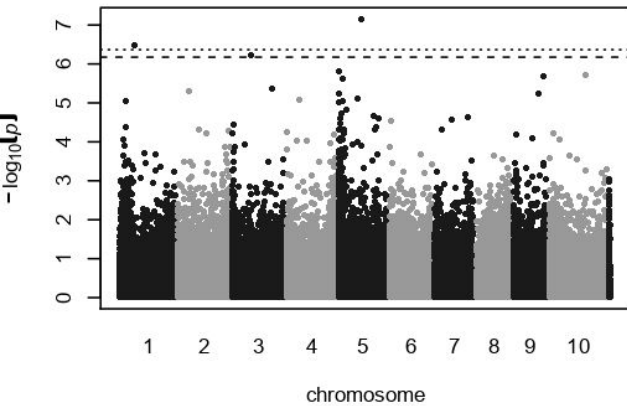
THC QQ plot (standard MLM)



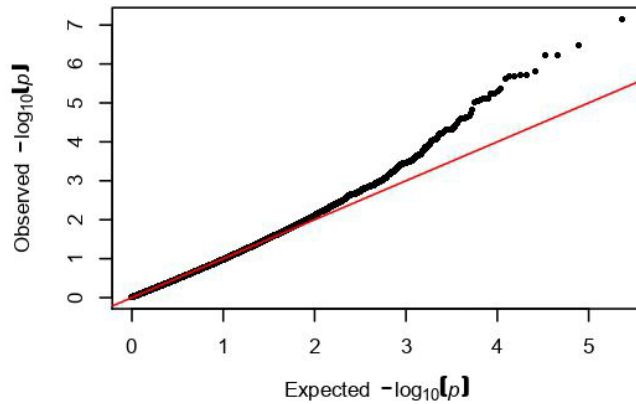
THC (optimal MLMM)



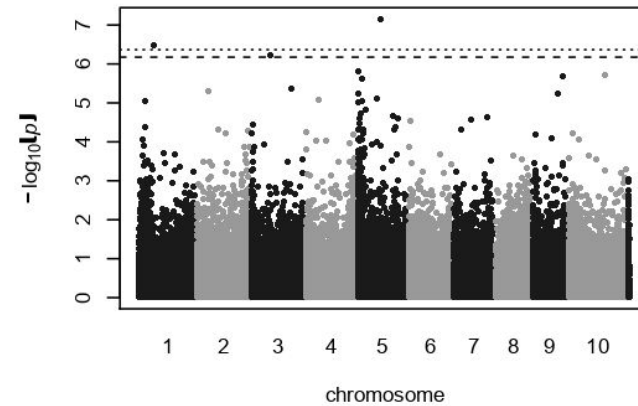
CBG (standard MLM)

