

Optimization of oilseed rape straw co-products for bio-alcohol production

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The IBTI Project



Analyse potential straw feedstocks for traits relevant to lignocellulose bio-ethanol production

Explore sequence variation and expression of tens of thousands of genes

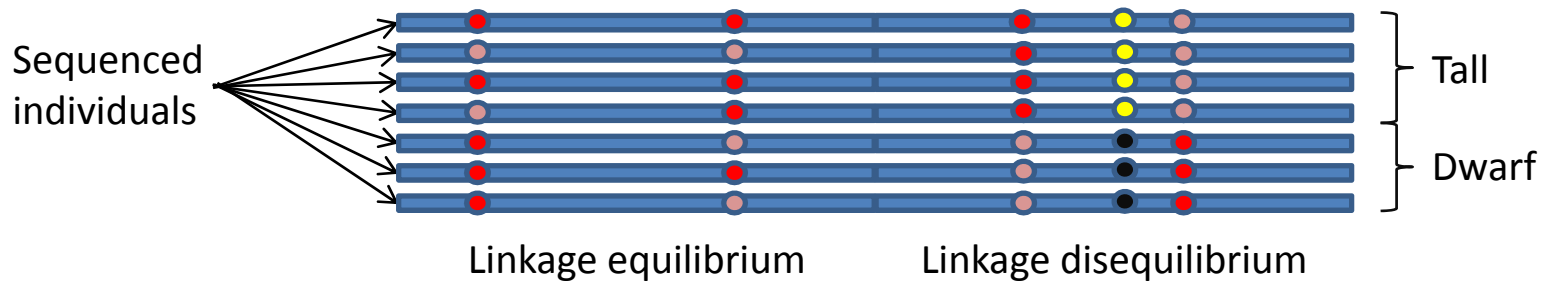
Link genetics to phenotype data using ASSOCIATION MAPPING

Test potential feedstocks in pilot plant system

Provide breeders with markers for Marker Assisted Selection

Association Mapping

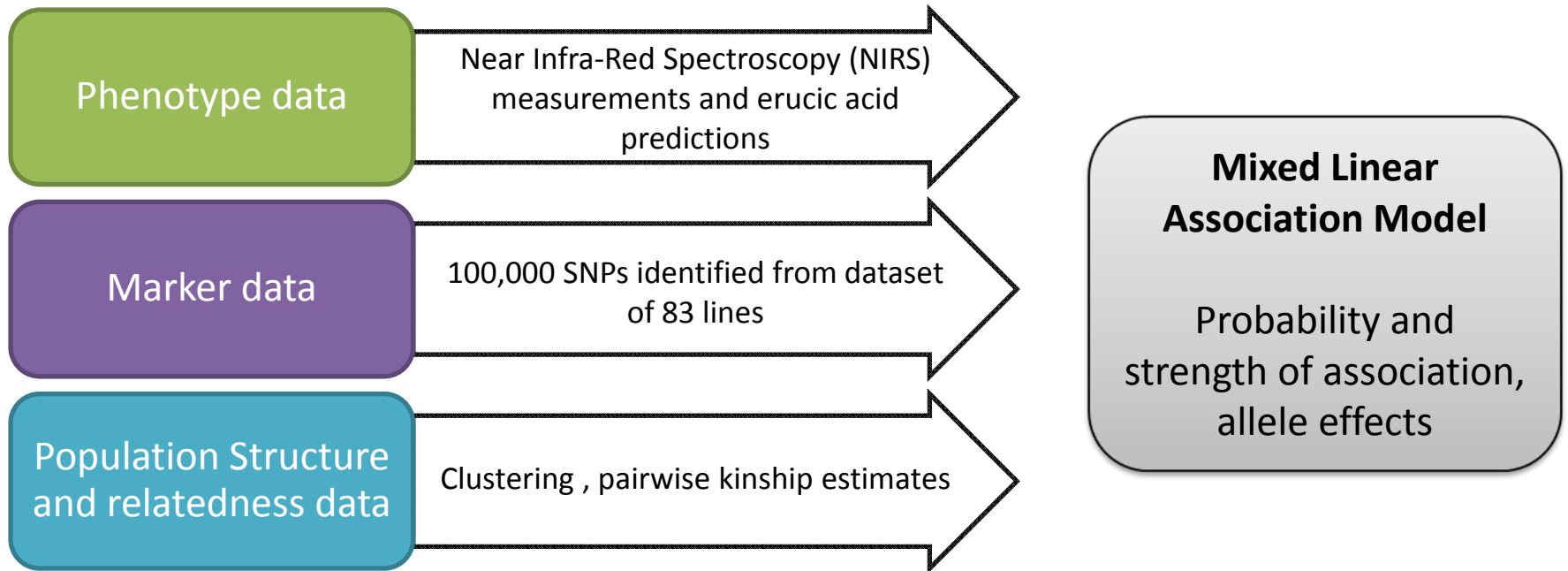
- Also known as Linkage Disequilibrium (LD) Mapping
- Linkage disequilibrium is non random association of genes at different loci



