

# NOAH

plant germplasm ERP



**BULLSOFT**

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NOAH plant germplasm ERP is a new software platform for resource planning of plant germplasm, and provides full functionality for:

- Plant breeding.
- Variety trials. Product development.
- Research, development and commercial inventory.
- Management of hybrid productions.
- Production orders and forecasts.
- Germplasm bank, treatments, samples, sales.

- Noah is powerful, flexible and easy-to-implement.
- Noah manages the integrity, security and robustness of the information.
- Includes BI and query tools to provide the support for decision making.
- Includes the functionality for configuring the automatic importation of molecular markers lab reports.
- Provides tools for the automatic importation of existing data.

Noah provides a modern, high performance and easy learning user interface design.

Noah

Search Utilities About

Diary Accessions Varieties Productions Entries Outputs Business Customers Services Trials Rese

Researches Data definition Target 1 Parentals Candidates Selected Phases Germinations Plants

**Candidate crosses** All None Reports

Choose ☐ Female ☐ Male ☐ Options Apply 10 items [0 highlighted]

	Cross	Filial	Pedigree	Summary
<input checked="" type="checkbox"/>	♀ T767 ♂ T777	F1 F3	↻ TR800c ▶ 00003k	*Seg NN3 L Flower sterility type *Seg NN3 borrame ya 9 *P FI *Seg NN3 *L Flower sterility typ
<input checked="" type="checkbox"/>	00003k	F1		*Seg *P Flower sterility type 1

Noah provides a flexible and powerful search system by filters and operators, which provides accurate support for any decision making and flexible generation of complex reports.

Search accession

Filter List

**Accession** = Add X

Code \*

Other codes =

< = > All filial

of hybrid codes

☐ Is parental =

☐ Only last filial

☐ Hybrids from same origin

Female code = Male code =

Origin code = Selfpollinated from =

**Characterization** = Add X

Genus Solanum

Species Tomato Solanum lycopersicu

☒ Accession ☐ Entry

☐ Entry plant ☐ Research

☐ Trial

Characterization group Inflorescence descriptors

Data definition

☒ Flower sterility type

0, 1, 2

☒ 0 - Functional ☒ 1 - Pollen ☒ 2 - Stemless

Yes ☐ No ☐

**Entry** = A

Lot

Other Lot

Reception date < = > Select a date

Collection None

☐ Only with incidence alarm

Provider None

Germination < = >

Search accession

Filter List

☐ Include uncatalogued ☐ Only uncatalogued

Default operator Custom filters A\_1

Accession Filial F6

AND

Characterization

Species Tomato Solanum lycopersicum

Type Accession

Inflorescence descriptors - Dehiscence L - Longitudinal \*P -

OR

Characterization

Species Tomato Solanum lycopersicum

Type Accession

Inflorescence descriptors - Flower sterility type 1 - Pollen, 2 -

NOT

Characterization

Species Tomato Solanum lycopersicum

Type Accession

Inflorescence descriptors - Petal length = 12















AND

Speed test performed on a production database with real data (750,000 tomato accessions) in one of the companies in which Noah has already been implanted.

**Operation:** look for accessions according to their characteristics and molecular markers using a complex query with subsets of operators AND, OR and NOT.

Server	Database size	Number of characteristics consulted	Number of values consulted per characteristic	Number of molecular markers consulted	Number of subsets with operators AND, OR and NOT	Response time
Dell PowerEdge Intel Xeon E7-4830 Memory 64 GB	750,000 tomato accessions	3	1	3	3	7 seconds
		5	1	5	5	12 seconds
		12	3	8	17	15 seconds

Noah provides full functionality for plant breeding with tools for create and manage new hybrids with accurate design of parental characteristics.

Candidate crosses							
		All	None	Reports			
Choose		<input type="checkbox"/> Female	<input type="checkbox"/> Male	<input type="checkbox"/> Options	Apply	Equal relatives from origin	10 items [0 highlighted]
Mark	Siblings	Relative	Cross	Filial	Pedigree	Summary	
			♀ 01424 ♂ 00004	F1 F1		*Seg NN3 *P Flower sterility type 1 Inflore: NN3 L Flower sterility type 2 B *Seg NN3 *L GM	
			♀ 00003 ♂ 00011c	F1 F2	↪ 00004 ▶ 00004	*Seg *P GM Style position L Flower sterility type 0 GU *Seg *L GM	
			♀ T999A ♂ T999B	F1 F1			
	    ? ⌚ A		♀ TREK777 ♂ TR900a	F7 F8	↪ 111D ▶ 00011f ↪ TR900 ▶ TR900	L Flower sterility type 0 B X	
	  A		♀ TR900 ♂ TREK777	F1 F7	↪ 111D ▶ 00011f	L Flower sterility type 0 B X	
	 		♀ TR900b ♂ TREK777	F9 F7	↪ TR900a ▶ TR900 ↪ 111D ▶ 00011f	L Flower sterility type 0 B X	

- Prediction of the characteristics of the hybrids.
- Rules for forbidden crosses.
- Rules for crosses that must be swapped.
- Automatic detection of equal siblings or relatives.
- Automatic detection of already existing hybrids.
- Tools for filtering candidate crosses.
- Automatic detection of backcrossing.
- Information of the segregation of each accession.
- Visual warnings and icons with custom annotations.
- Nursery management.
- Tablet application for registering and evaluate new material selections in the field.



- Searching accessions according to their pedigree and filial information. Noah is optimized to perform searches throughout ancestors and descendants.

**Accession** [= Add X]

Code

Other codes

≤ = ≥ F5

of hybrid codes

☐ Is parental

☐ Only last filial

☐ Hybrids from same origin

Female code  Male code

Origin code  Selfpollinated from

<input checked="" type="checkbox"/>	Equal
<input type="checkbox"/>	Contains
<input type="checkbox"/>	Start with
<input type="checkbox"/>	End with
<input type="checkbox"/>	Greater or equal than
<input type="checkbox"/>	Less or equal than
<input type="checkbox"/>	Multiple

Options for searching accessions that are equal to that code, or contains that code, or start with, end with, are greater or less than.

Multiple: allows to enter a list of codes.

- Search accessions that are parental of any hybrid.
- Search accessions by filial or those that are last filial.
- Search accessions according to:
  - Origin code
  - Male code
  - Female code
- Search accessions that are selfpollinated from a particular ancestor.
- Search hybrids from same origin.

- Printing of reports for manage the seed inventory and planting process.
- Planning of the hybrids to be carried out according to the germination and the established proportion of females pollinated per male.

