

# MusaTab User's manual

Version 1.0 for Android



## *Musa* Germplasm Information System Database



MusaNet – June 2016



Bioversity – June 2016

## Revision History

Name	Date	Reason For Changes	Version
Max Ruas	04/05/2016	Original document	1.0
	03/06/2016	Start of the translation on annexes	1.1
	10/05/2017	Editing	1.2
	09/06/2017	Editing	1.3

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## INTRODUCTION

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MusaTab is an Android™ application developed under the financing of a European project led by the West and Central Africa organization dedicated to Banana and Plantain (CARBAP).

It contains the functions required for the following operations:

- Recording observations in the field
- Entering/consulting data and photos of plants of accessions
- Scoring with the *Musa spp.* descriptors

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## 1. SYSTEM REQUIREMENTS

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The minimum requirement to run the application is a mobile device with a screen of 10 inches running an Android™ Operating System from at least version 3. The application was developed and tested for Samsung Galaxy Tab 2 10". The application needs 23 Mb free space to install.

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## 2. INSTALLATION OF MUSATAB

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The software is available from the Google Play™ store at the following address: <https://play.google.com/store/apps/details?id=com.mgis.bam>. On the mobile device open the Google Play™ store and search for MusaTab, you will be directed to the dedicated page for installing the application on your device. Once installed, a new icon appears in your list of applications. If you want to access to the application from the home screen, drag and drop the application from applications list.

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## 3. EXECUTION OF MUSATAB

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Once the application is installed on your mobile device, tap on the icon to launch it.

## SOFTWARE ORGANIZATION

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### 1. WELCOME PAGE

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Once launched the first screen to appear is the following one:

MusaNet

Descriptors for banana

First name Max

Last name Ruas

Position Bioversity

Login

free for personal use

CARBAP

European Union

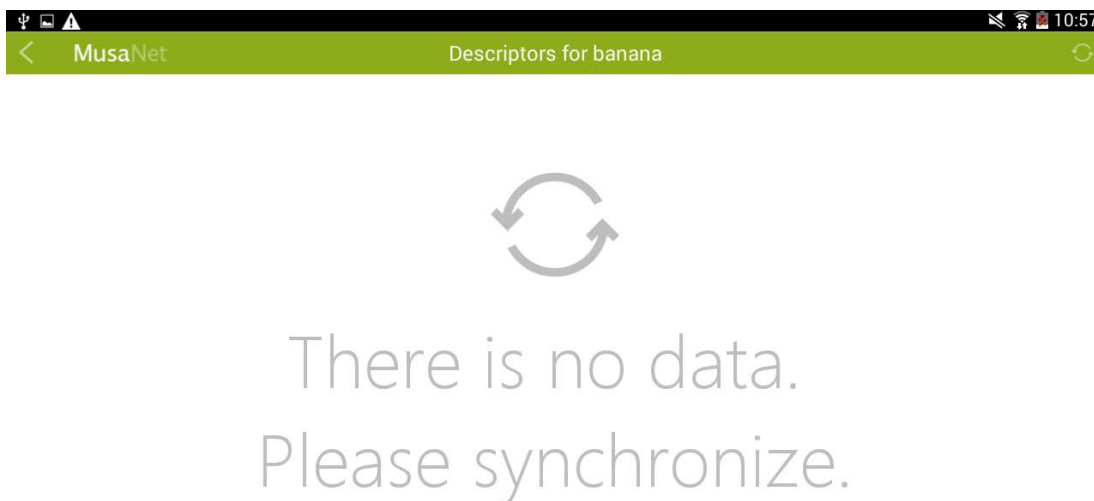
Bioversity International

Cult. Sardos at NRCB collection, India

On this screen it is mandatory to fill the three boxes to start working with the application. The information provided on this screen will be linked to the observation session. The purpose is not to track user activities but to link to further studies, e.g. the comparison of observations on same accession, between different researchers, to identify difficult or ambiguous descriptors. Once the information is provided, tap on the **Login** button.

## 2. MAIN PAGE

The next page after the welcome page is the following one:



The application installs without any data, which is why you see the above message.

This page is divided in two components: the header and the body. The header and body will change according to the actions you will perform. The header is always composed of three parts: left, middle and right.



The left part allows you to navigate backward in the application.

The middle part changes only when you are accessing the page to record observations on a plant to display the accession name, the cycle and the plant number (see example below).



The right part displays contextual action "button" in the example above two action buttons are visible.

Now you need to feed the applications with data. The application uses JSON file to both update data and record data. To update data you need two files with each a specific name: the observations.json file and the descriptors.json file and photos or drawing files.

### Observations.json file:

This file contains the list of accessions, the cycle of observation and the plants to observe.

To know more details about the format please see Annex 02.

### Descriptors.json file:

This file contains the list of descriptors you want to work with.

To know more details about the format please see Annex 02.

### Photos or drawing files:

These files are linked to different descriptors and will be used by the application to help you during the observation process.

