Seed Authentication, Traceability & Holistic Inventory

Seed Authentication, Traceability & Holistic Inventory (SATHI) Portal

Set of Instruction cum User Manual (Version 2.0) for Breeder Seed Production Centers (BSPCs)

National Informatics Centre (NIC)
Ministry of Electronics and Information Technology
Government of India

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1. INTRODUCTION TO THE SATHI PORTAL

1.1 OVERVIEW OF SATHI PORTAL –

SATHI Portal recognizes three generations namely Breeder, Foundation and Certified seeds and provides adequate safeguard for quality assurance in the seed multiplication chain to maintain the purity of the variety as it flows from the Breeder to the farmer. Nucleus Seed/Basic seed is the original or first seed, propagating material of a variety available with producing breeder or any other recognized breeder of the crop. This seed has 100% genetic and physical purity along with high standards of all other seed quality parameters. This portal has three modules i.e. Nucleus to Breeder, Breeder to Certified and Inventory module. In this document, we'll capture the information/steps related to Nucleus to Breeder Module.

As previously mentioned, SATHI is an integrated, multi-user and menu-driven software package that can be used to generate various kinds of decision supportive information pertaining to Breeder Seed management, Seed Certification, Progress report of Seed Testing Laboratories (STLs) and database of notified varieties. The front-end of online application is developed using Node.js, Angular technologies while the back-end is developed using Node.js and Postgres and is hosted on seedtrace.gov.in. SATHI portal is divided into following sub-systems -

- Breeder Seed Requirement
- Breeder Seed Production on the basis of requirement
- Breeder Seed Management
- Breeder Seed Monitoring and Testing
- Breeder Seed Distribution and Supply
- Breeder Seed Monitoring and Supply

1.2 OBJECTIVES OF SATHI PORTAL –

A. To upkeep databases to monitor the performance of the stakeholders involved in it –

- Department of Agriculture & Farmers' Welfare (DAFW) / Seed Division
- Indian Council of Agriculture Research (ICAR) / Nodal Officer
- Project Coordinators/ Project Directors (PC/PD)
- Seed Producing Agencies (SPAs)
- Breeder Seed Production Centres (BSPCs)
- Seed Processing Plants (SPPs)

B. To provide information on Requirement/Indent, Production and Availability and Supply of produced Breeder Seeds so that appropriate action can be taken in real time.

C. To help in monitoring and tracking of the functioning of stakeholders involved.

D. Analysis and projection of requirement of various seeds in future.

E. To keep users abreast of salient features of varieties released/notified.

1.3 PROCESS FLOW OF SATHI PORTAL –

Processes Involved in Nucleus to Breeder Module of SATHI are as follows –
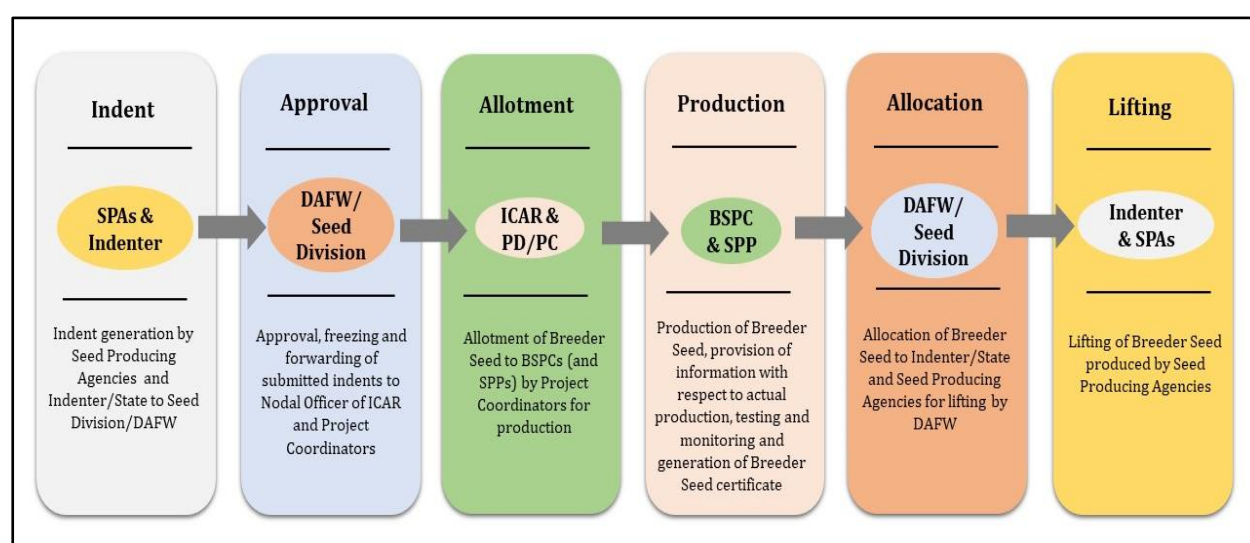
Process flow for Nucleus to Breeder Module of SATHI

1.3.1 Inventory -

The Seed Processing Plants (SPPs) will use the *Seed Inventory* form to oversee and manage the inventory of leftover seed stocks accumulated from previous years and seasons for every BSPC. The user will be able to enter specific details such as class of seed, stage, LOT numbers, Tag numbers and bag sizes for comprehensive record-keeping.