Research
Data definition
Candidates
Selected
Phases
Germinations
Plants
Plant pollination
Characterization data
Statistics
Files 3
Print accessions tool

Days
Show report
Print

Set samples
Set germination
Switch Catalog/Uncatalog

26

	Accession	Pedigree	Entry	♀ Female	♂ Male	Self	Samples	Germination	Percent
c	00005					1	7	7	100 %
c	00011	↪ T767 ▶ T767		1			3	3	100 %
c	00011f			1			0		
c	00019	↪ T999q ▶ T999q				1	2	2	100 %
c	00019	↪ T999q ▶ T999q	1753562				0		
c	00021	♀ CRR01b ♂ A7686 ♀ CRR01		1			0	0	0 %
c	00081	♀ A234 ♂ A4323 ♀ 00003k		1			7	7	100 %
c	00491	♀ 11213 ♂ 332dsd			1		1	1	100 %
c	5160200047	↪ 5160100022 ▶ 5160100022			2		0		
c	A234	↪ T777 ▶ 00003k		3	1	1	0		
		↪ T777 ▶ 00003k	1610804				10	3	30 %
		↪ T777 ▶ 00003k	1610804				12	3	25 %
		↪ T777 ▶ 00003k	1610804				15	3	20 %
c	A3254			4		1	19	11	58 %
c	A36			1	3	1	20	7	35 %
c	A4323				4		10		
c	A853			2	2		0		
			2418367				15	10	67 %
			2418367				15	15	100 %

Save

00005

Days	Germinated	Percent
26	7	100.00 %

Update
Toggle postpone
Unmake highlighted
Apply plan

Hybrid	♀ Female	♂ Male	Plan	Made
✗ 01502	00021	00491	0	0
✗ 01496	00011	5160200047	0	0
✗ 01493	00081	5160200047	0	0
✗ 5160200102	A3254	A234	2	0
	5160100031	A234	0	2
	00079	A3254	0	2
	00080	A853	0	2
	00081	A234	0	2
	00082	A3254	0	2

# Printing of the labels according to the germination data.



Noah provides the trials section for variety testing. Each characteristic can store the annotated observations over time.

CustomersServicesTrialsResearchesPlatesCharacteristics

ListTrialVarietiesCustomersCharacterizationDataFiles2

Select the customer varieties

☐ Varieties
☒ Customers

☒ Agrigold, 222,

- ☒ 00001 (00001, 10000)
- ☒ Borrar99 (Borrar99, )
- ☒ fs2 (FS2, )
- ☒ Hulk (T767, TREK777F, T777)
- ☒ Salado (A36, T103, )
- ☒ T777 (T777, )
- ☒ Y789 (Y789, )
- ☒ Canciller (T777, )
- ☒ cherry plus (118289, )

☐ Blue Seeds, ,

- ☐ 00001 (00001, 10000)
- ☐ fs2 (FS2, )

Characterization general description

CustomersServicesTrialsResearches

ListTrialVarietiesCustomersCharacterizationDataFile

Tuesday, November 7, 2017

	Dehiscence	Flower sterility type	Inflorescence com
00001, 10000	X	1	ok
Borrar99	X	1	ok
fs2	L	1	drop
Hulk	* P	2	
Salado	* P	2	
T777	X	0	

☒ Dehiscence
☐ EnumBorrane
☒ Flower sterility type
☒ Inflorescence comments
☒ Inflorescence type

Noah provides a section for the management of internal or external production of hybrids.

Order list
Order
Order seeds
Order messages
Production list
Production
Production accessions
Production entries

Download
Delete
New

**Production accessions**

Accession  
00008

Required reception date  
Select a date

Target Seeds

Target Weight  
1.00 kg

Female Seeds  
1,212

Male Seeds  
1,212

Target Seeds Female

Target Seeds Male

Female Weight

Male Weight





Target Weight Female

Target Weight Male

Female envelopes

Male envelopes

Remarks

	Accession	Base	Female	Male	Target	Base	Female sent	Male sent
   	00008		4%	8%	1.00 kg		1,212 seeds	1,212 seeds

Additional outputs (0)

Package extractions

Package  
None

Seeds

Required 1,212 seeds	Extracted 50 seeds
-------------------------	-----------------------

Package	Seed
4147347 p1	

Noah provides functionality for inventory, seed tracking, seed treatment, sales and samples.

Search entries

Filter List




























List of entries

Print

	Reception	Lot	Accession	Commercial R.	Collections	Available seeds	Available weight	Locked seeds	Locke
	22/10/17	1753562	00019		Commercial	81,243	0.41 kg	0	
	13/06/17	5203298	T767	BO IR 232 S BT2 S	Indeterminada	727	0.01 kg	0	
	13/06/17	9163180	T777	BT2 HR BT IR	Indeterminada	777	0.01 kg	0	
	13/06/17	5601799	T777	BT2 HR BT IR	Indeterminada	777	0.01 kg	0	
	13/06/17	1126012	T777	BT2 HR BT IR	Commercial	777	0.01 kg	0	
	01/06/17	5335403	T777	BT2 HR BT IR	Commercial	1,209,711	25.16 kg	0	
	15/05/17	9055395	TREK777		Commercial	150,000	0.75 kg	0	
	14/05/17	8147208	T767	BO IR 232 S BT2 S	Commercial	99,998	0.20 kg	500	
	10/05/17	7486785	T767	BO IR 232 S BT2 S	Active	1,000,000	8.00 kg	0	
	05/05/17	4626399	T777	BT2 HR BT IR	Commercial	20,934	0.17 kg	0	
	05/05/17	5108850	T777	BT2 HR BT IR	Commercial	5,000	0.02 kg	0	
	01/05/17	4842071	T767	BO IR 232 S BT2 S	Active	285,714	2.00 kg	0	
	04/04/17	9973592	T767	BO IR 232 S BT2 S	Commercial	743	0.01 kg	0	
	04/04/17	4555641	T767	BO IR 232 S BT2 S	Commercial	777	0.01 kg	0	
	04/04/17	6937249	T767	BO IR 232 S BT2 S	Commercial	777	0.01 kg	0	
	04/04/17	8237773	T767	BO IR 232 S BT2 S	Commercial	10,777	0.08 kg	0	
	04/04/17	1312215	T767	BO IR 232 S BT2 S	Commercial	777	0.01 kg	0	

None Items ? Selected - Available seeds 2,951,991 Locked seeds 500 For improve seeds 0 Valuation 2,720.74 Copy Cancel Ok

Noah Portable, specially designed for tablets, provides the functions for field work of plant breeding and evaluation of varieties, management of shipments in camera, or taking of data in nursery.

	TestEnum	Dehiscence	EnumBorrarme	Flower sterili
Agrigold - 00001	NN 	L 	Aa 	2
Agrigold - Borrar99	NN2 	* P 	Aa 	2
Agrigold - fs2	NN2 	X 	Aa 	0
Agrigold - Hulk	NN 	* P 	AA 	1
Agrigold - Salado	NN3 	* P 	Aa 	2
Agrigold - T777	NN 	X 	AA 	0
Agrigold - Y789	NN3 	* P 	AA 	1
Agrigold - Canciller	NN2 	X 	Aa 	0
Agrigold - cherry plus	NN2 	X 	Aa 	0











































Noah Portable provides a section of germination tasks for each data collection of germination of a set of lots. Includes the upload of photos of the tray of plants to the information of each lot.