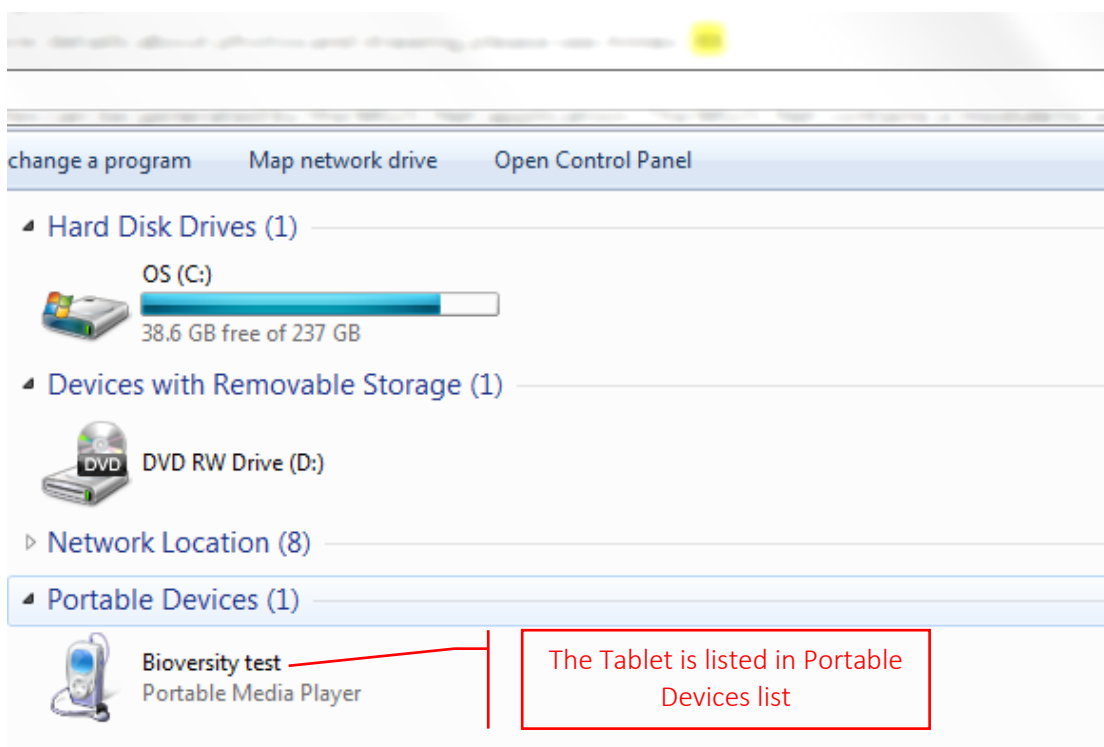
To know more details about photos and drawings, please see Annex 02.

The JSON files can be generated by the MGIS.Net application. The MGIS.Net contains a module to select the accessions you want to work with and the list of descriptors you want to observe. MGIS.Net is available on the MGIS web site at the following address: <https://www.crop-diversity.org/mgis/software>.

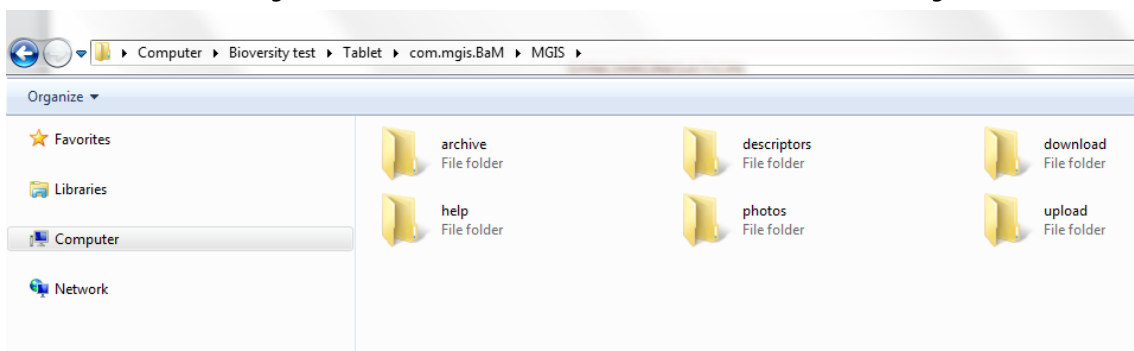
For the time being, three descriptors files will be made available from MGIS web site. One file will contains the 120 descriptors for morpho-taxonomy. Even though the tablet allows works with the 120 descriptors, we noticed a delay in the application. The second one will contain the minimum set of descriptors for *Musa* (33 descriptors) and the third file will contains the Plantain descriptors (33 descriptors).

### 3. SYNCHRONISATION

The synchronization between the tablet and the PC is done through a USB cable. When you are ready, connect your tablet to your PC. Once connected, you will see the tablet in the windows explorer (If it is the first time you connect your tablet you will have to wait for the drivers to install).



Browse the tablet content by double clicking on the device (in my example Bioversity test). Double click on the Tablet, then on com.mgis.BAM folder and at last on MGIS folder to see the following folders:



The download folder is the folder where to copy the observations.json, descriptors.json as well as the photos and drawing files to feed the application.

The upload folder is the folder that contains the observations recorded on your tablet.

