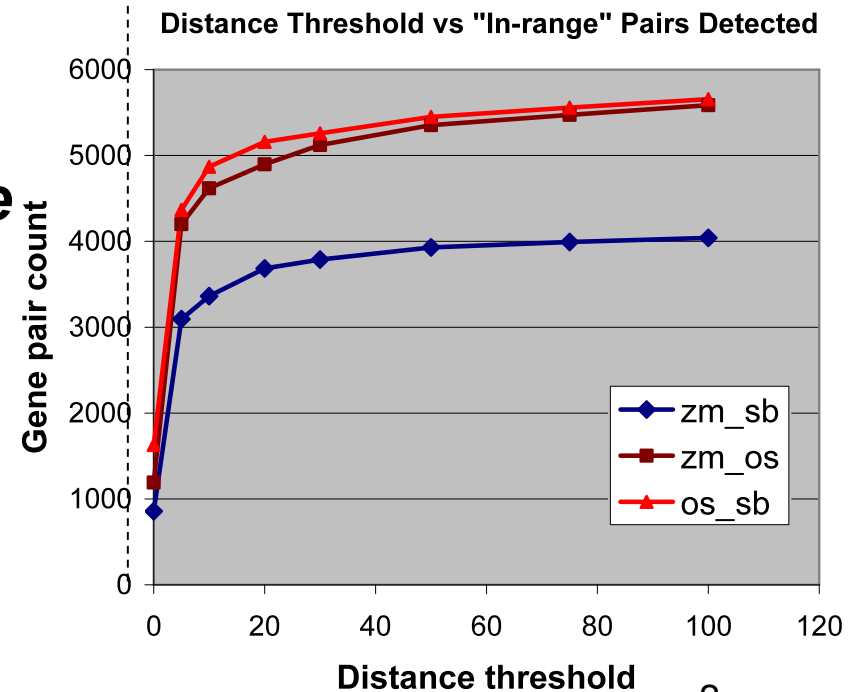
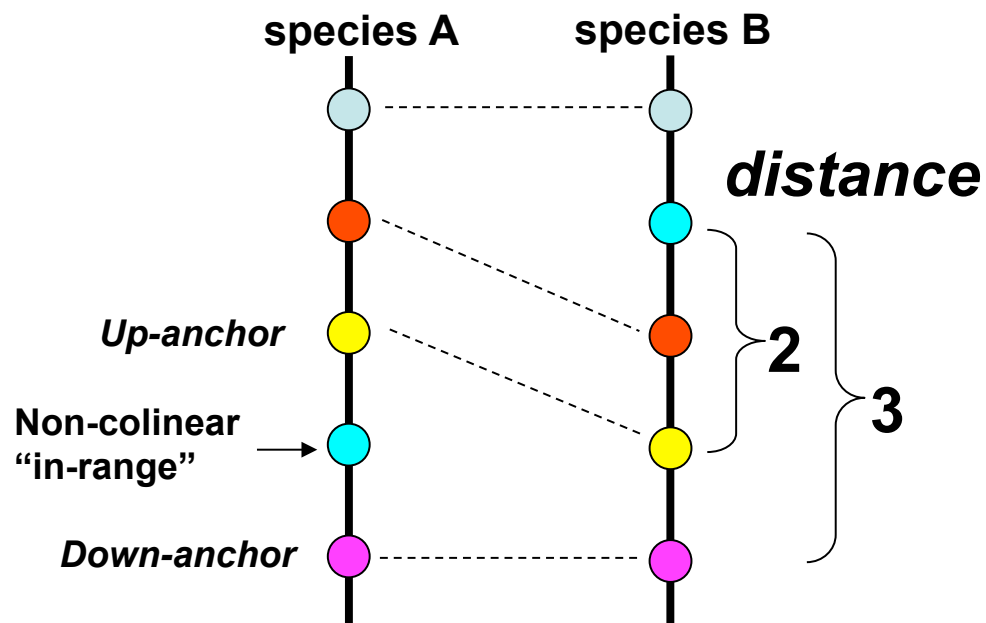


