



The US Wheat and Barley Scab Initiative Web Site

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Abstract

The US Wheat and Barley Scab Initiative (USWBSI) web site (<http://www.scabusa.org>) is an integral part of the USWBSI. The site is an important information resource for all aspects of the Initiative, including Research, News, Forums, and Literature. The site includes an online searchable database containing detailed information on all Projects, Grants, Institutions, Documents, Committees, and Contacts associated with the Initiative. Maintenance of the web site involves database development, web programming, and system administration. Each section of the web site is constantly being improved and expanded. Some key goals for improvement of the site are to enhance the Research section (results, methods, online informatics resources, etc.), and to facilitate communication among Initiative members, Scab researchers, wheat/barley breeders and growers, and others affected by Scab. Another key goal is to integrate the USWBSI web site more closely with GrainGenes (<http://wheat.pw.usda.gov>), an online database of molecular and phenotypic information for the Triticeae. This poster provides an overview of the USWBSI web site, solicits ideas and suggestions for future improvements to the site, and addresses the use of the GrainGenes web site as a resource for Scab research.

The USWBSI Web Server

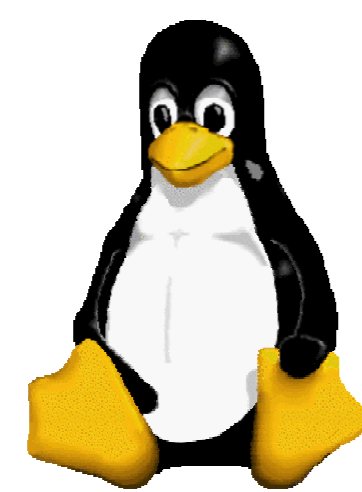


Hardware

The USWBSI server computer is located in Albany, California at the Western Regional Research Center of the USDA-ARS. It consists of an Intel SR2200 server chassis containing an Intel SCB2 server mainboard. The system has dual Pentium III processors operating at 1.3 Ghz, 1GB SDRAM, six hot-swappable 18GB Ultra160 SCSI hard drives in a RAID5 configuration, dual power supplies, and a powerful UPS unit, providing sustained redundant power.

Software

The server runs the free GNU/Linux operating system, and other open source software, including the Apache HTTP server, the sendmail mail transport agent, the mailman mailing list manager, the MySQL Relational Database Management System (RDBMS), and others. The use of open source software provides greater reliability, adherence to open standards, reduced cost, and reduced exposure to security vulnerabilities (such as worms and viruses).



Administration

The responsible maintenance of any internet server involves many routine administrative tasks, including:

- * monitoring and patching security vulnerabilities
- * intrusion detection and recovery
- * file integrity monitoring
- * data backup, storage, and restoration
- * performance optimization
- * monitoring and logging of server facilities (web, e-mail, database, etc.)
- * operating system and software updates



URLs

USWBSI: <http://www.scabusa.org>
GrainGenes: <http://wheat.pw.usda.gov>
This Poster: http://www.scabusa.org/pdfs/forum03_poster_ddh.pdf