To perform the update of the MusaTab, you must launch the MGIS.Net application. Once it is launched go directly to the fourth tab (called **Exchange with MusaTab**). This tab will allow you to generate the files required by MusaTab to perform observations in the field. The application will help you to select the accessions you want to work with, to define which cycle you are currently observing as well as the number of plants

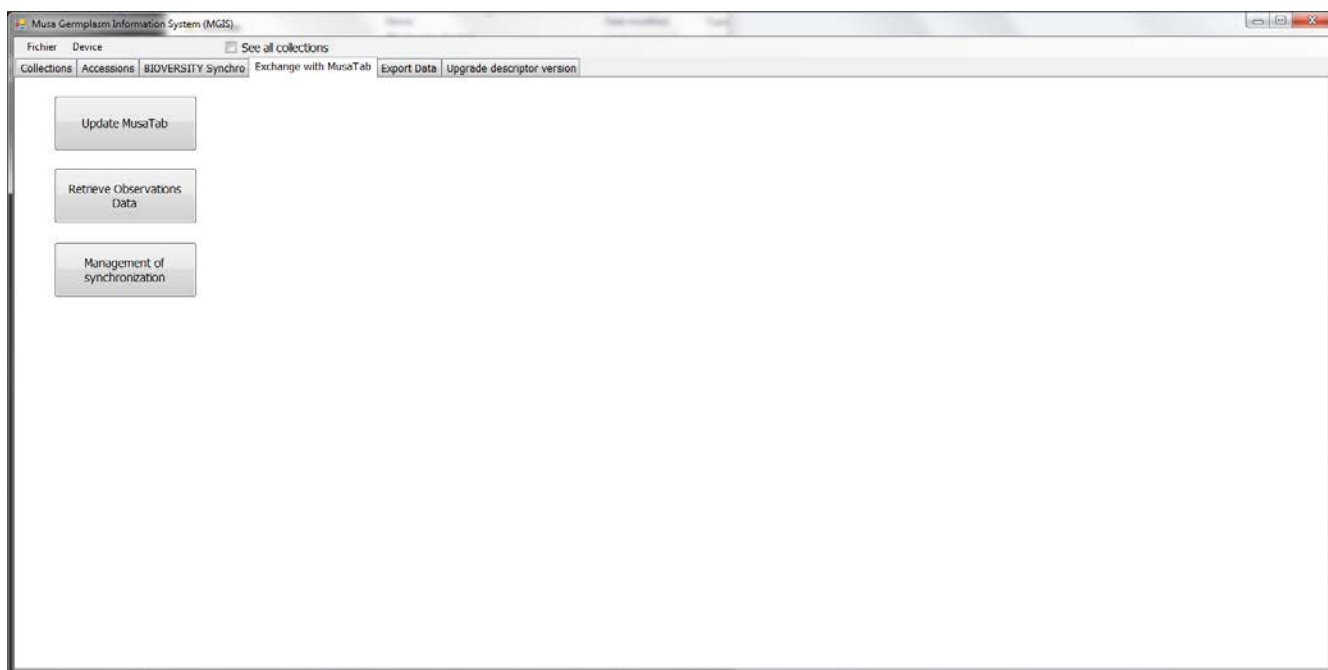
observed by cycle and by accession. You will be able to select the descriptors you want to observe. The files will be automatically copied to the connected tablet using a USB cable.

From this tab it will be also possible to import into your database the observations made in the field using MusaTab. Again, the transfer will be done using a USB cable.

The first button labeled **Update MusaTab** will start the creation of files and their export to the tablet.

The second button labelled **Retrieve Observations Data** will start the import of data recorded in MusaTab.

The third button labelled **Managment of synchronization** is for working with previously imported data recorded in MusaTab.