### Germination tasks


Code

Current date



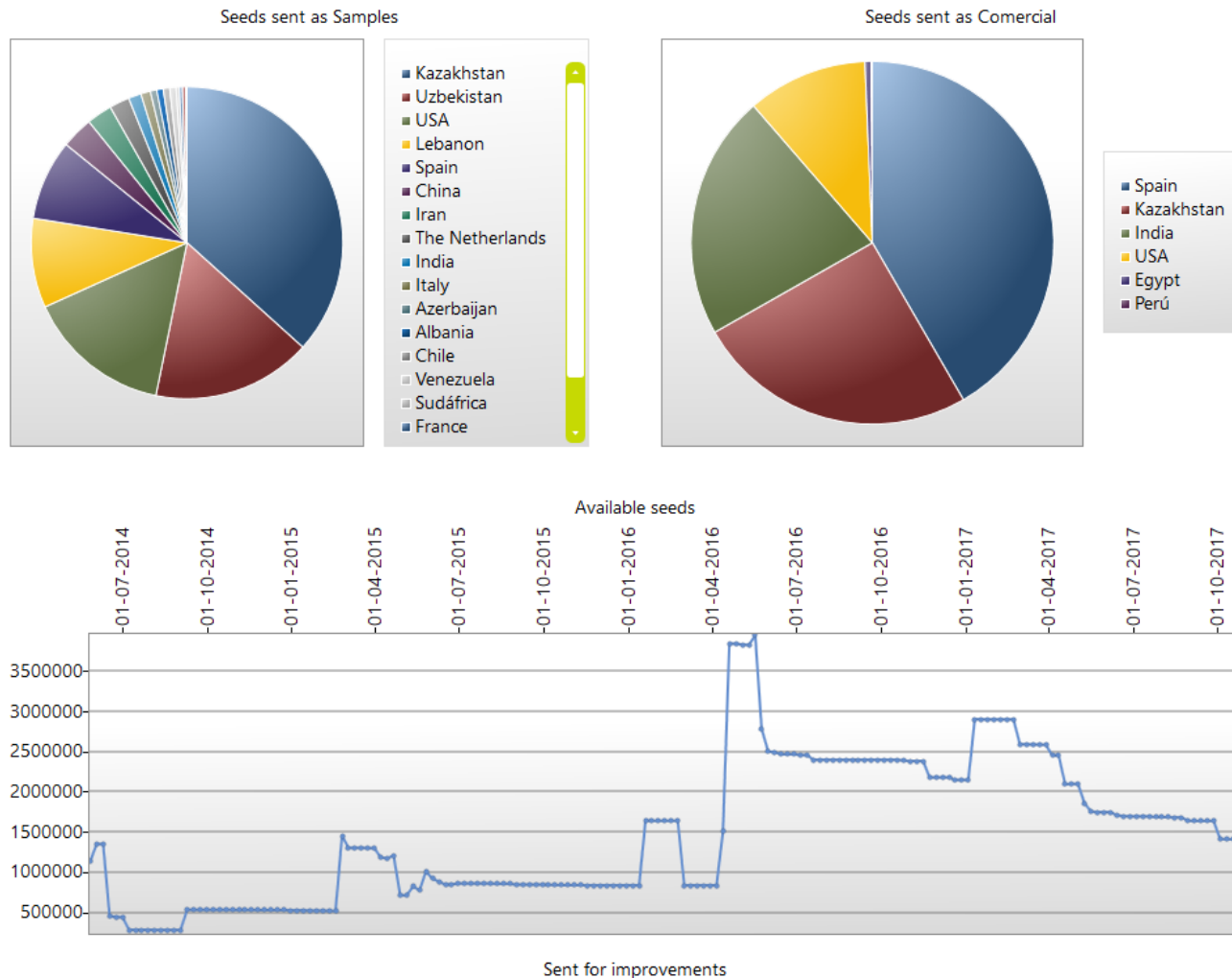
Lot	Accession	Date	Germination	Vigor	Samples	Planting	Spread-out	Days	%	Normal	Abnormal	Dead
40308/53	23423	02-08-2017 	15.02 %		333	02-08-2017 	Select a date 	22				
7486785	T767	02-08-2017 	7.81 %	25.00 %	333	02-08-2017 	Select a date 	22				
9579031	00011	02-08-2017 	28.53 %	24.00 %	333	02-08-2017 	Select a date 	22				
44376	23423	02-08-2017 	30.03 %	23.00 %	333	02-08-2017 	Select a date 	22				
4555641	T767	02-08-2017 	22.52 %	22.00 %	333	02-08-2017 	Select a date 	22				
20083	23423	02-08-2017 	45.05 %	21.00 %	333	02-08-2017 	Select a date 	22				
4842071	T767	02-08-2017 	75.83 %	20.00 %	333	02-08-2017 	Select a date 	22				
8147208	T767	02-08-2017 	2.70 %	19.00 %	333	02-08-2017 	Select a date 	22				
9055395	TREK777	02-08-2017 	2.85 %	18.00 %	333	02-08-2017 	Select a date 	22				
9973592	T767	02-08-2017 	3.00 %	17.00 %	333	02-08-2017 	Select a date 	22				
5717801	T767	02-08-2017 	3.15 %	16.00 %	333	02-08-2017 	Select a date 	22				
7702119	TREK777	02-08-2017 	12.00 %	15.00 %	333	02-08-2017 	Select a date 	22				
5502017	TREK777	02-08-2017 	3.30 %	14.00 %	333	02-08-2017 	Select a date 	22				







Noah provides statistic charts about any information managed by the system.



Noah allows to classify the accessions in areas. Each user can only see information related to the materials that belong to their areas.

### Research center A

63546376253

47848765915

67987451234

61798856469

56978461324

### Research center B

34345776253

55587658899

99874631654

31354987798

31369879874

### Development

PK700

PK701

PK900

PK905

PK990

PK999

### Commercial

Hulk

Superman

Spiderman

**AREA**

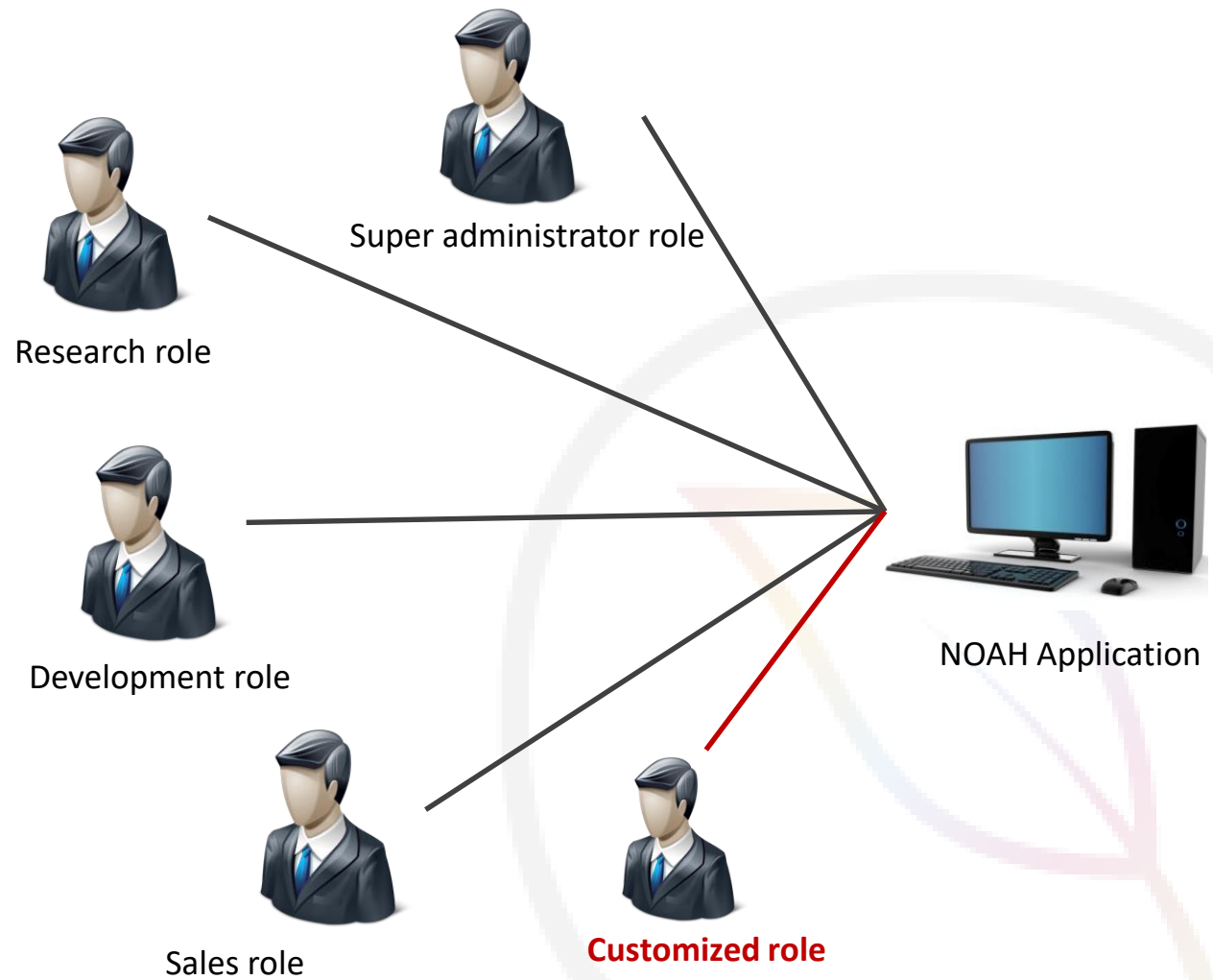
The configuration of the user roles allows to have a total control of the actions that each user can perform.