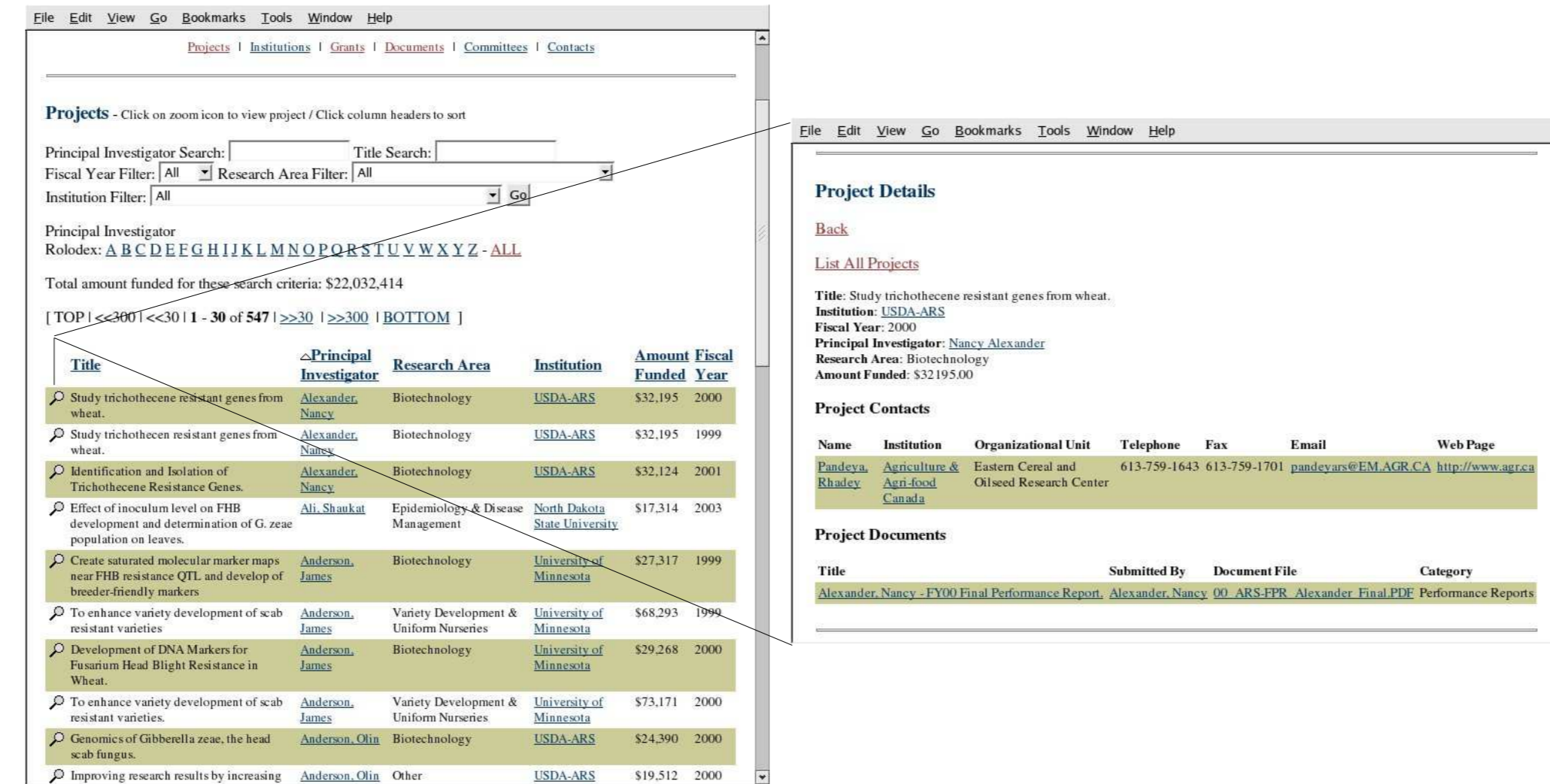
References

Shi, J. et al. Proceedings of the National Fusarium Head Blight Forum: 40 (2002)
Somers, D. et al, Genome 46: 555-564 (2003)

The USWBSI Database

The USWBSI database is a web-enabled searchable database, powered by the MySQL RDBMS, containing information on Projects, Institutions, Grants, Documents, Committees, and Contacts relevant to the Initiative. The information, presented in a tabular format, can be searched and filtered in a context-dependent manner, and can be rapidly browsed and sorted. Details of specific records can be viewed by clicking the icon.

This database is the best way to quickly obtain administrative information pertaining to the Initiative.



Future Improvements

There are several areas in which we are seeking to improve to the web site:

- * Enhance the Research section (<http://www.scabusa.org/research.html>)
 - Incorporate research methods and results
 - Develop informatics web resources
- * Integrate with GrainGenes
 - Provide direct links to specific GrainGenes resources
 - Develop custom interfaces for useful GrainGenes queries
- * Facilitate Communication
 - Increase use of online collaboration tools
 - mailing lists and/or discussion boards
 - Expand content and functionality of the USWBSI Database

We are encouraging everyone to **submit suggestions and ideas** on ways to implement the proposed improvements, as well as general suggestions on ways the web site can be improved. It is the Scab community (USWBSI members and forum attendees, Scab researchers, wheat and barley breeders and growers, etc.) that will be using the resources provided on the USWBSI web site. Thus the usefulness and success of the web site depends on quality feedback from this community.

To submit suggestions, or if you would like to see specific content or functionality on the web site, please don't hesitate to contact:

Sue Canty (517-355-2236, scabusa@scabusa.org)
David Hummel (510-559-6026, hummel@pw.usda.gov)