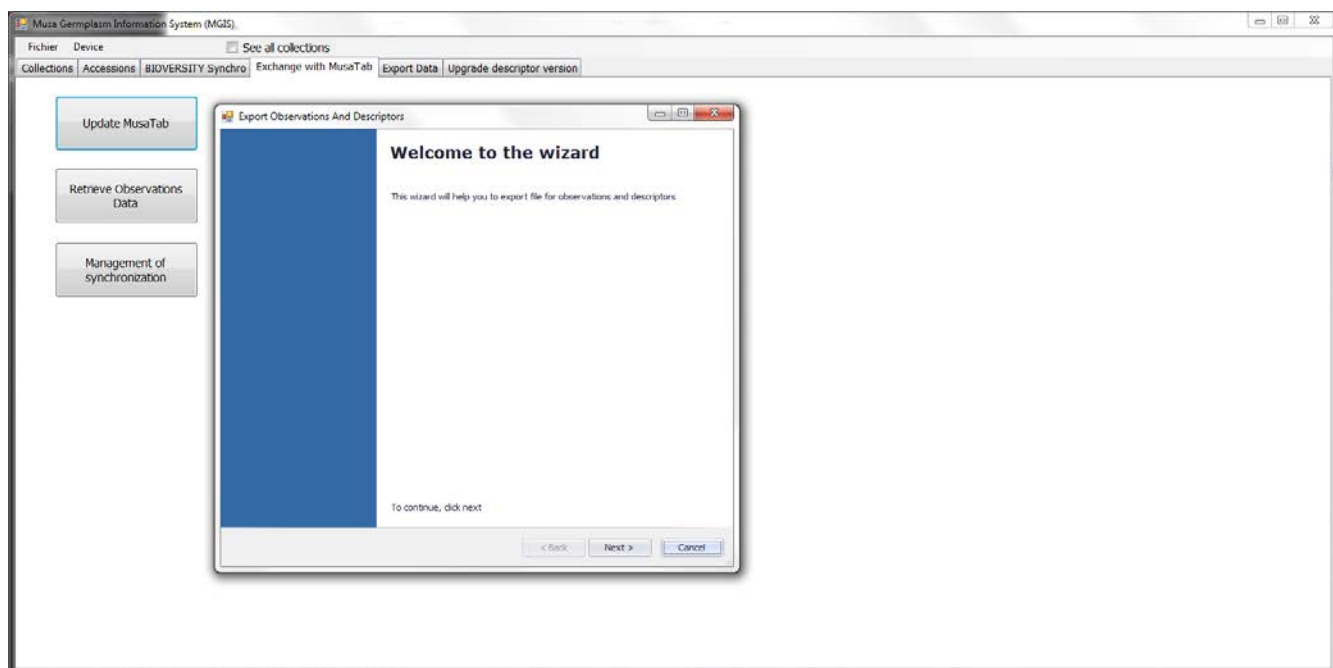
---

## UPDATE MUSATAB

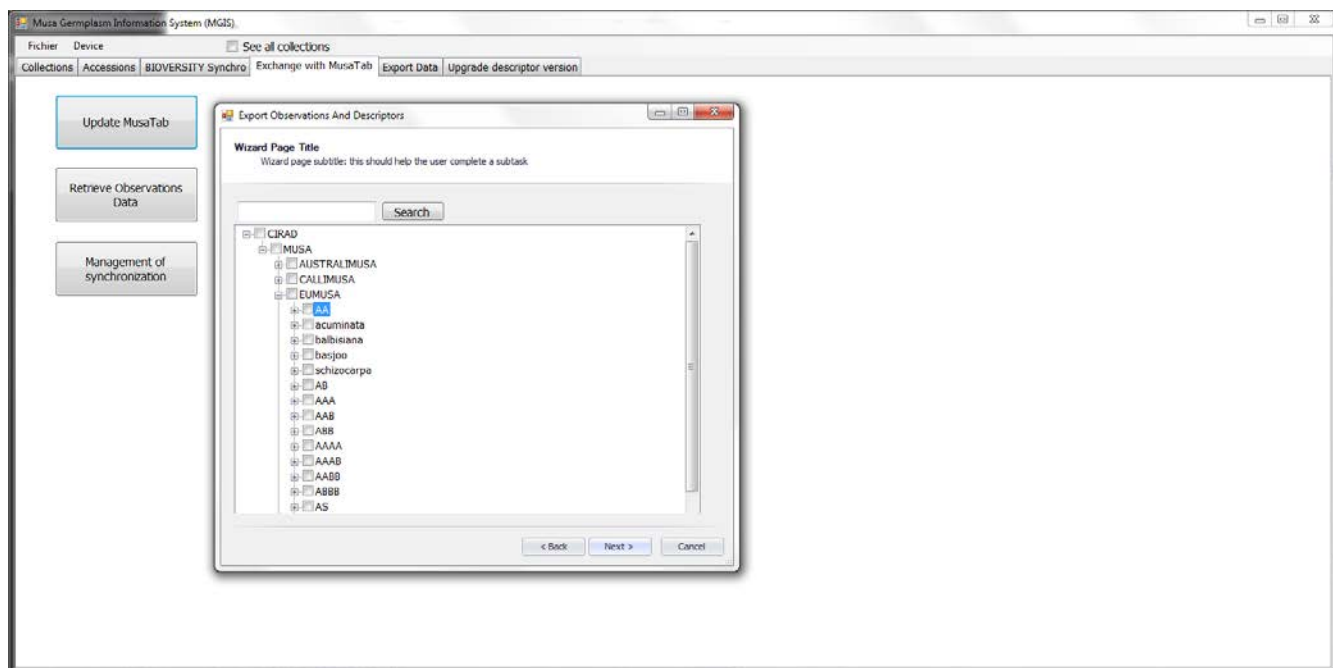
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By clicking on the **Update MusaTab** button, you will launch the creation of the files to work with MusaTab. This button launches a wizard that will help you to select the accessions you want to work with as well as the descriptors you want to observe. At the end of the Wizard, the files will be automatically copied to the tablet in the correct folder. You will then have to launch the synchronization in MusaTab. We will mention it in this document but please refer to the MusaTab Users' document.

This is the first window of the wizard.