Aim1 Objectives

- Proposal: Evaluate WGA data in reference to gene-level synteny (based on colinear orthologs).
 - Find missing annotations, conserved non-coding, nature of rice “hypothetical” genes, signatures of moved genes.
- Curate incoming genomes with respect to annotation.
 - Develop generic attribute tags to describe low-confidence genes
 - E.g. MSU6 56.7 K loci, 16 K TE, 11 K “hypothetical”

Prior year accomplishment: Synteny Detection Method

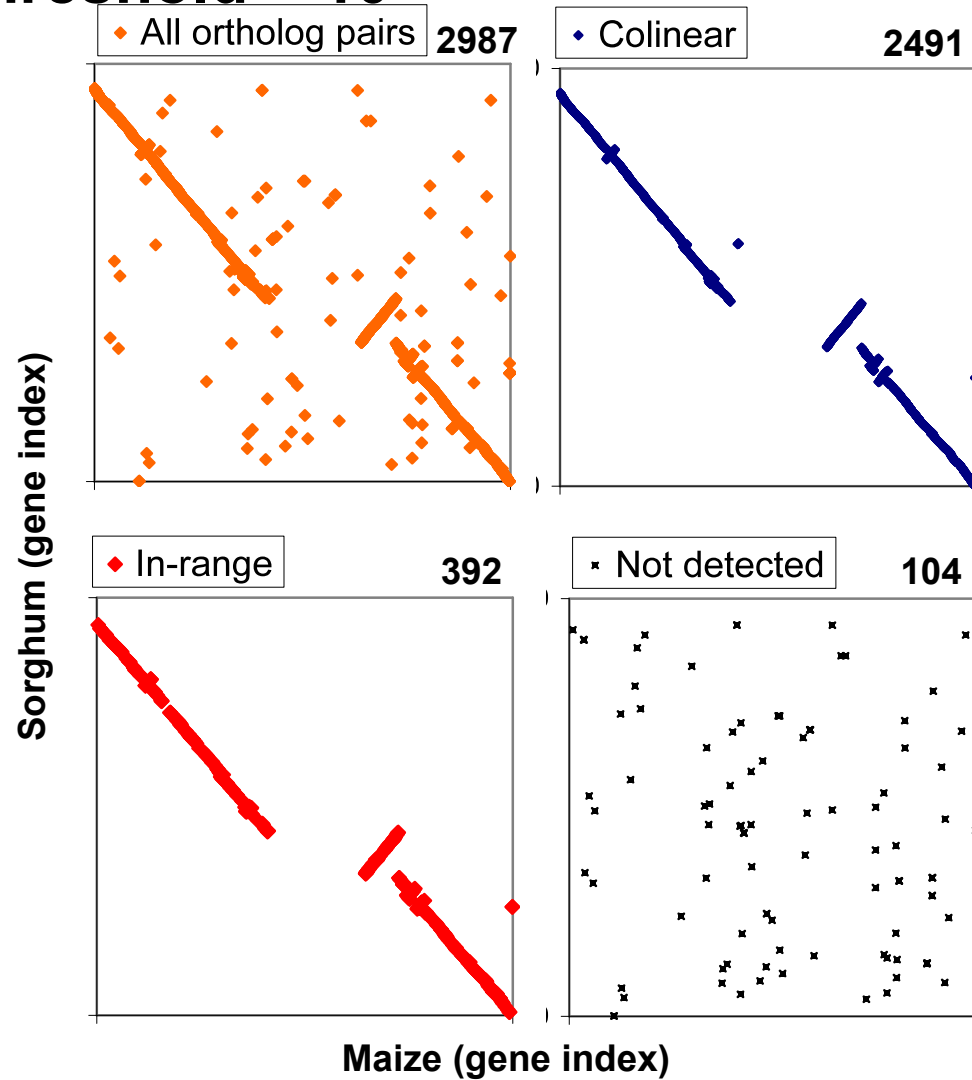
- Method developed for maize (Science paper).
- Reduced to practice as Gramene Runnables and DB by Zhenyuan (Jerry) Lu
- All ortholog pairs (from Compara) => assign numeric order
- DAGchainer* to find colinear chains (minimum length of 5 genes and no more than 10 genes intervening 2 neighbors)
- Add “in-range” pairs based on proximity to nearest colinear anchors



