

Modalities of the Breeding Management System(BMS)

Memorandum

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The Breeding Management System (BMS) is a comprehensive and easy-to-use software designed specifically with breeders in mind, to help them 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. It is available in a Desktop Edition, a single-user software package for the personal computer; and in a Server PRO Edition for multi-user networks and teams:

Desktop Edition

The BMS **Desktop Edition** is designed for breeders preferring to use a standalone, single-user application on their local computers.

The Desktop Edition can be downloaded from the IBP website, where first-time users will also be able to request a free trial of Pro functionality. Users with connectivity issues can [contact the IBP](#) for instructions on using a torrent sharing or download manager software, or [request a DVD](#) and/or zip file of the installers.

Server Edition

The BMS **Server Edition** (also in Basic or Pro) is available for crop breeding programs looking to deploy a collaborative solution across their institute, or between partner organizations. Installed on a local area network (LAN) or a cloud server, it allows multi-user teams and networks to centralize, standardize, control and exchange data around shared breeding objectives, on the basis of a solid permissions & restrictions scheme.

The Server Edition requires technical assistance for installation. Interested institutions should contact our deployment team to enquire about feasibility and installation procedure at deployment@integratedbreeding.net.

Basic and Pro modalities

Both the Desktop and Server Editions are available in **Basic and Pro** modalities.

- The Basic package includes all functions for core breeding activities: prepare trials and nurseries, manage seed inventory, design field maps, print labels and barcodes, etc.
- The Pro package includes all of this, as well as proprietary components for more advanced statistical analysis.

Why use an integrated breeding suite?

The BMS aggregates all the tools a breeder needs to conduct their day-to-day operations, making more efficient use of their time to reap the benefits of enhanced data management such as better decision-making. It allows breeder to better process the increasing amount of data produced every crop season, and speed the selection process in a shorter turnaround time between generations.

A commitment to the developing world

The IBP is much more than a software provider. We are firmly committed in democratizing and facilitating the adoption of **today's tools for tomorrow's crops** by plant breeders across world regions and economies. To that end, the BMS Desktop Edition was conceived to expose breeders of all backgrounds to the latest technologies for quality data management.. The basic package is freely accessible to individual breeders, for them to be able to introduce modern practices into their routine activities, and to provide an effective, open access alternative to commercial software in use at larger or richer organizations. Those with the capacity to pay, or subsidized by public funding, can purchase a licence for Pro functionality, the revenue of which is all reinvested in continued development and maintenance of the product, and in training activities and the distribution of free licences in the developing world. The IBP website complements the technology by providing tutorials, publications, communities of practice, crop knowledge and material, and third party services.

“Design, randomization, pedigree selection, planning, data capture and analysis... the system has an application to support me at all steps of the plant breeding process.” — Ibrahima Sissoko, Senior Scientific Officer, ICRISAT Mali

System requirements

The BMS is compatible with Microsoft Windows. You will need these minimal specifications – a fairly standard configuration – to run it:

| Minimum requirements | Optimal set-up | Supported browsers |
|---|---|---|
| <ul style="list-style-type: none">• 64-bit Windows 10 (desktop)• 8-16GB of Ram• 2.4 Mhz dual core processor• General purpose SSD | <ul style="list-style-type: none">• Windows Server Machine• 16GB of Ram• 4 cores• High (I/O) | <ul style="list-style-type: none">• General purpose SSD• 500G of storage <ul style="list-style-type: none">• Firefox 20+ (recommended)• Google Chrome 27+ |

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

A few key features

Architecture

- Robust web-based system
- Single database
- Multi-user concurrency support ensures integrity and privacy of data in a multi-user environment *
- Transaction processing allows process rollback and data integrity
- Application Programming Interface (API) to plug with external tools

Site Administration and User Management

- User authentication and role management to set access permissions and restrictions *
- Logo customization on institutional login page and homepage.
- Help widget for users to connect directly with IBP support channels for contextual and responsive assistance
- View all the programs that you have created, or have been assigned to as a collaborator from the landing page. Administrators will see the complete view of all available programs.*

Germplasm Management

- Germplasm import template allows for import of inventory, attributes, and alternative names
- 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
- Embedded seed inventory management
- Compatibility with data capture applications: DIB data collector, KSU Field Book
- Validation of out-of-bounds measurement data

Ontology Management

- Ontology data model with easy search and selection of traits, and addition of new traits and valid values

Breeding View **

- Ability to analyse augmented and p-rep designs
- Ability to analyse line by tester designs
- Single and multi-site analyses

Genotyping

- Record genotyping samples taken from plants.
- Support for SNP marker datasets upload and retrieval
- Integration of molecular markers in the selection

**only in the Server Edition. **only with the Pro modality*

For more information on any of these options and modalities, contact our Deployment team through our [online Help Desk](#), or directly at: deployment@integratedbreeding.net. The IBP website provides the latest information about functionality and the latest version release.

Feedback and enquiries:

About the product:

sales@integratedbreeding.net

About tutorials and support material:

learning@integratedbreeding.net

About the IBP and other services:

pr@integratedbreeding.net

Technical support:

www.ibplatform.atlassian.net/servicedesk

Integrated Breeding Platform (IBP)

Plant breeders are at the forefront of the next food revolution, 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; breeding services such as genotyping; and breeding materials for a broad range of crops, including germplasm, trait dictionaries and trait-linked markers. The IBP empowers plant breeders through training, 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 the Desktop Edition from the IBP website: www.integratedbreeding.net