Timely filling of this form will allow BSPCs to make informed decisions related to seed availability, ability to fulfil indent requirements and bags to be used for sowing.

1.3.2 INDENT -

A. Release of Notification for Indent Submission - Seed Division will first release the notification on the portal for Indent Submission. On the basis of start date of indent submission, the link for the same will be activated. It will be functional till the end date, defined by Seed Division for submission of indent.

B. Onboarding of SPAs – It will be mandatory for SPAs to onboard themselves on SATHI Portal, to raise the indents. Once SPAs are onboarded, they can seamlessly login to SATHI portal and submit the indents by specifying the variety, season, year and quantity required by them, with the defined timeline.

(Note: It will be possible for both onboarded and non-onboarded SPAs to directly submit indents to the BSPCs. In such instances, SPAs will be required to furnish indent details to the BSPCs, who will then proceed to complete the "**Additional Indent**" form for uploading the information onto the SATHI Portal. These details are exclusively accessible to and can be viewed only by the BSPCs; they will not be reflected in the dashboards of other stakeholders.*)*

C. After the timeline is over, indenter will examine the indents received from their respective SPAs and after its approval, the consolidated list of indents made will be submitted to Seed Division for further processing.

1.3.3 APPROVAL -

Approval of submitted Indents by Seed Division - Seed Division will review the submitted Indents through portal. In case of any correction, Seed Division can extend the timeline for SPAs to make the necessary changes.

After reviewing the submitted indents, Seed Division makes a consolidated list of submitted indents, freezes them and then forwards it to respective Nodal officers of Indian Council of Agricultural Research (ICAR) i.e. ADG (seeds) for Agriculture Crops and ADG (Horticulture) for Horticulture Crops.

1.3.4 ALLOTMENT -

A. Allotment for Production - Nodal Officer will allot the Crop wise production of Breeder Seeds to mapped Project Coordinators/Director (PC/PD).

B. Assignment for Production - PC/PD will further assign the Crop/Variety to BSPCs for production through the portal. BSPCs will express their willingness and submit the nucleus/breeder seed availability for assigned varieties.

C. Creating monitoring teams – PC/PD will compose monitoring teams that will inspect the sown lands for every crop and state. They will include basic details like the designation, type of agency, state and district to which each team member will belong.

D. Allotment of target quantities of breeder seeds to be produced - On the basis of available nucleus/breeder seed with BSPCs, PC/PDs will fill *BSP I* to allot the target Breeder Seed quantity and assign monitoring teams who will complete the inspection process.

1.3.5 PRODUCTION -

A. BSPCs will fill *BSP II* for Production Schedule and Availability of Breeder Seed by mentioning the details such as – plot details, expected production, expected date of inspection, and expected date of harvesting. BSPC will also furnish details of the seeds sown (including Lot No. and Tag No. of bags used) in each plot.

B. BSPCs will fill *Monitoring Team Contact Details* form to specify the names and contact details (in addition to the information provided by the PC/PD) of each member expected to visit the sown plots to inspect and report crop conditions.

C. Monitoring teams will visit assigned BSPCs and inspect each of their plots. They will use the SATHI Inspection Mobile App to submit their reports.

D. BSPCs will be able to view information related to inspection report of monitoring team like – inspection results and final report (Satisfactory/Unsatisfactory/Re-monitoring after 15 days) and download the corresponding reports through the *BSP III* form.

2. SET OF INSTRUCTIONS TO USE SATHI PORTAL

2.1 TO LOGIN –

To login to SATHI Portal and avail the options available for State/Indenters**,** they need to follow the steps mentioned below -