- We can look for markers that are associated with a particular phenotype
- Diverse datasets should provide better resolution and greater flexibility than traditional QTL mapping

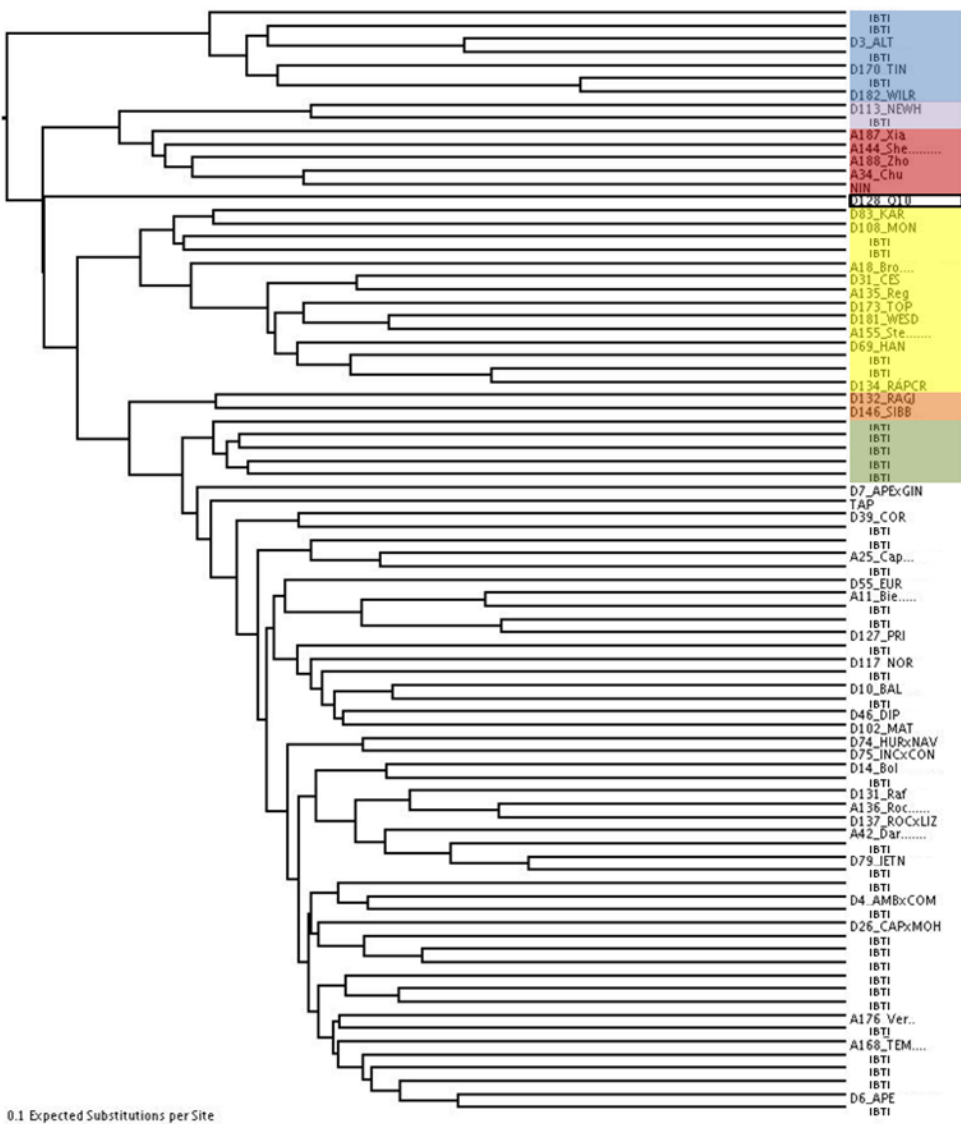