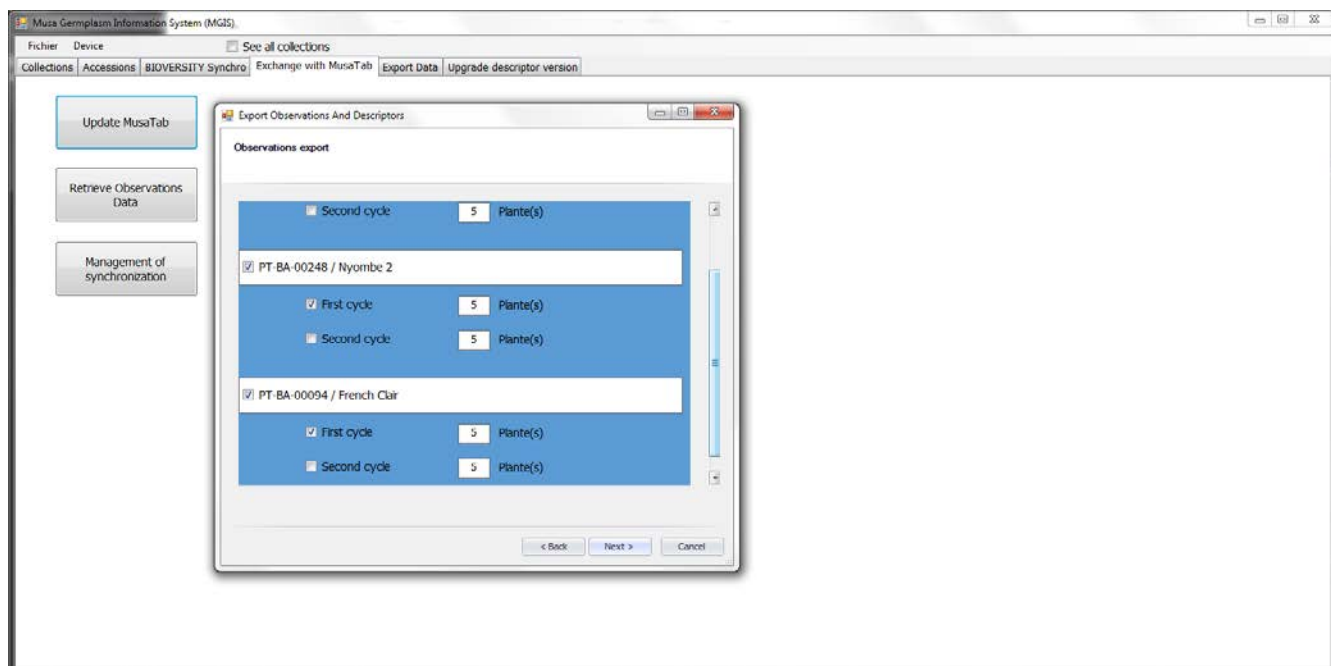
Click on the next button to select the accessions you plan to work with.  
Below is the window for selecting the accessions:



Click on the plus sign to open the tree. Click the tickbox on the left side of the accession name to select the accession. Once you have selected the accession, click on the next button.

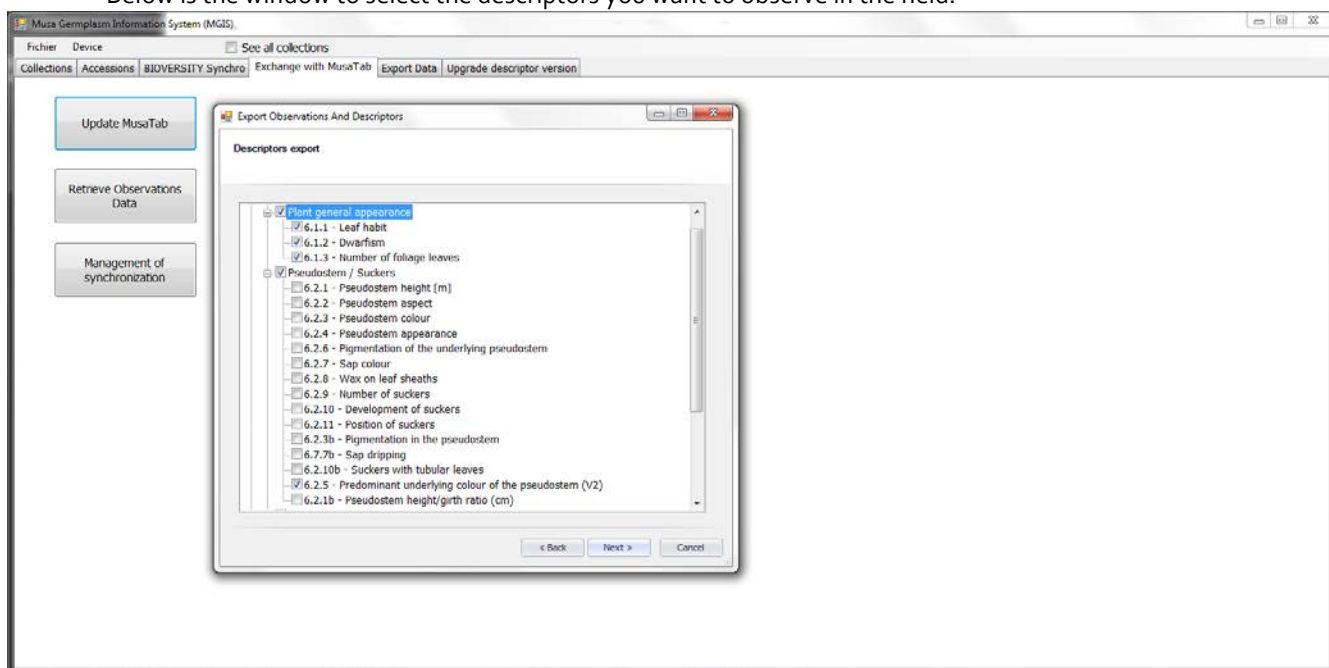
The next window will ask you to decide which cycle you want to score and the number of plants per accession that you want to observe. By default the number of plants is the number of plants set for each accession. This number can be changed in the accession window, please go to chapter X.

