

# SysBioCrops: An R package for Systems Biological Analysis of Complex Plant Genomes

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## Abstract

Current advances in R programming tool has made it the computer programming language of choice for most biostatistical and bioinformatic analysis. To date, there is no comprehensive R package available for analysis of OMICS data, although advances in sequencing and online databases. SysBioCrops is the first R package that compiles existing packages and adds new features to provide user friendly OMICS data analysis tool for the plant breeding community.

**Keywords:** Biological networks, plant breeding, *Brassica napus*, transcriptome, phenome, metabolome, Quantitative Trait Loci

## Protocol:

1. Preprocessing SNP, transcriptome, metabolic and phenome data
2. Integration of the biological networks
3. Image and summary table generation
4. Linkage to online OMICS databases
5. Data mining

## Examples:

### Complex multifunctional gene expression networks influence seedling development and vigor in *Brassica napus*