OSR Association Model

Erucic acid Proof of Concept



Clustering

UPGMA



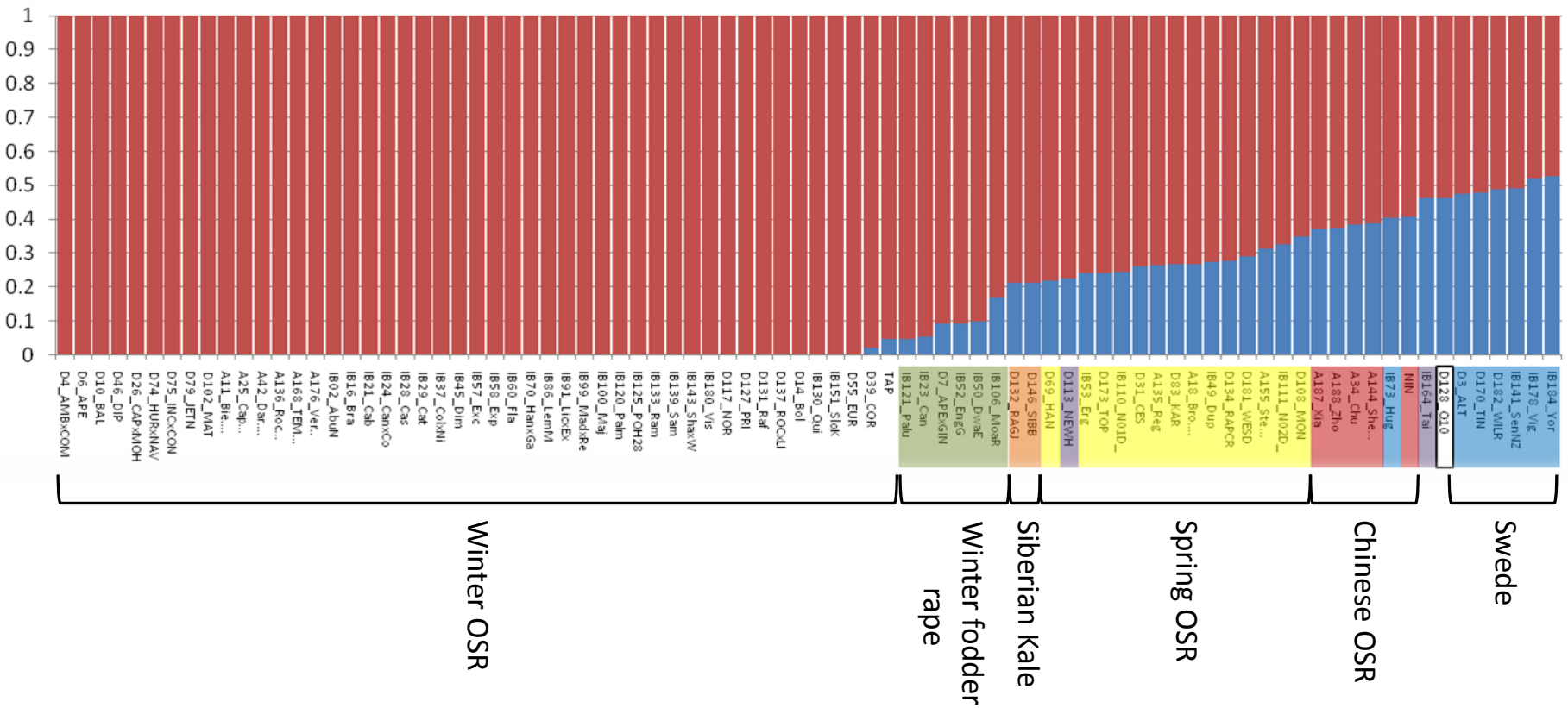
Swede
Japanese Kale
Chinese OSR
Spring OSR
Siberian Kale
Winter Fodder Rape