Below is the window to decide on which cycle to score.



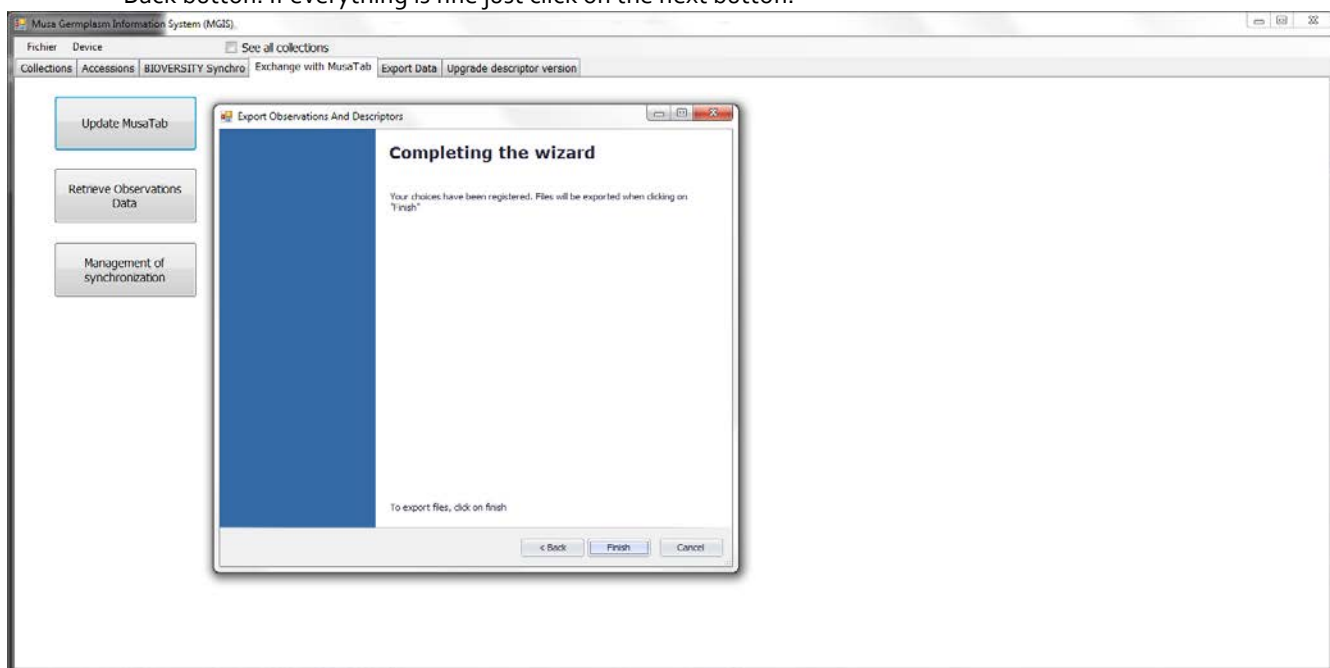
Use the scroll bar on the right side of the accessions to perform the task for each accession selected. Once this activity is completed, click on the next button.

Below is the window to select the descriptors you want to observe in the field.