    A. Open URL on chrome browser: https://seedtrace.gov.in

    B. Below screen will be opened. Click on   **LOGIN**   button shown at the right most corner on the top of the screen.

    C. When user will click on login button, It will get a popup screen, shown as below -
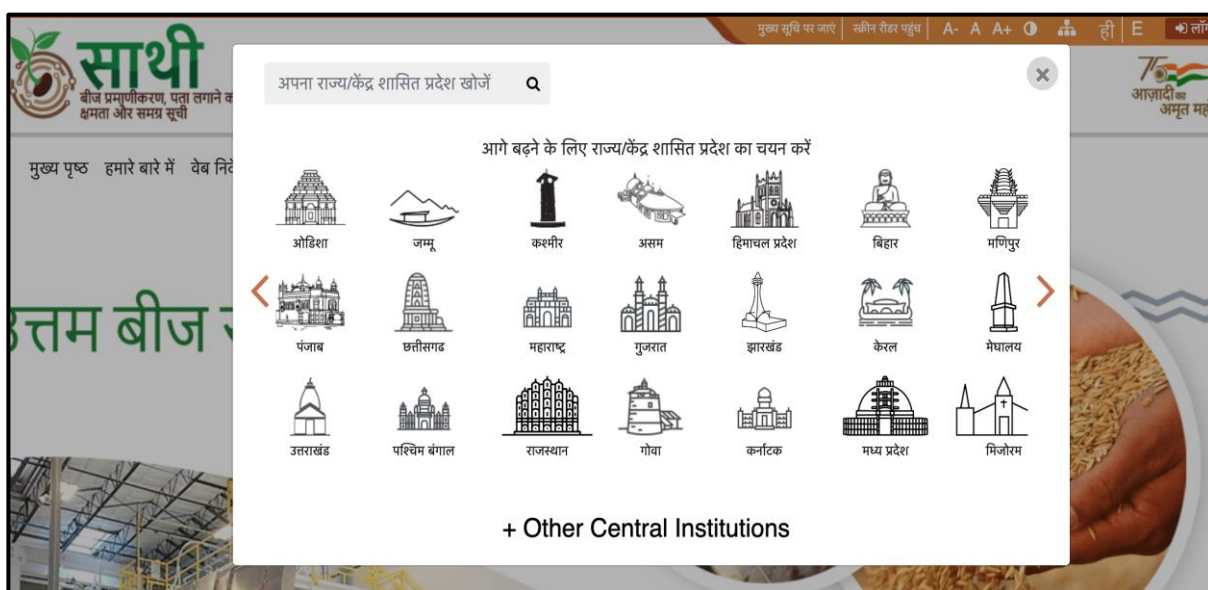
D. The pop-up screen will have following two sections –

- Select State/UT to Proceed
- Other Central Institutions

E. Click on **Other Central Institutions**
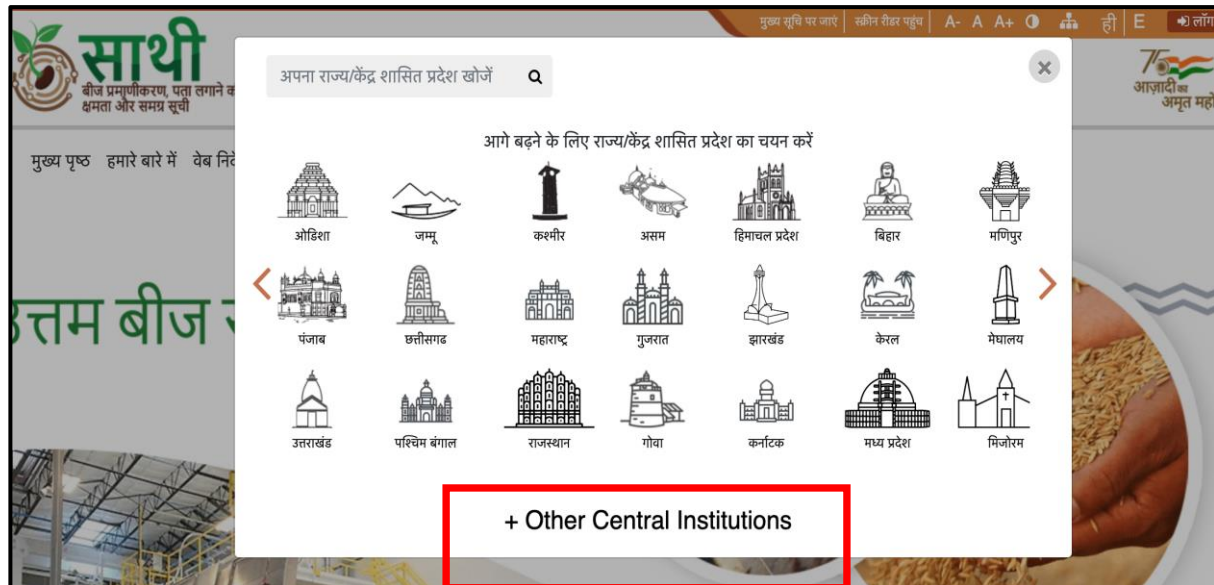
F. After the selection of **Other Central Institutions**, below screen will be shown –
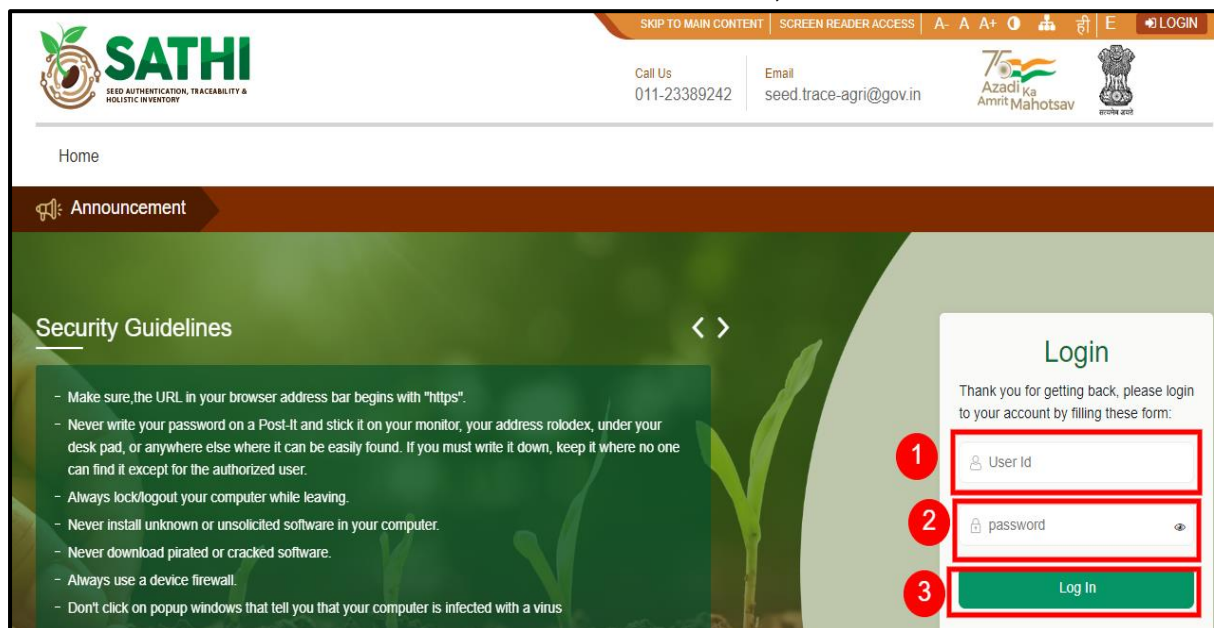
G. This screen will have input box for User ID and Password.

