

BMS v4.0:

A web-based solution for network teams

Memorandum

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BMS v4.0 constitutes a long-sought professional, web-based solution for crop breeding programmes looking to deploy better breeding practices on a larger scale within their institution. It now provides concrete capabilities for them to centralise, standardise, control and share their data across teams through LAN or cloud, along with substantial improvements and fixes to core functionality.

Please visit the IBP portal for more information about the functionality now available with this release.

Version enhancements

User Management

- User authentication and role management to set access permissions and restrictions
- Logo customisation on institutional login page and homepage

Germplasm Management

- Improvements to the germplasm import template, allowing for import of: inventory, attributes, and alternative names
- Introduction of stock codes to help users track and label inventory
- Ability to code and manage groupings of fixed lines
- Ability to import inventory details for stock lists created from advancement processes

Nursery and Trial Management

- Import crossing diary to record opportunistic crosses in the field or greenhouse
- Flexible support for all trial designs by allowing the import of externally generated designs
- Improvements to the embedded seed inventory management
- Compatibility with data capture applications: DIB data collector, IRRi FieldLab, KSU Field Book, DART KDSmart
- Validation of out-of-bounds measurement data

Ontology Management

- Ontology Manager with a new ontology data model
- Easy search and selection of traits
- Easy addition of new traits and valid values

Help System

- Each module in the BMS is linked to the relevant section of the user manual section and tutorials

Breeding View (standalone, local application)

- Ability to analyse augmented and p-rep designs
- Ability to analyse line by tester designs

Architectural changes

- Solved performance bottlenecks; robust web-based system
- Single database
- Multi-user concurrency support ensures integrity and privacy of data in a multi-user environment
- Transaction processing allows rollback of failed processes and integrity of data
- Application Programming Interface (API) to plug with external tools

“Nobody works in silos anymore. Our goal is to help breeding teams step into the digital era to gain in efficiency, and therefore we put a lot of work in developing this multi-user, institutional version of the BMS with an adequate permissions scheme. Small-to-medium breeding organisations of both the public and private sectors in Africa and Asia will greatly benefit from implementing this readymade and encompassing solution to strengthen their data management practices and policies.”

— **Jan Erik Backlund, Development Manager**



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(continued)

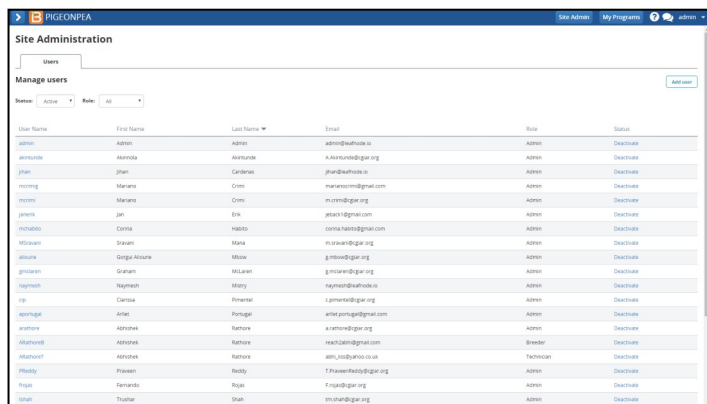


Fig. 1. Site administration: new module only accessible to administrators to create, update and manage permissions, and activate/deactivate users.

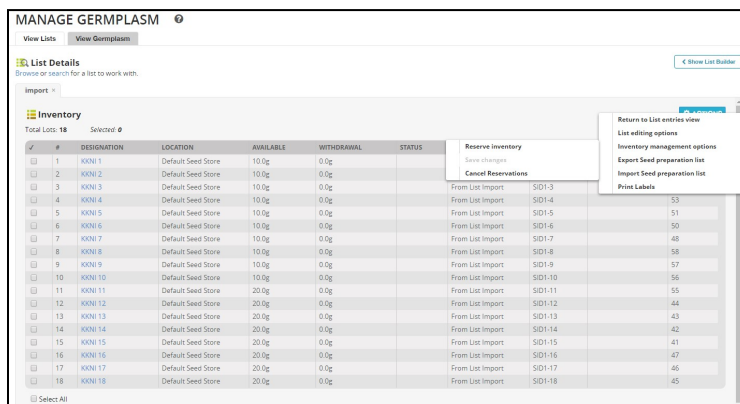


Fig. 2. Seed Inventory Management: You can now manage your inventory directly from the list you are working with (reserve, commit and export seed preparation lists, and print labels).



Fig. 3. Landing Page: View all of the programsme that you have created or have been assigned to as a collaborator, for all crops. Administrators will see the complete view of all available programmes.

Getting v4 for your institution

V4 is optimised for usage on a local or web server and will require technical assistance for installation. As such, interested institutions should contact our deployment team to enquire about feasibility and installation procedure at deployment@integratedbreeding.net

Minimum server requirements

- Windows Server Machine
- 8-16GB of Ram
- At least 4 cores
- General purpose SSD

Optimal set-up

- Windows Server Machine
- 16GB of Ram
- 4 cores
- High (I/O)

- General purpose SSD
- 500G of storage

Supported Browsers

- Firefox 20 and above (recommended)
- Google Chrome 27 and above

**in some cases IBP will be able to provide a cloud installation on its Amazon or Alyun servers. Contact the deployment team for enquiries.*

Integrated Breeding Platform (IBP)

Plant breeders are at the forefront of the next food revolution, most particularly in developing countries. The Integrated Breeding Platform (IBP) provides the tools and knowledge they need to rise to a new level of breeding innovation. It offers a suite of integrated software solutions (the IBP Breeding Management System); several breeding services such as genotyping; and breeding materials and related information for a broad range of crops, including germplasm, trait dictionaries and predictive markers. Furthermore, the IBP empowers plant breeders through training, funding opportunities, dedicated support and community spaces, making it the most comprehensive source for best practices in plant breeding.

Breeding Management System (BMS)

The IBP's Breeding Management System (BMS) is a comprehensive and easy-to-use software suite designed to help breeders conduct their routine activities with more efficiency, so that they may develop improved cultivars faster and at lower cost. It combines information management, data analysis and decision-support tools that accommodate common breeding schemes, from conventional breeding through increasing levels of marker use, providing all the tools they need in just one place.. Download directly from the IBP Portal: www.integratedbreeding.net



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