GenoMAGIC™

Complete Solution for Analyzing Genomic Big Data of Broad Populations for Diversity Mapping and Mining

While next-generation-sequence data analysis delivers significant benefits in seed R&D, it creates a major challenge to produce, analyze, compare, store, and recall large volumes of genomic data. It's even harder to synchronize the NGS results with existing genomic information built over years of intensive R&D.

NRGene's GenoMAGIC™ provides you with a complete, accurate and cost-effective solution to completely handle and fully benefit from genomic's big data. We deliver a dramatic increase in the efficacy of your breeding efforts. GenoMAGIC™ reconstructs and compares the full genome content of an unlimited number of individual plants and associates genome variability with field performance data. GenoMAGIC™ been proven successful in analyzing most complex and diverse genomes, everything from maize and wheat to forestry and tomatoes.

GenoMAGIC™ is a critical part of highly sophisticated research projects targeting
- Gene discovery
- Genomewide association mapping
- Genomic selection

POWERED BY

NRGene

GenoMAGIC™ delivers

- Full genomic diversity unraveled by comparing thousands of crop genomes

- Organization of genomic diversity into haplotypes for accurate trait mapping GWAS and genomic selection
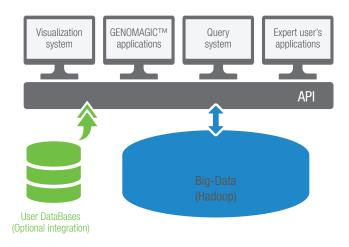
- Correlation of genomic diversity with field data (including historic data) to enhance current breeding effort

- The development of high quality DNA markers for traits of interest, fully adapted to your genomic material

- Synchronizing new and previous genome-based data

GenoMAGIC™, NRGene's cloud-based or locally installed system, integrates with your complete R&D infrastructure to ensure you always have access to every genome you create, be it one or 100 or more. Our API allows for easy connectivity.
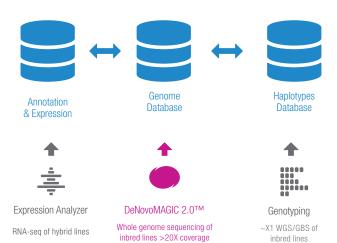
Big data analysis of genomics from NRGene unravels the most challenging and beneficial genetic analyses. We deliver the necessary computational tools to perform high-level analysis without a significant investment in hardware, data, or professional IT staff.

NRGene's value proposition for genomic big data
- Full technology solution (software, database, IT, API)
- Dramatic cost savings
- Fully operational in maize, wheat and other crops
- Low risks (financial, operating, technology)

The tools are already been employed by some of the leading seed companies as well the most influential teams in academics. The genomic tools are offered for license as well as professional services.

Diagram (right side)

GenoMAGIC™

| Visualization system | GENOMAGIC™ applications | Query system | Expert user's applications |

API

User DataBases (Optional integration)

Big-Data (Hadoop)

Annotation & Expression | Genome Database | Haplotypes Database

Expression Analyzer
RNA-seq of hybrid lines

DeNovoMAGIC 2.0™
Whole genome sequencing of inbred lines >20X coverage (PE, MP, long reads, RNA)

Genotyping
~X1 WGS/GBS of inbred lines
>X 0.1 GBS of individuals from segregating populations (DH/RIL/F2/multi-parental)
SNP Arrays data

About NRGene

NRGene is a genomic big data company developing cutting-edge software and algorithms to reveal the complexity and diversity of crop plants for the most advanced, sophisticated breeding. A unique mix of highly experienced algorithm designers, software engineers, plant breeders, and plant geneticists, has developed DeNovoMAGIC 2.0™ and GenoMAGIC™, two ground-breaking computational tools supporting the most sophisticated R&D processes performed by the leading seed companies and academia. NRGene is in Ness Ziona, Israel. www.nrgene.com