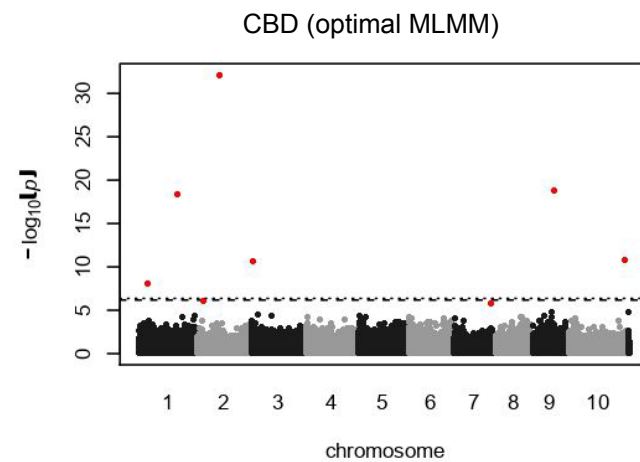
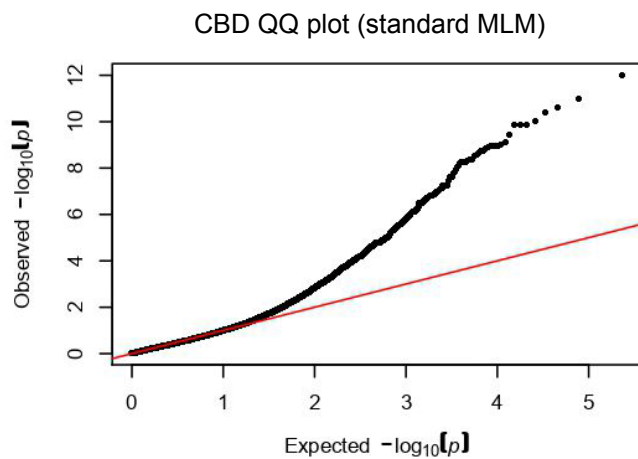
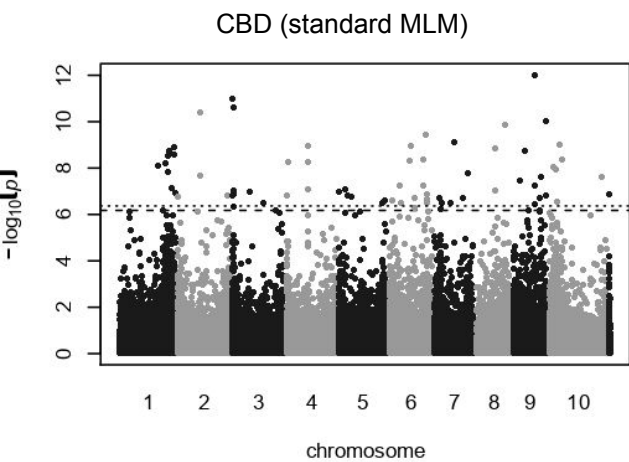
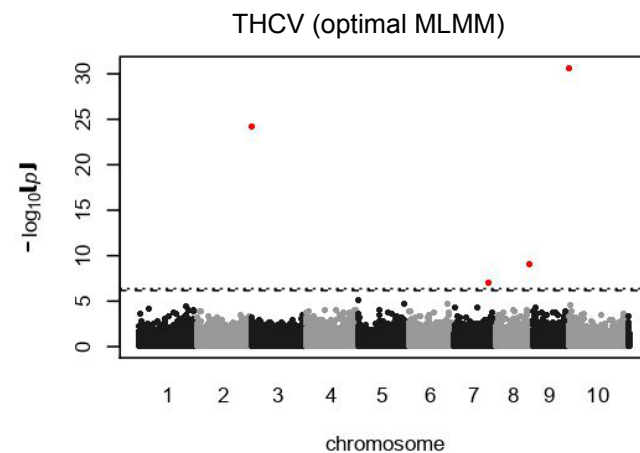
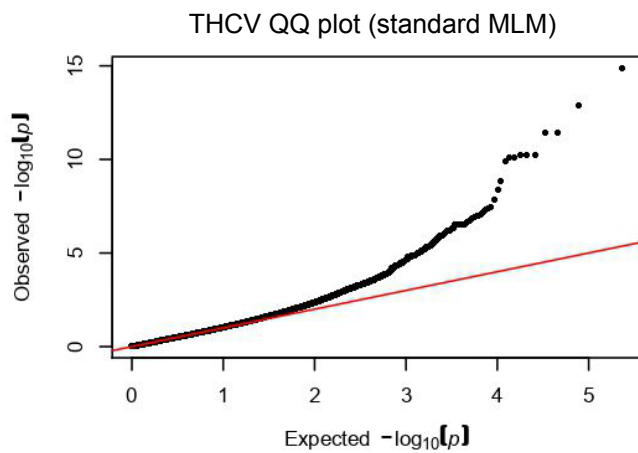
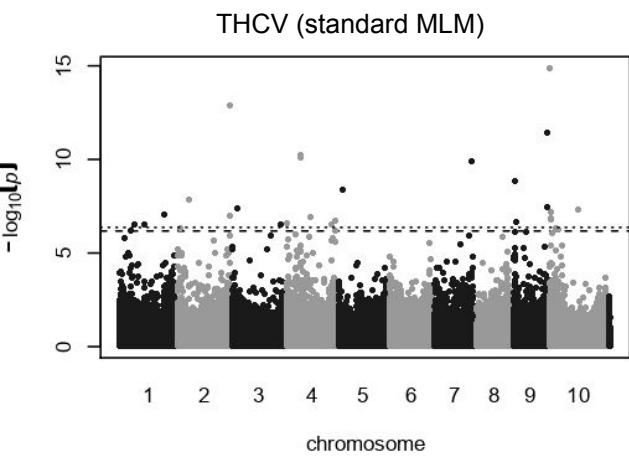
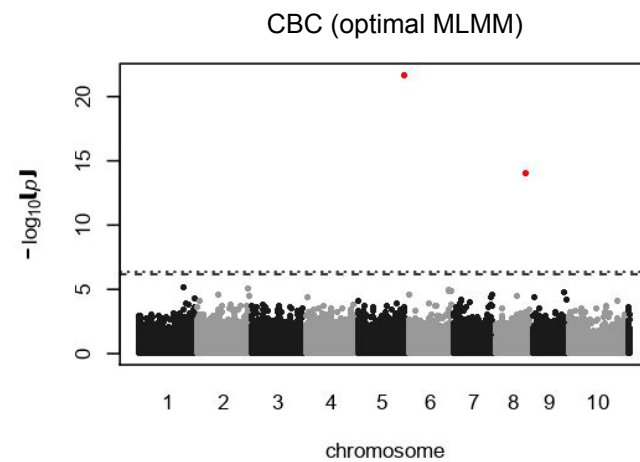
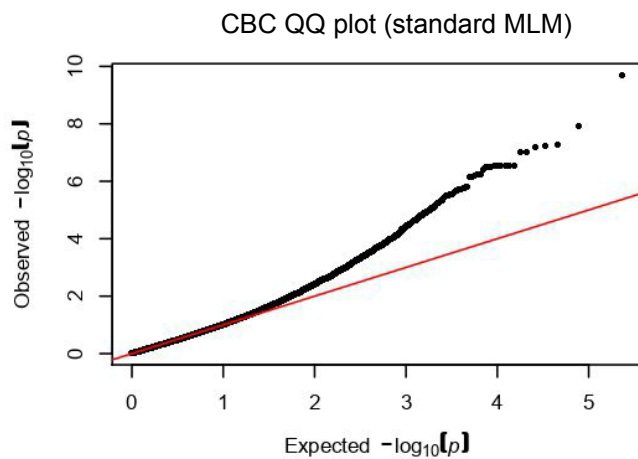
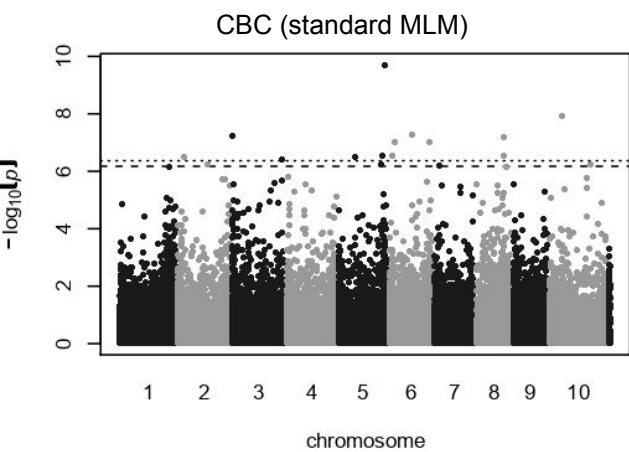