Administrator
Productions
User
Breeder assistant

Tomato *Solanum lycopersicum*

Characterization group	Mode
Inflorescence descriptors	ReadWrite
Seedling	ReadWrite
Plant characteristics	ReadWrite

- ☐ **Accession**
- ☒ Accession business state
- ☒ Accession business state client target
- ☒ Areas
- ☐ **Changes tracking**
- ☐ **Characterization**
  - ☒ Copy characterization group to accession
  - ☒ Create characterization data value directory
  - ☒ Delete characterization
  - ☒ Delete characterization data value
  - ☒ Delete characterization data value directory
  - ☒ Delete characterization group
  - ☒ Get characterization prediction
  - ☐ **List characteristics summary**
  - ☒ List characterization data values
  - ☒ List characterization groups
  - ☒ List characterizations
  - ☒ Load characterization
  - ☒ Load characterization data value



Noah saves in a Log-database all the operations carried out throughout the day. In a way that allows a complete historical audit of the activity of each user with the system.

	Id	CreatedAt	Company	CallId	Session	Type	Log
4152	4152	2018-03-07 11:45:35.687Z	SYS	1368	demo	Data	Response: <LoadDenominationResponse xmlns="http://www.Bullsoft.com/noah/"><LoadDenominationResul...
4153	4153	2018-03-07 11:45:35.687Z	SYS	1368	demo	Data	Eleapsed time: 10 ms
4154	4154	2018-03-07 11:45:35.687Z	SYS	1369	demo	Data	Call: <LoadAccession xmlns="http://www.Bullsoft.com/noah/"><id>140e8f41-24bf-43d5-a11d-ec2b639dc05c<
4155	4155	2018-03-07 11:45:35.691Z	SYS	1362	demo	Data	Response: <GetAccessionEventsResponse xmlns="http://www.Bullsoft.com/noah/"><GetAccessionEventsResul
4156	4156	2018-03-07 11:45:35.691Z	SYS	1362	demo	Data	Eleapsed time: 27 ms
4157	4157	2018-03-07 11:45:35.693Z	SYS	1369	demo	Data	Response: <LoadAccessionResponse xmlns="http://www.Bullsoft.com/noah/"><LoadAccessionResult xmlns:i=
4158	4158	2018-03-07 11:45:35.693Z	SYS	1369	demo	Data	Eleapsed time: 5 ms
4159	4159	2018-03-07 11:45:35.696Z	SYS	1370	demo	Data	Call: <LoadAccession xmlns="http://www.Bullsoft.com/noah/"><id>a8080cc0-5fa1-4e6d-9b49-7a35b9d97cd9<
4160	4160	2018-03-07 11:45:35.703Z	SYS	1371	demo	Data	Call: <LoadAccession xmlns="http://www.Bullsoft.com/noah/"><id>6c0605e2-e916-4b0a-8528-48df16d49bfd<
4161	4161	2018-03-07 11:45:35.709Z	SYS	1364	demo	Data	Response: <LoadAccessionResponse xmlns="http://www.Bullsoft.com/noah/"><LoadAccessionResult xmlns:i=
4162	4162	2018-03-07 11:45:35.709Z	SYS	1364	demo	Data	Eleapsed time: 43 ms
4163	4163	2018-03-07 11:45:35.709Z	SYS	1365	demo	Data	Response: <LoadAccessionResponse xmlns="http://www.Bullsoft.com/noah/"><LoadAccessionResult xmlns:i=
4164	4164	2018-03-07 11:45:35.709Z	SYS	1365	demo	Data	Eleapsed time: 40 ms
4165	4165	2018-03-07 11:45:35.710Z	SYS	1370	demo	Data	Response: <LoadAccessionResponse xmlns="http://www.Bullsoft.com/noah/"><LoadAccessionResult xmlns:i=
4166	4166	2018-03-07 11:45:35.710Z	SYS	1370	demo	Data	Eleapsed time: 14 ms
4167	4167	2018-03-07 11:45:35.711Z	SYS	1372	demo	Data	Call: <LoadAccession xmlns="http://www.Bullsoft.com/noah/"><id>d15c94d8-3e25-401b-ae7a-715c22eda7c1<
4168	4168	2018-03-07 11:45:35.712Z	SYS	1373	demo	Data	Call: <LoadAccession xmlns="http://www.Bullsoft.com/noah/"><id>ee0ed86e-f143-464d-b67f-c92cf9324d6b<
4169	4169	2018-03-07 11:45:35.725Z	SYS	1373	demo	Data	Response: <LoadAccessionResponse xmlns="http://www.Bullsoft.com/noah/"><LoadAccessionResult xmlns:i=
4170	4170	2018-03-07 11:45:35.725Z	SYS	1373	demo	Data	Eleapsed time: 13 ms
4171	4171	2018-03-07 11:45:35.726Z	SYS	1372	demo	Data	Response: <LoadAccessionResponse xmlns="http://www.Bullsoft.com/noah/"><LoadAccessionResult xmlns:i=

Noah allows you to configure the code pattern of the objects (accessions, trials, lots, packages, productions) with a secure and flexible XML format.