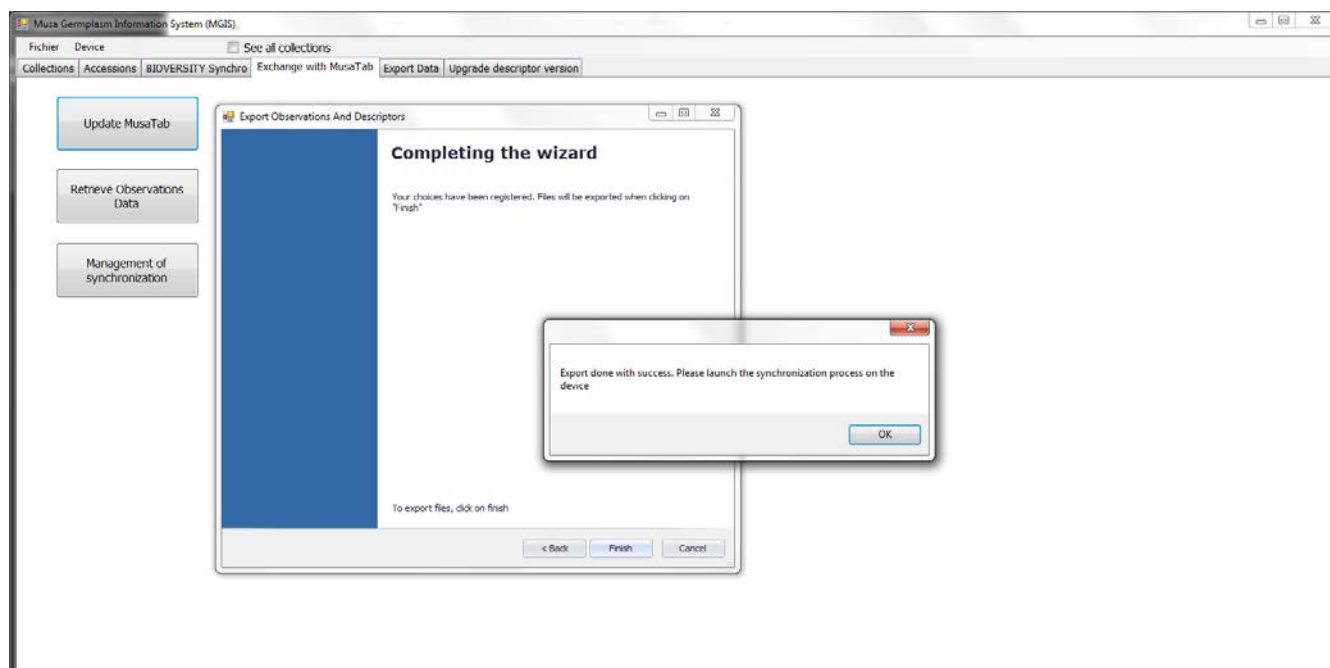



Click on the plus sign to open the tree. Click the tickbox on left side of the descriptor name to select the descriptor. Once you are ok with the list of descriptors, click on the next button.

This is the last window of the wizard; you can still modify the accessions in the descriptors list by clicking on the Back button. If everything is fine just click on the next button.



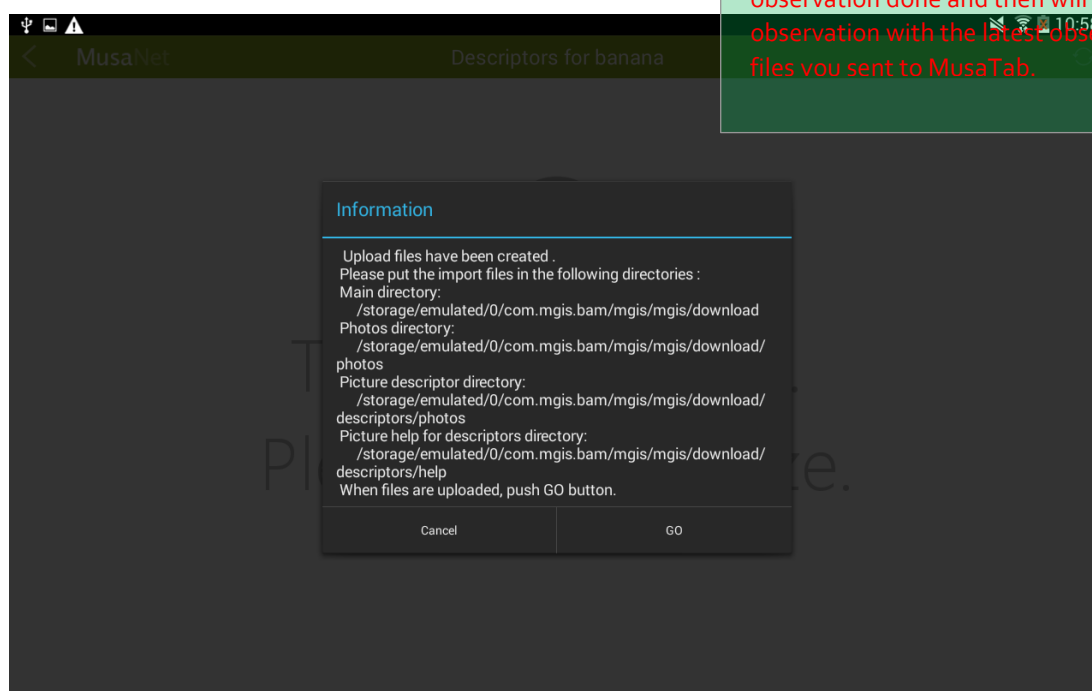
After a while the following message of success might appear.



The synchronization is started from the tablet by taping the  on top right of the main page. A popup window appears (see the screenshot below).