H. In user ID - User will enter correct user ID that has been provided by Admin

I. In Password - User will enter correct password that has been provided by admin

J. After filling User ID & Password, click on LOGIN button to access the dashboard and other available options to Indenters/States

2.2 TO ACCESS PROFILE OPTIONS-

A. To access user profile options, user will first login to their profile

B. After Login, user will be directed to the Dashboard page.

C. User will click on expandable dropdown placed at the right most corner on the top of the screen

D. User will get three options –

- View Profile
- Change Password
- Sign Out
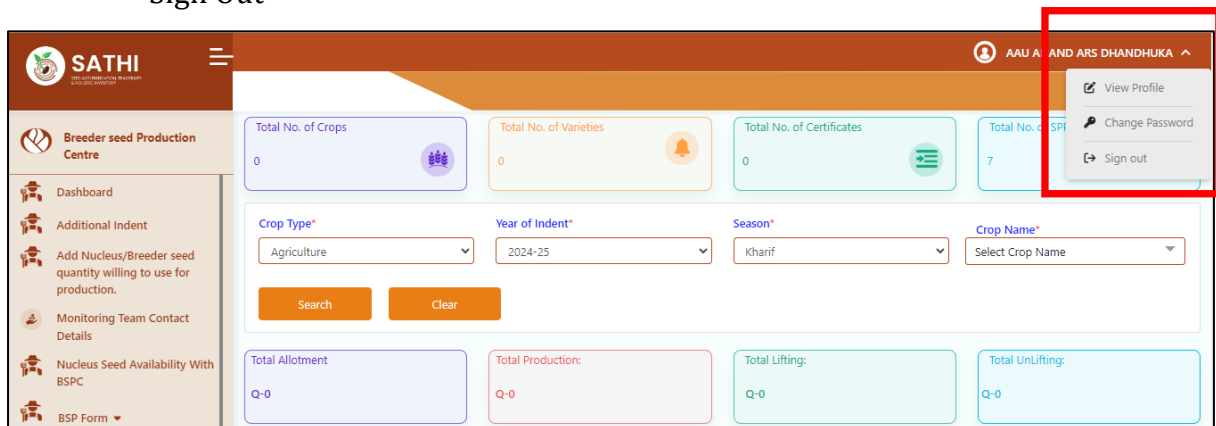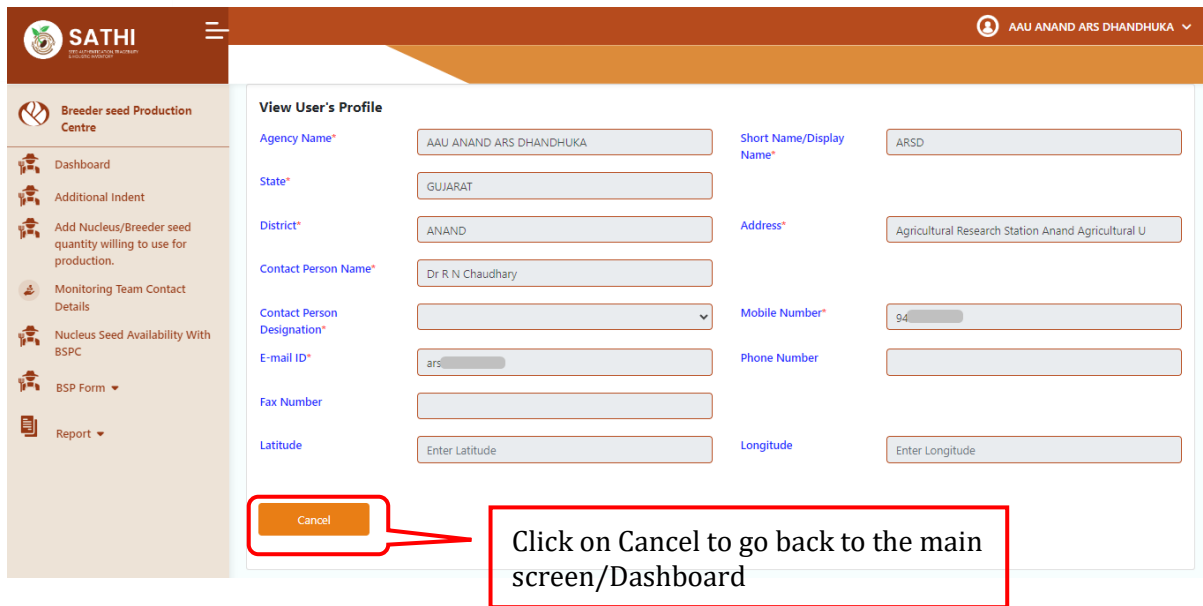
2.2.1 *To View user profile:*