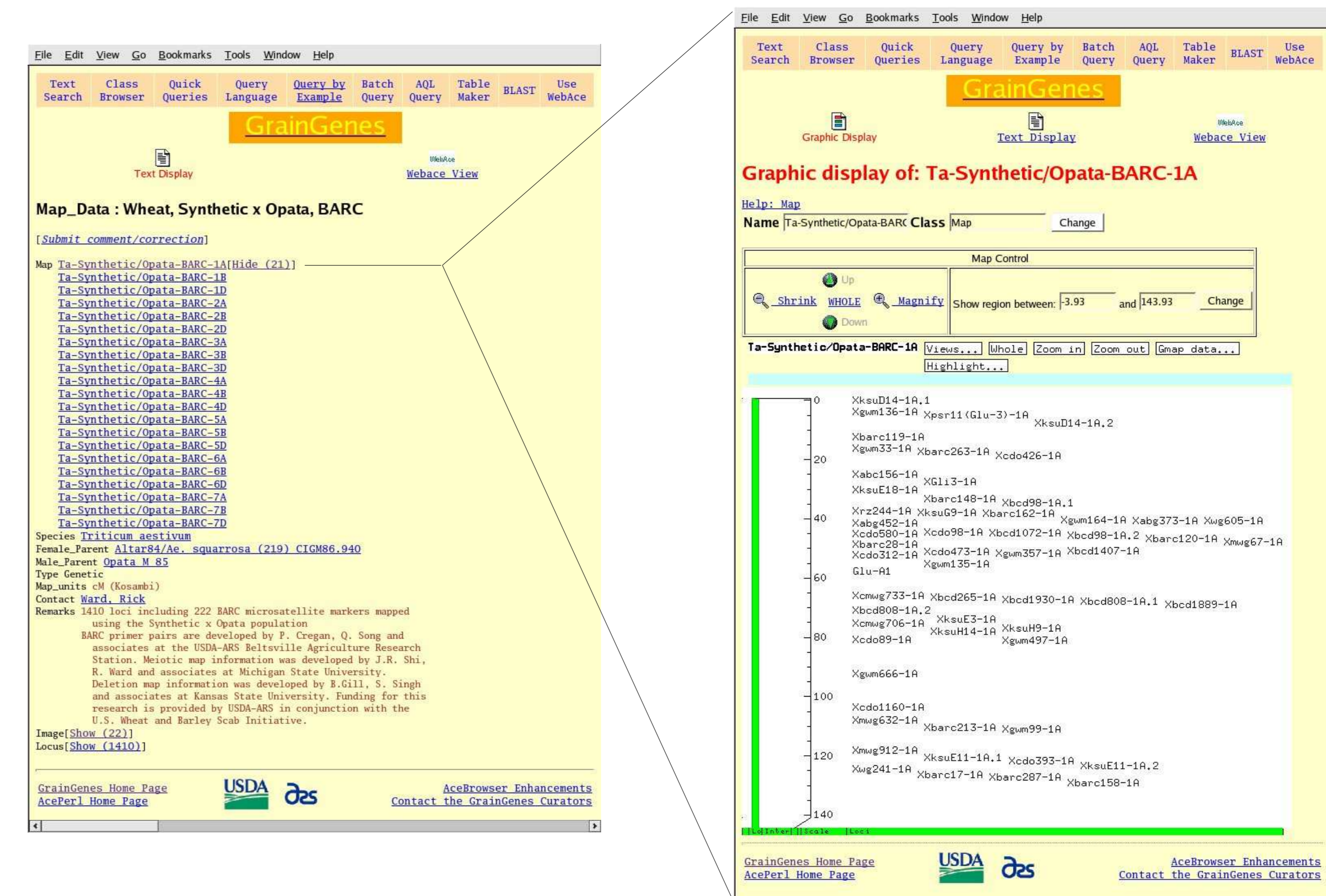
When submitting suggestions, it is helpful to be as specific as possible regarding appearance, behavior, content, functionality, etc. This insures that any changes or additions to the web site will be as useful as possible.

GrainGenes and the USWBSI

GrainGenes is a database of molecular and phenotypic information for the Triticeae, and is thus a potentially useful resource for Scab research. One of our goals is to provide better integration of the USWBSI web site with GrainGenes, therefore exploiting aspects of GrainGenes that are useful to Scab researchers. Two newly added sets of mapping data in GrainGenes are presented to illustrate this. Links to these GrainGenes pages are provided on the USWBSI homepage, and on the Biotechnology Research Area page.

Wheat BARC SSR Maps

Wheat BARC microsatellite (SSR) map data (Shi, J. et al) was recently loaded into the GrainGenes database. The data is accessible via the "Wheat, Synthetic x Opata, BARC" object in the Map_Data class. Clicking on an individual chromosome map displays the interactive map.



Wheat QTL Maps for Scab Resistance

Wheat QTL map data (Somers, D. et al) was recently loaded into the GrainGenes database. The data is accessible via the "Wheat reaction to head scab" object in the Trait class, the "FHB, Single Floret Injection, Somers03" object or the "FHB, Field Resistance, Somers03" object in the Trait_Study class, and the "Wheat, WxM, FHB QTL" object in the Map_Data class. Clicking on an individual chromosome map displays the interactive map highlighted with the QTLs.