*Haas BJ, et al. [Bioinformatics. 2004 Dec 12;20\(18\):3643-6. Epub 2004 Jul 9.](#)

Example: Maize Chr. 1 vs Sorghum Chr. 1

Distance Threshold = 10



Preconfigured links added to Wheat species page to enter relevant Cmap views

GRAMENE *Triticum*




[Search](#) [Genomes](#) [Species](#) [Download](#) [Resources](#) [About](#) [Help](#) [Feedback](#)

[Species](#) | [Rice](#) | [Maize](#) | **[Wheat](#)** | [Barley](#) | [Oats](#) | [Foxtail Millet](#) | [Pearl Millet](#) | [Rye](#) | [Sorghum](#) | [Wild Rice](#) | [Brachypodium](#)

Triticum Introduction

Triticum Species Page: [Introduction](#) | [Facts](#) | [Anatomy](#) | [Taxonomy](#) | [Agronomic Statistics](#) | [Research](#) | [Education](#) | [Nutrition](#) | [Recipes](#) | [News](#) | [Germplasm Resources](#) | [Gramene Statistics](#) | [Gramene Queries](#)

NEW [Aegilops tauschii \(D genome\) resources](#)

Leaf 1 emerges at soil level. Young wheat.
Photo courtesy of: [Wheat:The Big Picture](#)

Wheat starting to turn in Minnesota.
Photo courtesy USDA Image court
Photo by: Jeff Vanuga

Close up rip in Minnesota.
Photo by un

Grown all over the world, wheat covers more of the earth's surface than any other cereal crop (1, 7, 16). However, although on average it is only the third-largest cereal crop, behind maize and rice (16). The domestication of grains and the development of encouraging permanent settlements, the development of civilization, and trade (7, 8). Wheat's domestication produced the wild and required continued intervention of farmers intentionally planting it.

Soft Wheat

As 11, unt

By dev

Soft red winter wheat has a low to medium protein content, and is used for domestication of crops and animals as flat breads, and crackers. (5, 6)

Soft white wheat is a low protein wheat, but offers high yields to growers. Being a common staple from Europe (bakery products other than breads), and is ideally suited to Middle Eastern Europe, the middle east and west

Aegilops tauschii comparative views

- [Map 1D to rice chr 5 & 10](#)
- [Map 2D to rice chr 4 & 7](#)
- [Map 3D to rice chr 1](#)
- [Map 4D to rice chr 3 & 11](#)
- [Map 6D to rice chr 2](#)
- [Map 7D to rice chr 6 & 8](#)

GRAMENE *CMap*

[Search](#) [Genomes](#) [Species](#) [Download](#) [Resources](#) [A](#)

[CMap Home](#) | [Maps](#) | [Map Search](#) | [Feature Search](#) | [Matrix](#) | [Map Sets](#) | [Feature Type](#)

Comparative japonica rice
Rice japonica MSU6

Chr. 4 [13561]

BE484829
BE471132
BE518440
BE404384
BE403506
BE405045
B0606625
B0161196
BE604861
BE490204
BE499362
BE403847
BF145580
BE403597
B0274019
BF475066
BE404384
BE444264
B0313502
BM140576
BE499763
BF201830
BE423182
BE499267
B0161465
BE444599
BE445431
BE426620
BF483221
B0172173

Reference
Aegilops tauschii
Dvorak

Chr. 4 [13561]

BE471132
BE518440
BE500206
BE497494
BE445628
BE499478
BE499671
BE498730
BF202681
BE471274
BE471274
BE498640
B0169707
BE497590
B0263521
BE590745
BF291674
BE404332
BE517627
BE442608
BE591248
BE517627.1
BE405045
BE403506
B0606625
B0274019
BE444264
B0169383
B0313502
BE423182
BE490267
B0161465
BE517946
BF483221

Comparative japonica rice
Rice japonica MSU6

Chr. 7 [11884]

BE500206
BF428792
BE497494
BE445628
BE499478
BE499671
BE498730
BF202681
BE471274
BE498640
B0169707
BE404601
B0313656
B0263521
BF473854
BE590745
BF291674
BE517946
BE489611
BE497955
B0169383
B0313350
BE404332
BE446789
BE442608
CD452951
BE497590
BE591248