- User will click on **View Profile**

- After the selection of **View Profile** option, user can view the details which have been added for the same on the portal.

Click on Cancel to go back to the main screen/Dashboard
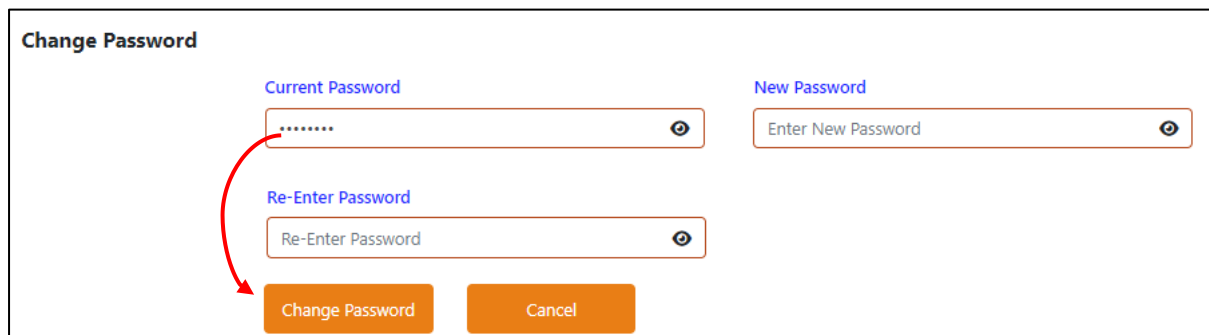
2.2.2   To change the password:

- User will have to click on **Change Password**

- Next, the screen below will be displayed.
- To change the password, user will first enter their current password and will click on [Change Password] button.

- A verification link will be shared to the registered Number and Email address for authentication.
- After verification of the link, user will be able to change the password by entering the new/updated password.

Click on Change Password to complete the process

Click on Cancel to Cancel the process

2.2.3 To Sign Out:

- User will have to click on **Sign Out**

- After Signing Out, the user will be redirected to the Login Page.

2.5 IN CASE OF FORGOTTEN PASSWORD -

In case the user has forgotten the password, they will have to take the following steps:

A. Go to the Login screen

B. Click on **Forgot Password** option

C. After clicking on **Forgot Password**, an Email and Verification message will be sent on registered Email address and Mobile Number for authentication.

D. User will click on the link which will redirect them to the screen where the user will have to Enter and Confirm a new password.

E. After entering the updated password, they will click on **Change Password**

3. ROLE OF BSPCs IN SATHI PORTAL

Following are the roles of BSPCs in SATHI Portal –

- To input indents received directly from State Governments or private agencies.

- To provide information about the quantity of Nucleus and/or Breeder Seed willing to use for National Indents received through the Central Government.

- To fill various BSP proformas to provide the authentic details about the Breeder Seed Production process to make it easy to monitor and track.