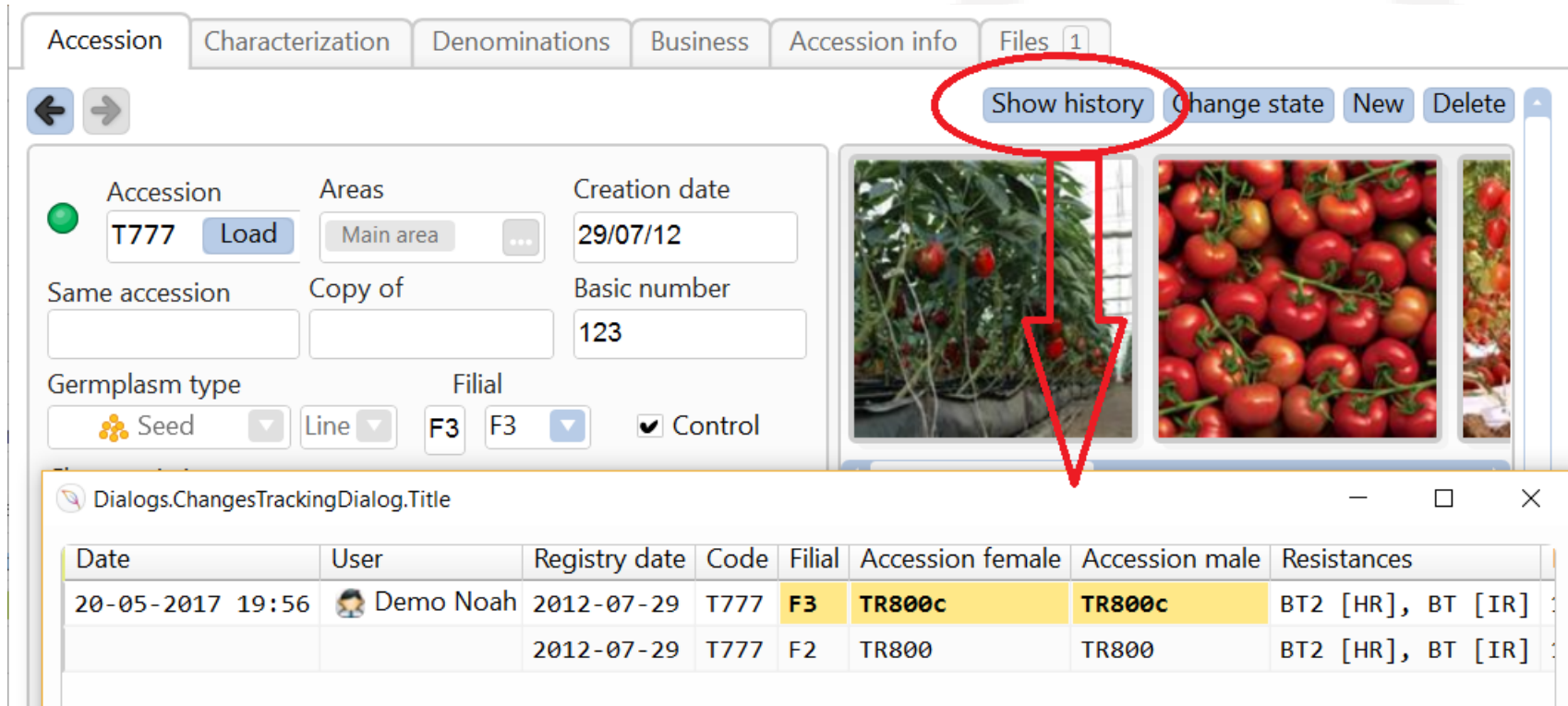
```
<pattern>
  <conditionalPattern>
    <condition param="PedigreeType" value="Haploid" />
    <param>SpeciesCodeB</param>
    <literal>S</literal>
    <param>CurrentYear</param>
    <param>AreaCode</param>
    <code defaultType="number" initialValue="0" fillLength="10-position" fillChar="0">
      <literal>Hanloid</literal>
    </code>
  </conditionalPattern>
</pattern>
```

Name	Last code	Help
Accession	01521	Pattern for the code of accessions
Basic number of accessic	6015	Pattern for the code of the basic number of the accessions
Autodenomination for cus	OL-24561-0012	Pattern for the code of denominations automatically generate
Entry	4640496	Pattern for the code of entries
Entry plant	00011	Pattern for the code of entry plants
Germination task	00005	Pattern for the code of germination tasks
Invoice	?/002	Pattern for the code of invoice


Noah includes a set of visual warnings that increases the performance of users and the reliability of operations.

	Mark	Created at	Output	Customer	Species	Extracted	State
		22/10/17	00051	21382 Agrigold Esto son las notas del client		--	Rectification
		18/05/17	00049	19260 Agence Agdir Lot 157 Badra	Tomato	0%	Budget
		11/05/17	00048	85410 ADEL SHOUSHA	Tomato	0%	Budget
		12/04/17	00045	72554 (AGRICA) CTS LTD.	Tomato	0%	Budget
		13/02/17	00044	90123 AGRI Nova Mexico, S.A. de C.V.		--	Internal
		31/12/16	00042	93852 AGRIGENSOL		--	Budget
		31/12/16	00043	21382 Agrigold Esto son las notas del client		--	Rectification
		31/12/16	00039	21382 Agrigold Esto son las notas del client		--	Budget
		12/11/16	00029			--	Budget
		06/11/16	00028	21382 Agrigold Esto son las notas del client	Tomato	0%	Budget
		16/10/16	00014	24561 Blue Seeds		--	Rectification
		27/08/16	1234	21382 Agrigold Esto son las notas del client	olivo	0%	Confirmed
		04/08/16	1620402	24561 Blue Seeds	Tomato,	18%	Budget
		06/07/16	1668543			--	Budget

Noah includes the history of object changes where the user can see how an object has been modified since it was created.



The screenshot shows the Noah plant germplasm ERP interface. The 'Files' tab is selected, and the 'Show history' button is circled in red. A red arrow points from the 'Show history' button to a table titled 'Dialogs.ChangesTrackingDialog.Title'.

Date	User	Registry date	Code	Filial	Accession female	Accession male	Resistances
20-05-2017 19:56	 Demo Noah	2012-07-29	T777	F3	TR800c	TR800c	BT2 [HR], BT [IR]
		2012-07-29	T777	F2	TR800	TR800	BT2 [HR], BT [IR]



The accessions have a list of events and a list of children, so that the user can easily see the activity of each material.

	Code	Filial	Pedigree	Copy	
▶	00965	F1	♀ T777 ♂ 00014b ♀ 00003k		
▶	00977	F1	♀ T777 ♂ 00018 ♀ 00003k ♂ T999q		
▶	00989	F1	♀ T777 ♂ 00020 ♀ 00003k		
▶	01029	F1	♀ T777 ♂ 00501 ♀ 00003k		
▶	01041	F1	♀ T777 ♂ 00510 ♀ 00003k		

	Happened at	Event	Code	Details
▶	05/11/17	Output	00044	AGRI Nova Mexico, S.A. de
▶	02/11/17	Entry	4640496	
▶	30/10/17	Female	01521	Female
▶	25/10/17	Production: female	PTOEX17D0026	Female
▶	23/10/17	Research: selfpollinated	RT017A0076	Selfpollinated.
▶	27/09/17	Entry	7739592	
▶	18/09/17	Female	01517	Female

The tool for automatically importing laboratory tests for molecular markers saves time and provides reliability.

List
Plate
Germplasm
Files 5

	Code	Accession
...	A1	11213
...	B1	123BN
...	C1	T767
...	D1	T777
...	E1	T103
...	F1	TR800
...	G1	00013
...	H1	A234
...	A2	T777B
...	B2	
...	C2	
...	D2	
...	E2	
...	F2	
...	G2	
...	H2	
...	A3	

123

1

2

3

A

B

C

D

E

11213

T777B

123BN

T767

T777

T103

Sunday, November 5, 2017
Mode
Clear
Import from excel
Export to excel

	Dehiscence	Flower sterility type	Inflorescence type	Petal length (mm.)	S
00001	* P	1	GM	2.0	
00003k	* P	1	B	2.0	
00004	L	2	GM	2.0	
00011	L	0	GM	2.0	
00011c	L	0	B		
00011f	X	2	GM		
00819	L	0	B		
01424	* P	1	GM	8.02	
01428	L	2	GU	32.03	
01429	L	2	GM	14.44	
01437	L	0	GM	44.09	

Noah provides a flexible reporting tool that describes in detail the information requested by the user.