Feature Types:

- EST
- EST Cluster
- Genomic DNA
- GSS
- mRNA
- OVERGO
- RFLP
- SSR
- Gene Prediction

Missing Links: Find Genes and Variation Data for wheat Via Rice Synteny

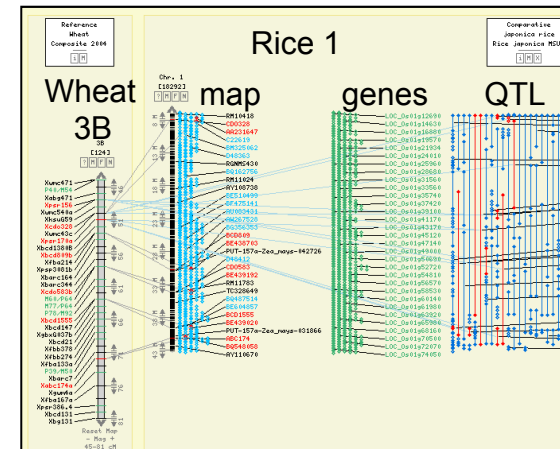
Genetic interval of interest

***Need links to facilitate
SNP Markers***

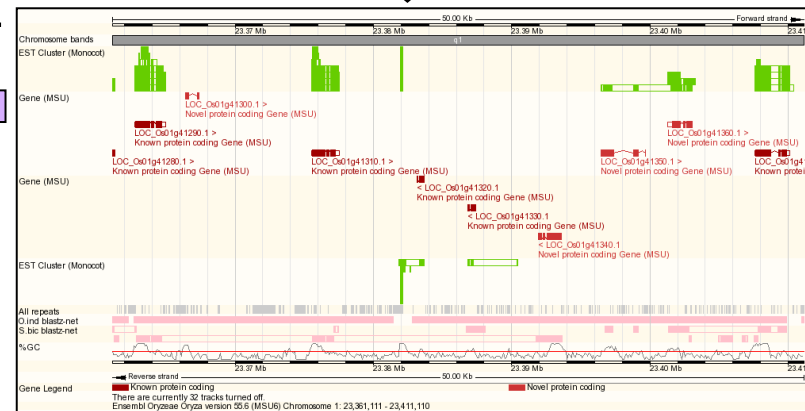
Items 1 to 25 of 44. Page 1 of 2 | Next
[Download]

Germplasm Accession Name	Germplasm Accession Number	Subsp. & subtaxa	Country of Origin	Stock Number	Locus name	Genotype	View All Genotypes on Germplasm
Sn32	E.R. Sears	Unknown		1	BE497740_187-3D	c	View all "Sn32" genotypes
Sn32	E.R. Sears	Unknown		1	BE497740_187-3D	-----	View all "Sn32" genotypes
CIMMYT 161725_0	CIMMYT	Mexico		1	BE497740_187-3D	T	View all "CIMMYT 161725_0" genotypes
CIMMYT 161725_0	CIMMYT	Mexico		1	BE497740_187-3D	-----	View all "CIMMYT 161725_0" genotypes
CIMMYT 62056_4	CIMMYT	Mexico		1	BE497740_187-3D	T	View all "CIMMYT 62056_4" genotypes
CIMMYT 62056_4	CIMMYT	Mexico		1	BE497740_187-3D	-----	View all "CIMMYT 62056_4" genotypes
CIMMYT 62052_4	CIMMYT	Mexico		1	BE497740_187-3D	c	View all "CIMMYT 62052_4" genotypes
CIMMYT 62052_4	CIMMYT	Mexico		1	BE497740_187-3D	-----	View all "CIMMYT 62052_4" genotypes

Wheat EST



Rice Browser



- http://www.gramene.org/db/cmap/viewer?data_source=Build30;session_id=3c705f187ed4d10d254897703ea7463b;step=6;session_mod=start=1=grj p2009a-1=7000000;
- http://www.gramene.org/Oryza_sativa/Location/View?r=1:23361111-23411110;time=1262729945075.075
- http://www.gramene.org/db/diversity/diversity_view?action=show_allele_data&div_experiment_id=1&cdv_marker_id=24&db_name=diversity_wheat