Login - To login to SATHI portal, BSPC will visit to SATHI site URL in browser. After visiting to SATHI portal, a login screen will be displayed -

After filling User ID & Password, they can click on **Log In** to access the available options.

3.1 ADDITIONAL INDENT

Exclusively designed for BSPCs, the *Additional Indent* form allows them to input indents received directly from State Governments or private agencies. It empowers BSPCs to monitor and manage the indents they receive in addition to the national indents received through the central government. This also includes crucial contact details of SPAs. By restricting access solely to BSPCs, this system enhances data privacy, empowering BSPCs to manage indents efficiently and make strategic production decisions based on total demand.

To fill this form, user will have to click on **Additional Indent** option from side menu, after login. The following details will be required to submit this form –

- Year of Indent*
- Season*
- Crop*
- Variety*
- *Notification Year* is auto filled
- Select State*
- Select District*
- Select SPA name*
- Address (may be auto filled)
- Mobile No.* (may be auto filled)
- Email ID* (may be auto filled)
- Indent Quantity (in quintal or Kg) *

A. **To fill the Form –**
- The user needs to select the Year of Indent, Season, Crop, and Variety and then click on the **Search** button to open the rest of the form. If there is any existing data, it will be visible in the grid below the form. (Year, Season, and Crop filters are mandatory to access pre-stored data efficiently.)
- For additional indents originating from onboarded states, users can simply choose the State, District and SPA name from dropdown menus, with all other relevant data auto-generated (in case Mobile No. or Email Id is missing, BSPC is expected to furnish those

details). Then the BSPC only needs to enter the Indent Quantity to **Save** the information for record-keeping purposes.

- In the case of additional indents from non-onboarded states, user can choose the State, District, select "Other" as SPA name and then manually input the SPA details. Following this, the BSPC can enter the Indent Quantity and **Save** the information for record-keeping purposes.

B. To Update an entry in the Form –

The user can update their entries by simply following the steps mentioned below –

- Open the Additional Indent form
- Select Year of Indent, Season and Crop (Variety is optional), and click **Search** button.
- Choose the saved entry they want to edit and click on the update action button.

- Edit the details.
- Click on the **Update** button to save the form with changed details.

Click on Update Icon to Update the details in Additional Indent form

C. To Delete an entry in the form –

As long as the Submit button has not been clicked, the user can delete their entries by simply–

- Opening the Additional Indent form
- Selecting Year of Indent, Season and Crop (Variety is optional), and clicking **Search** button.
- Choosing the saved entry they want to delete and clicking on the corresponding action button.
- Confirming the action by clicking the **Yes, delete it!** button

3.2 ADD NUCLEUS/BREEDER SEED WILLING TO USE FOR PRODUCTION

After the PC/PD has assigned the production of Breeder Seeds, every BSPC will receive an SMS to fill *Add Nucleus/Breeder Seed Willing to Use for Production* form within 7 days. This form empowers BSPCs to make informed decisions regarding the quantity of Nucleus/Breeder Seed they are willing to use for production of National Indents received through the Central Government.

To fill the same, user will have to click on **Add Nucleus/Breeder Seed Willing to Use for Production** option from side menu, after login. The following details will be required to submit the form –

- Year of Indent*
- Season*
- Crop*
- Variety*
- *Additional Indent Received* is auto filled
- *Quantity of Nucleus Seed Available* is auto filled
- *Quantity of Breeder Seed Available* is auto filled
- Select Reason*
- Quantity of Nucleus Seed willing to use *
- Quantity of Breeder Seed willing to use *

A. To fill the Form –

- The user needs to select the Year of Indent, Season, and Crop. On clicking **Search** button, "Select Variety" option will appear showing the varieties assigned to them by the PC/PD. If there is any existing data, it will be visible in the grid below the form.
- Detailed information on the exact quantities of Nucleus and Breeder Seeds available from previous years/seasons is provided, sourced from the seed inventory maintained by associated SPPs. Additional indents received for the selected parameters are also accessible.
- With this information, users can make well-informed decisions on the quantity of Nucleus and Breeder Seeds they are willing to use.

- For willing BSPCs, they can enter the feasible quantity. *(This will be auto filled if available seed quantity is 0)*

- Conversely, if unwilling, they have the option to specify the reason for dissent. *(If both Nucleus and Breeder Seeds are unavailable, by default the option "No" would be chosen.)*

- Users can make individual decisions for each variety and **Save** them (details will be saved in grid format below allowing the user to update/delete the entries). Only after all varieties are assigned, the user will be able to **Submit** the data.

B. To Update an entry in the Form –

As long as the Submit has not been clicked, the user can update their entries by simply following the steps mentioned below –

- Open the form
- Select Year of Indent, Season and Crop and click **Search** button.
- Choose the saved entry they want to edit and click on the update action button.
- Edit the details.
- Click on the **Update** button to save the form with changed details.