CBG QQ plot (standard MLM)

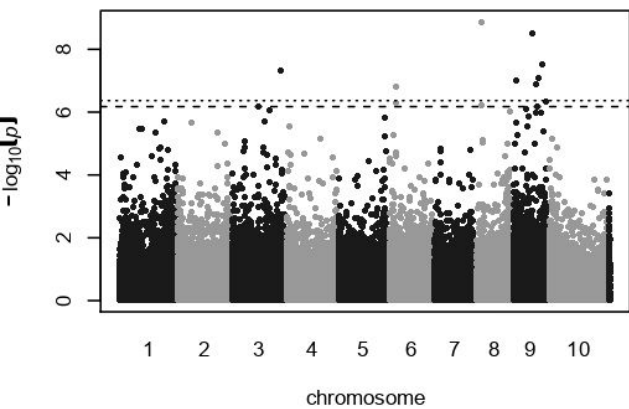


CBG (optimal MLMM)

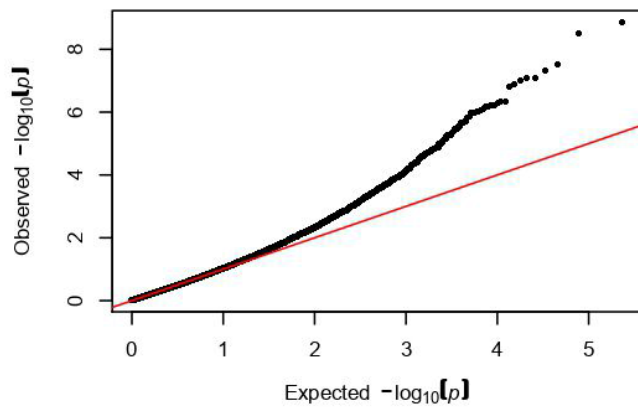




CBGM* (standard MLM)



CBGM* QQ plot (standard MLM)



CBGM* (optimal MLMM)