- 101,644 SNPs
- 83 *B.napus* varieties
- 7 crop types

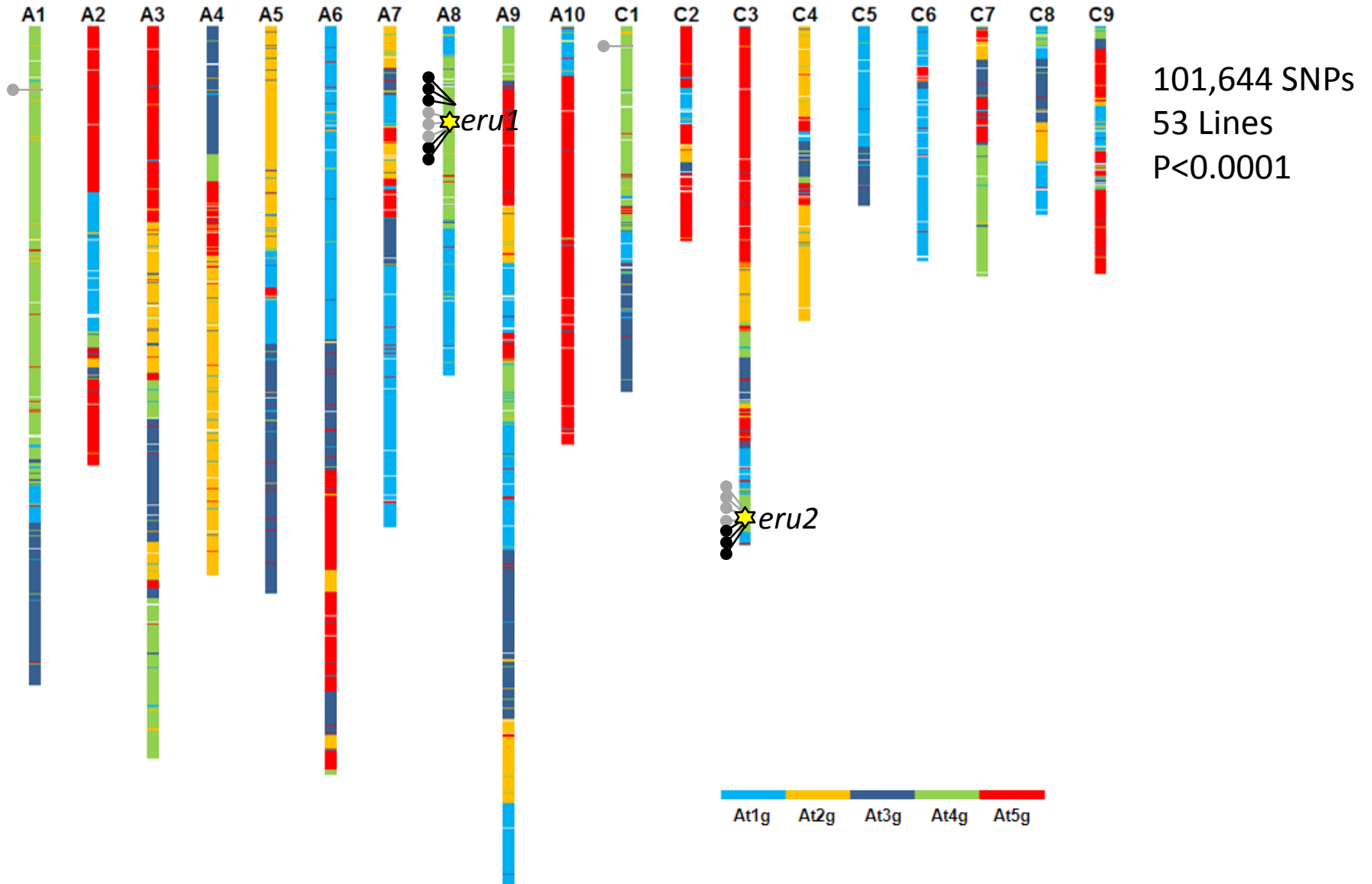
Winter OSR

Clustering

STRUCTURE



Marker positions



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Farm Managers x 17



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