C. To Delete an entry in the form –

As long as the Submit button has not been clicked, the user can delete their entries by simply–

- Opening the form
- Selecting Year of Indent, Season and Crop and clicking **Search** button.
- Choosing the saved entry they want to delete and clicking on the corresponding action button.
- Confirming the action by clicking the **Yes, delete it!** button.

3.3 BSP PROFORMA II (PRODUCTION SCHEDULE AND AVAILABILITY OF BREEDER SEED)

Once the PD/PC allots the quantity to be produced by the BSPCs, each BSPC can fill BSP II form for the production schedule of allocated varieties as well as Nucleus/Breeder Seed sowing information. Through this form users can easily access combined target quantities derived from both Additional Indents and National Indents, aiding them in planning their production effectively.

To fill this form, BSPC will have to click on **BSP Proforma II (Production Schedule and Availability of Breeder Seed)** from side menu and provide following details:

For Page 1 of the form:

- Year of Indent*
- Season*
- Crop*
- Variety*
- State*
- District*
- Address*
- Variety*
- Area Sown (Ha)*
- Date of Sowing*
- *Class of Seed Sown* will be auto filled
- *Quantity of Seed Sown* will be auto filled
- Expected Date of Inspection*
- Expected Date of Harvest*
- Expected Production (Quintal/Kg) *

For Page 2 of the form:

- Class of Seed*
- Stage*
- Year*
- Season*
- Lot No.*
- Tag No.*
- *Quantity available (quintal/Kg)* will be auto filled
- *Quantity Sown* will be auto filled (can be changed manually if single tag is selected)
- *Total Quantity Sown (quintal/Kg)* will be auto filled

A. To fill the Form –

- The user needs to select the Year of Indent, Season, and Crop. On clicking **Search**:
  - corresponding total varieties, total targeted quantity, variety/quantity allotted from National indent, and variety/quantity from Additional indent will show
  - "Variety" option will appear showing the varieties assigned to them by the PC/PD in BSP I form.
  - If there is any existing data, it will be visible in the grid below the form.

- Once a variety is selected, its individual total targeted quantity, targeted quantity for national indent and additional indent will show.

- The User will then enter plot(field) details including State, District, Address, Area sown, Date of Sowing.
- 'Class of Seed Sown' and 'Quantity of seed sown' columns will have auto-filled values. (For generating these values, the user will click the link that says – *click here to record details of seeds sown* in the 'Add details of seeds sown' column. Once you click the link, page 2 of form will open.)

- In page 2 of the form:
  - Year of indent, season, crop and variety will be auto filled from the main page of BSP II form.
  - Class of seed can have 2 options in drop-down - Breeder Seed and Nucleus seed - depending on what was filled for this variety in the seed inventory.
  - The user will then select the Stage, Year and Season of the Breeder / Nucleus seed stock being used for sowing.
  - Next, the user will select Lot No. and Tag No of the seed bag being used for sowing.
  - Quantity available will be auto-generated according to the tags selected.
  - The user can select single or multiple tags at once. If the user selects multiple tags the 'Quantity Sown' will be the same as 'Quantity available' and be non-editable. If the user selects a single tag, they can manually change the 'Quantity Sown' (if they are not using all the seeds within that bag for sowing).

  - The user is allowed to delete row-wise entries and add more entries as needed.

o 'Total Seed Sown' will be auto-calculated through summation of the sowing quantities for that seed type. This value will be automatically reflected in the main page of BSP II form.

o The user will now click **Submit** button of page 2 to return to the main page for the form.

- 'Expected Date of Inspection' and 'Expected date of harvest' will be a date range. The user can select the starting date from the provided calendar and the ending date will be auto-calculated by adding 15 days to the starting date.

- 'Expected production (in Qt)' will be filled after 'Class of Seed Sown' and 'Quantity of seed sown' columns are reflected.

- The user can add more than one plot of data for every variety.

- Once details of all plots sown for that variety are complete, the user will be able to **Save** the data. Once saved, it will appear in the grid below and the user can then fill in data for the next variety.

- The user can add more plots for a saved variety using the "Add More" button in the grid.

- <u>After BSP II is submitted,</u> for each plot/field, a plot-code will be auto-generated by the system. It will be in the format of Year-Season-BSPC(code)-crop(code)-Plot(No.)
- User may also download the printable copy of the filled BSP II form in PDF format.

B. To Update an entry in the Form –

As long as the Submit has not been clicked, the user can update their entries by simply following the steps mentioned below –

- Open the form and select Year of Indent, Season and Crop and click **Search** button.
- Choose the saved entry they want to edit and click on the update action button.
- Edit the details and click on the **Update** button to save the form with changed details.

C. To Delete an entry in the form –

As long as the Submit button has not been clicked, the user can delete their entries by simply–

- Opening the form and selecting Year of Indent, Season and Crop and clicking **Search**
- Choosing the saved entry they want to delete and clicking on the *Delete* action button.
- Confirming the action by clicking the **Yes, delete it!** button.