### List accessions

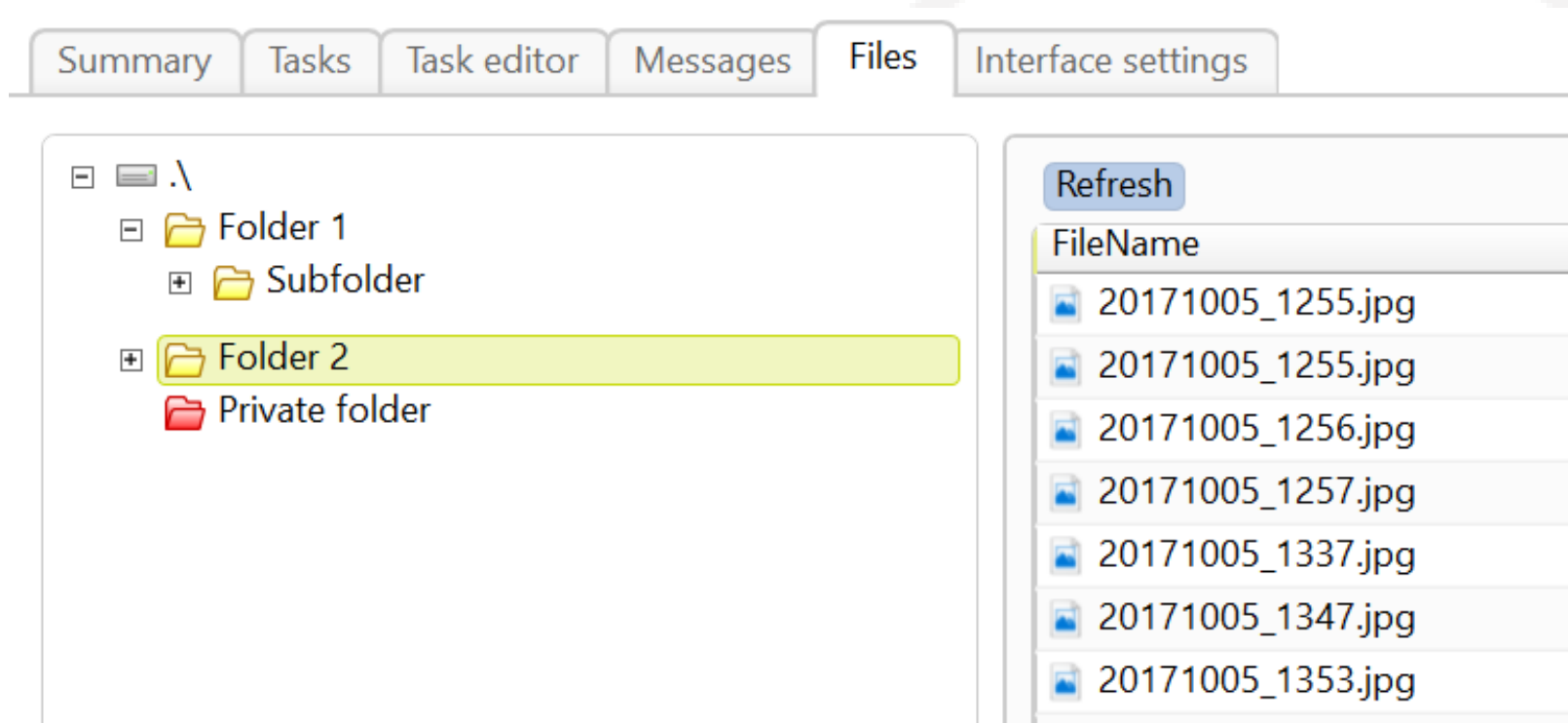
05-Nov-2017 Accessions: 19 (1-19) Total: 122

(  
 From characterization: Dehiscence is "Longitudinal|Poricidal|Medium"  
 OR  
 From characterization: Flower sterility type is "Functional|Pollen|Stemless"  
 )

Accession	
00001	*P Flower sterility type:2 Inflorescence comments:Mola!! GM Petal length:2.0 mm. Sepal length:2.0 mm. <del>Hypocotyl pubescence</del> Style position S 0
00003	*P GM Style position
00003k	*P Flower sterility type:1
00004	NN3 L Flower sterility type:2 B
00006	Flower sterility type:2
9T777 dTREK777 9▶00003k d▶00011f	
00008	Flower sterility type:0
◊T767 ▶T767	
00011	L Flower sterility type:0 GU Style position

Noah includes a file repository. The files that belong to an object, are saved together with the object.

- File Version Control.
- Access to folders can be restricted by user.



The screenshot displays the 'Files' tab of the Noah application. The interface is divided into two main sections. On the left, a tree view shows the directory structure: a root folder '\', followed by 'Folder 1' (containing 'Subfolder'), 'Folder 2' (highlighted in yellow), and 'Private folder'. On the right, there is a 'Refresh' button and a table of files. The table has a header 'FileName' and lists several image files with their full paths.

FileName
20171005_1255.jpg
20171005_1255.jpg
20171005_1256.jpg
20171005_1257.jpg
20171005_1337.jpg
20171005_1347.jpg
20171005_1353.jpg

All the types of objects are fully customizable:

Customers
Services
Trials
Researches
Plates
Characteristics
Configuration

Genus
Species
Subspecies
Subsubspecies
Resistances
Abiotic stresses
Scales

Types of tray
Business states
Germination
Code patterns
Users
Roles

Areas
Countries
Bank accounts
Type of customers
Type of documents

Types of provider
Improvements
Collections
Locations
Packaging
Type of plates

**Collection**
New
Delete

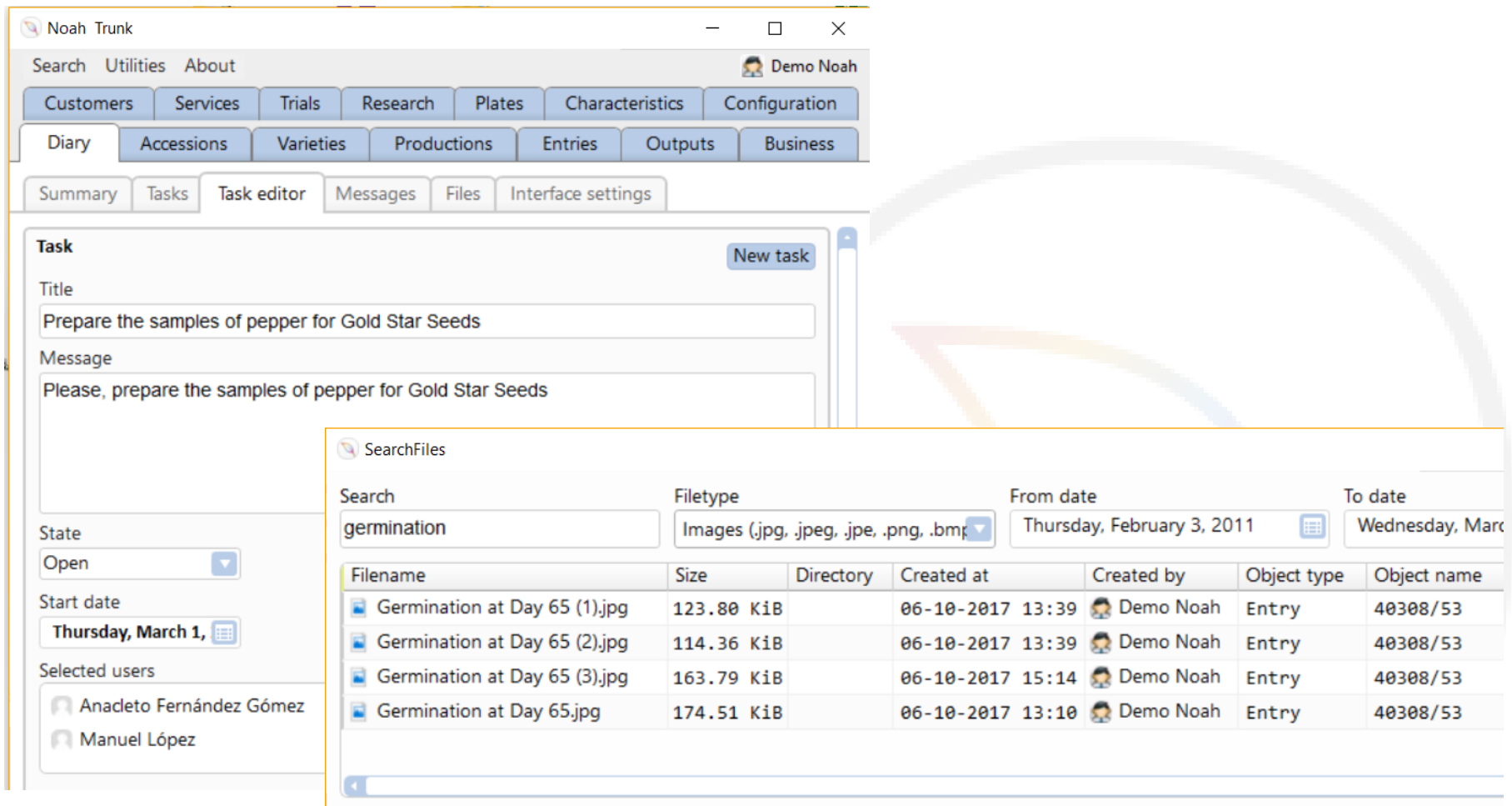
Name of the collection for packages
Backup package required

Indeterminada
☐ Backup package required
Save

**List of collections**

Name	Backup package required
Active	<input type="checkbox"/>
Base	<input type="checkbox"/>
Indeterminada	<input type="checkbox"/>
Commercial	<input checked="" type="checkbox"/>

Noah includes a section for task management and a tool for searching files saved in the database of the system.

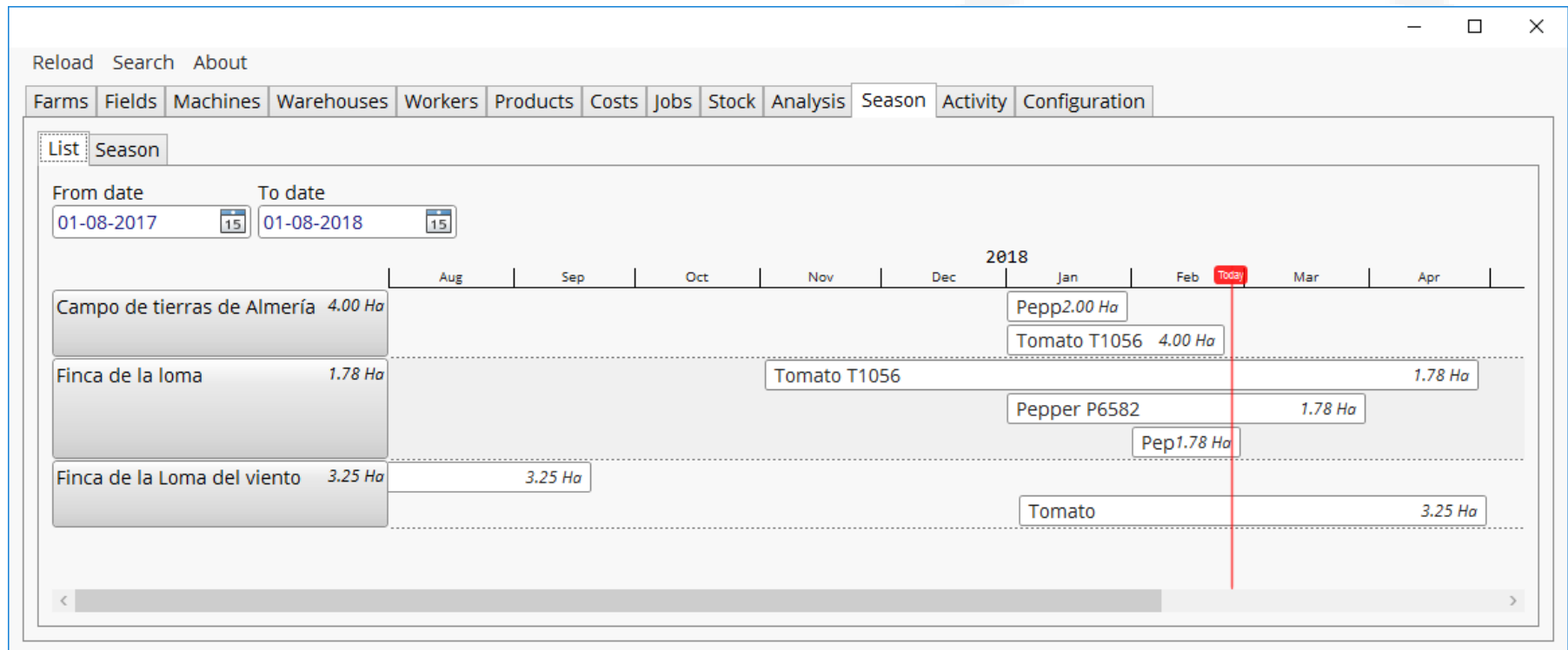


The screenshot displays the Noah Trunk application interface. The main window has a menu bar with 'Search', 'Utilities', and 'About'. Below it is a 'Demo Noah' user profile. The interface is divided into several sections:

- Navigation Tabs:** Customers, Services, Trials, Research, Plates, Characteristics, Configuration, Diary, Accessions, Varieties, Productions, Entries, Outputs, Business.
- Task Management Section:**
  - Task:** A form with a 'Title' field containing 'Prepare the samples of pepper for Gold Star Seeds' and a 'Message' field containing 'Please, prepare the samples of pepper for Gold Star Seeds'. A 'New task' button is visible.
  - State:** A dropdown menu set to 'Open'.
  - Start date:** A date picker set to 'Thursday, March 1'.
  - Selected users:** A list of users: Anadeto Fernández Gómez and Manuel López.
- SearchFiles Window:** A modal window for searching files.
  - Search:** A text input field containing 'germination'.
  - Filetype:** A dropdown menu set to 'Images (.jpg, .jpeg, .jpe, .png, .bmp)'.
  - From date:** A date picker set to 'Thursday, February 3, 2011'.
  - To date:** A date picker set to 'Wednesday, March 2, 2011'.
  - Table:** A table listing search results.
 