3.4 MONITORING TEAM CONTACT DETAILS

This form allows BSPCs to input essential contact details about their visiting monitoring teams. Further, BSPCs can select the team member who would be in-charge of handling the mobile application and filling in the inspection report details.

To fill this form, user will have to login and go to **Monitoring Team Contact Details** from the side menu. They will have to fill the following:

- Year of Indent*
- Season*
- *Designation* will be auto filled (required if BSPC adds more members)
- *Type of Agency* will be auto filled (required if BSPC adds more members)
- *State* will be auto filled (required if BSPC adds more members)
- *District* will be auto filled (required if BSPC adds more members)
- Name*
- Mobile No.*
- Email ID*
- Address
- Select User for Application*

A. To fill the Form –

- The user needs to select the Year of Indent, Season and Crop and then click on the **Search** button to open the rest of the form. (If team details have already been filled then it will show up as a grid.)
- There will be one line showing the Team Name assigned to this crop by the PC/PD.

- The rest of the form will show up partially pre-filled (by respective PC/PD). This portion will be editable and the BSPC will fill additional contact details of each visiting member - Name, Mobile No, Email ID and Address. (Address is not mandatory)
- BSPC can add more team members and delete any entry (including those added by the PC/PD).

- After the member details, there will be a mandatory field "Select User for Application". It will contain a dropdown of the 'Name, designation, agency' of all the members added by the user. The user can choose any one member (but not someone from the same BSPC) who will manage the associated inspection mobile application.
- Once all details have been filled, user can click Save.
- Post saving, the details of that monitoring team will reflect as a grid. The user selected for app usage will be highlighted.

B. To Update the Form –

The user can update their data by simply following the steps mentioned below –

- Open the form

- Select Year of Indent, Season and Crop and click **Search** button.

- Click on the update action button.

- Edit the details

- Click on the **Update** button to save the form with changed details.

C. To Delete an entry in the form –

The user can their data by simply–

- Opening the form

- Selecting Year of Indent, Season and Crop

- Clicking **Search**

- Clicking on the *Delete* action button.

- Confirming the action by clicking the **Yes, delete it!** button.

3.5 BSP III (INSPECTION REPORT OF MONITORING TEAM)

BSPCs can view the plot-wise status of their monitoring efforts and download detailed inspection reports using this form. Therefore, BSPCs can keep a track of the inspection status of each of their plots.

To fill the form, user will have to go to **BSP III (Inspection Report of Monitoring Team)** in the side menu. They will need to provide:

- Year of Indent*
- Season*
- Crop*
- Variety*

Form details –

- The user needs to select the Year of Indent, Season and Crop and then click on the **Search** button. All existing data for that crop will be shown.
- BSPC can use the "Variety" dropdown to filter out plot-wise data for each variety.
- This form will be displayed as a report, that is, it will have all auto-filled data. Land details for each plot will be reflected as soon as BSP II is submitted. Inspection details and final monitoring report will be reflected as soon as the inspection is completed by the monitoring team via the SATHI Inspection mobile application.

- The user can download reports of individual plots. They will also have the option to download variety-wise consolidated report once reports for all plots of the chosen variety are available.

Downloaded Report example –

भा.कृ.अनु.प - भारतीय बीज विज्ञान संस्थान, मऊ
ICAR-Indian Institute of Seed Science, Mau

Mau-275103, Uttar Pradesh, India

PROFORMA - BSP III
INSPECTION REPORT OF THE MONITORING TEAM

Name of Production Center: ICAR IISS MAU
Date of Monitoring: 20/11/23

Year of Indent: Kharif, 2024-25
Crop: Wheat

Variety	Address	Area (Ha)	Date of Sowing	Expected harvest date	Expected production (Qt.)	Date of BSP I	Date of BSP II	Area Inspected (Ha)	Crop Condition	Report of Monitoring team	Reason for Dissatisfaction	Estimated date of harvesting	Estimated Production (Qt.)
GW 496	43, MAF, AB ROAD, MAU - 75	3.75	12/10/23	20/12/23 – 05/01/24	23.75	12/09/23	20/09/23	3.75	Good	Satisfactory	N/A	25/12/23 – 10/01/24	21.5

-SD-
(Anand Kumar)
Seed Producing scientist
ICAR-IISS, Mau, UP

-SD-
(Vinesh Kumar)
Scientist
Dept. of Agronomy

-SD-
(Hari Om Misra)
Representative
National Seed Corp.

-SD-
(Harish Bali)
Director
UP State Seed Certification
Agency, Lucknow, UP

-SD-
Ganesh Pandey
Scientist, Dept. of Plant
Breeding and Genetics
ICAR-IISS, Mau, UP

-SD-
Name
Designation
Institute Name, District, State

-SD-
Name
Designation
Institute Name, District, State

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