Filename	Size	Directory	Created at	Created by	Object type	Object name
Germination at Day 65 (1).jpg	123.80 KiB		06-10-2017 13:39	Demo Noah	Entry	40308/53
Germination at Day 65 (2).jpg	114.36 KiB		06-10-2017 13:39	Demo Noah	Entry	40308/53
Germination at Day 65 (3).jpg	163.79 KiB		06-10-2017 15:14	Demo Noah	Entry	40308/53
Germination at Day 65.jpg	174.51 KiB		06-10-2017 13:10	Demo Noah	Entry	40308/53

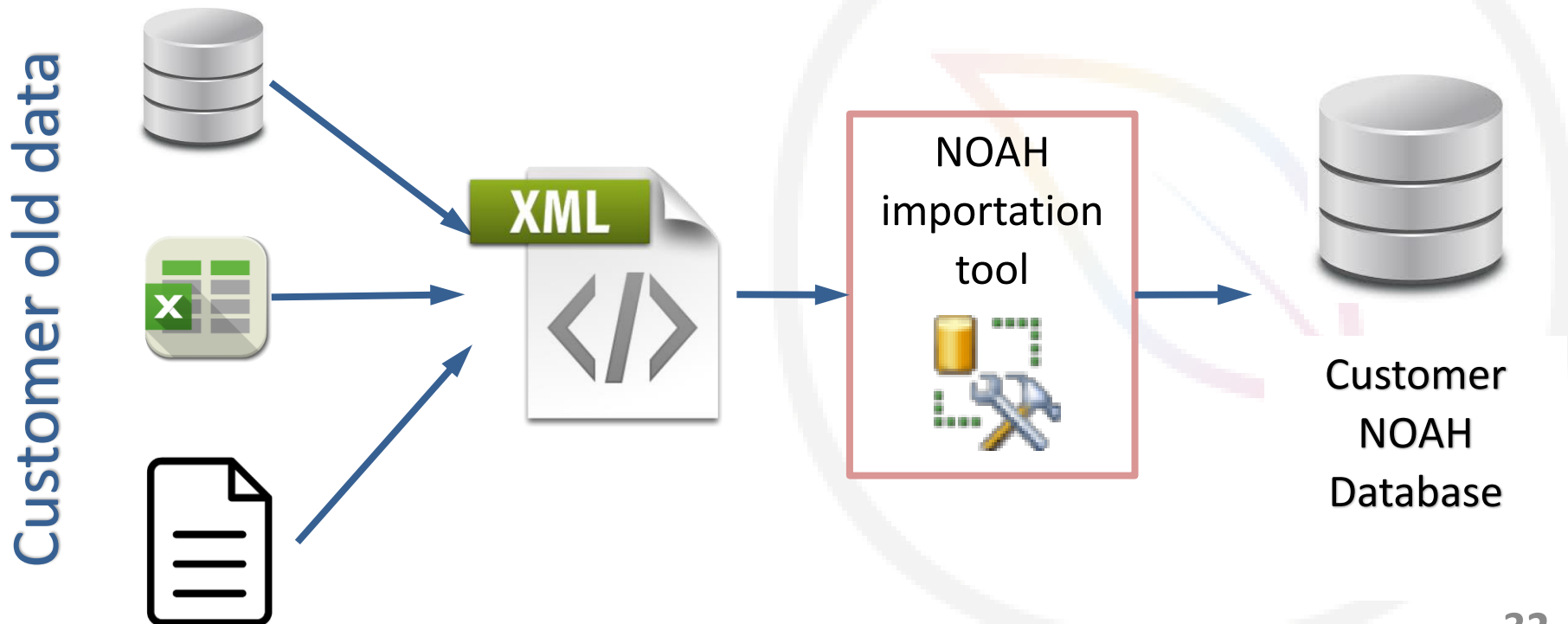
Noah field notebook application allows managing the resources used in research and development tasks: farms, fertilizers, machinery, treatments, utensils, etc.



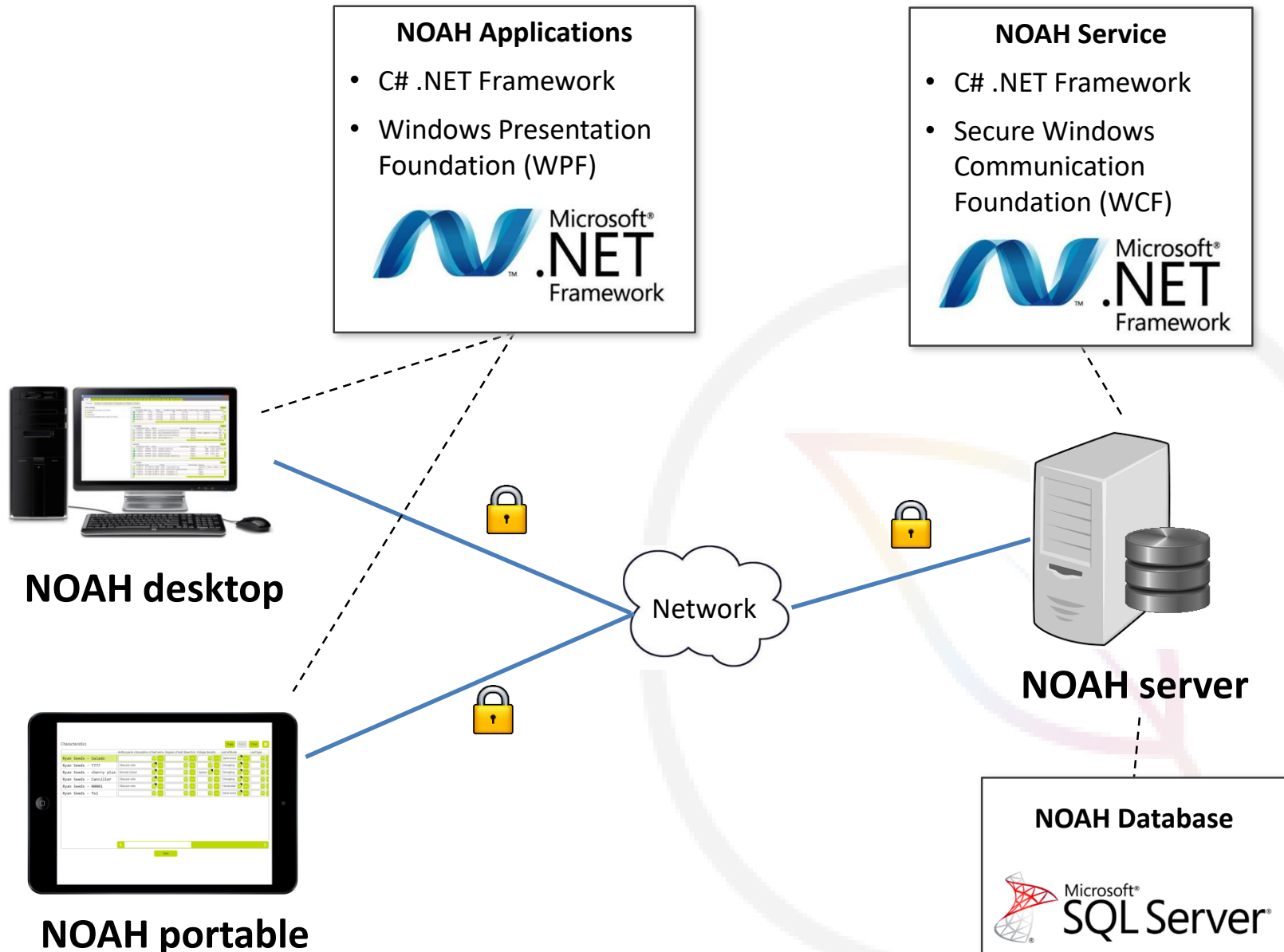
Bullsoft Solutions will never access, under any circumstance, to customer data or customer NOAH Server.

## Customer IT department

- Protocol to import old data
- Apply NOAH updates







# NOAH

plant germplasm ERP



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