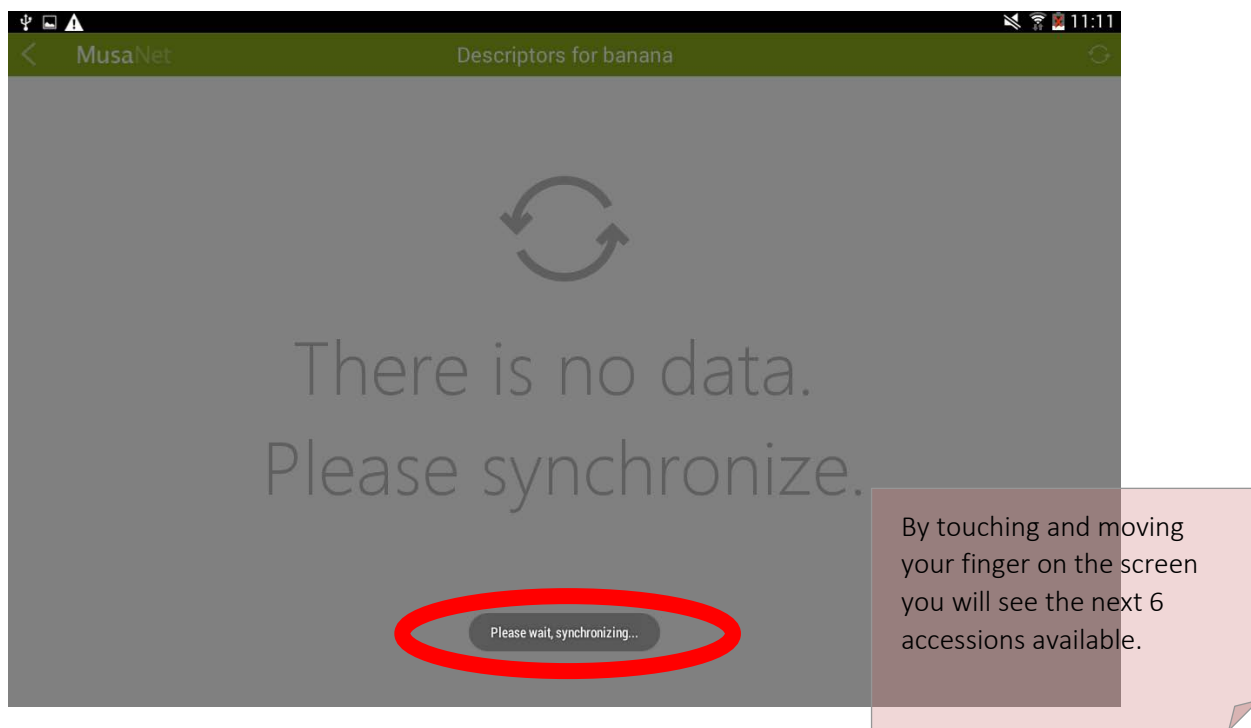
It is important to know that a tap on the synchronization icon will first backup the observation done and then will reset the observation with the latest observation files you sent to MusaTab.



Now working with your computer, locate the files to copy and copy the observations.json, descriptors.json into the Computer\Device Name\Tablet\com.mgis.BaM\MGIS\download folder. Once these files have been copied copy the photos and drawings into the Computer\Device Name\Tablet\com.mgis.BaM\MGIS\download\descriptors\photos folder.

Once they are copied, go to your tablet and tap on the GO, at the bottom right of the information popup message.


You will be informed about the ongoing process:

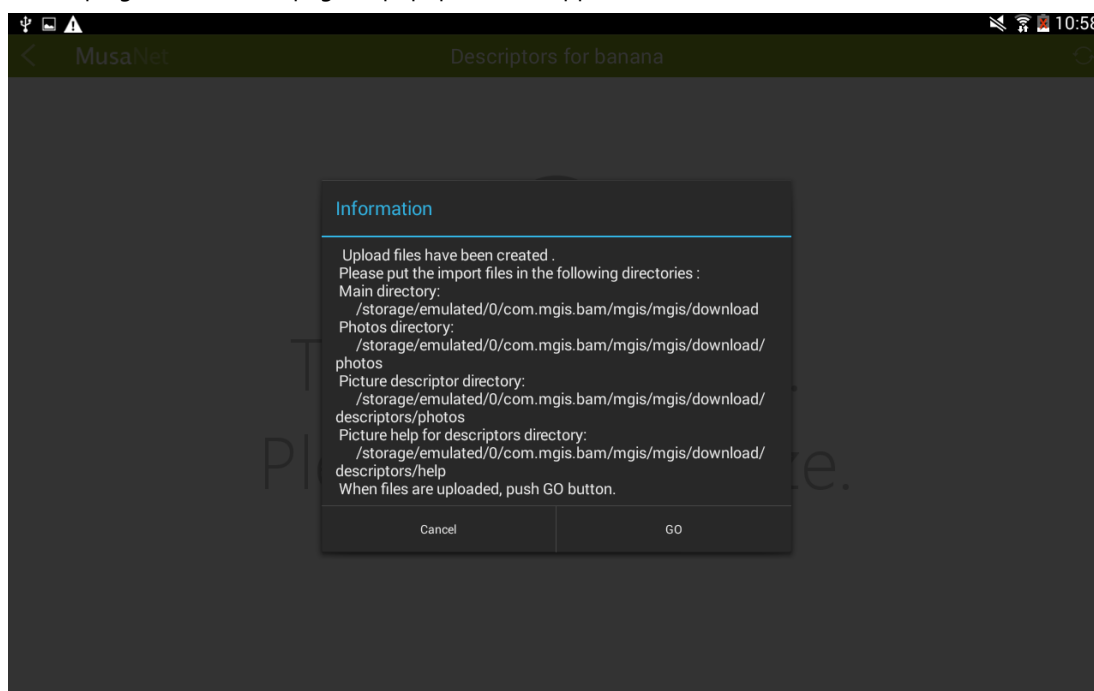


Once the synchronization is done the page is populated by tiles named with the accession number and accession name of the accessions you plan to characterize. An example is shown below.

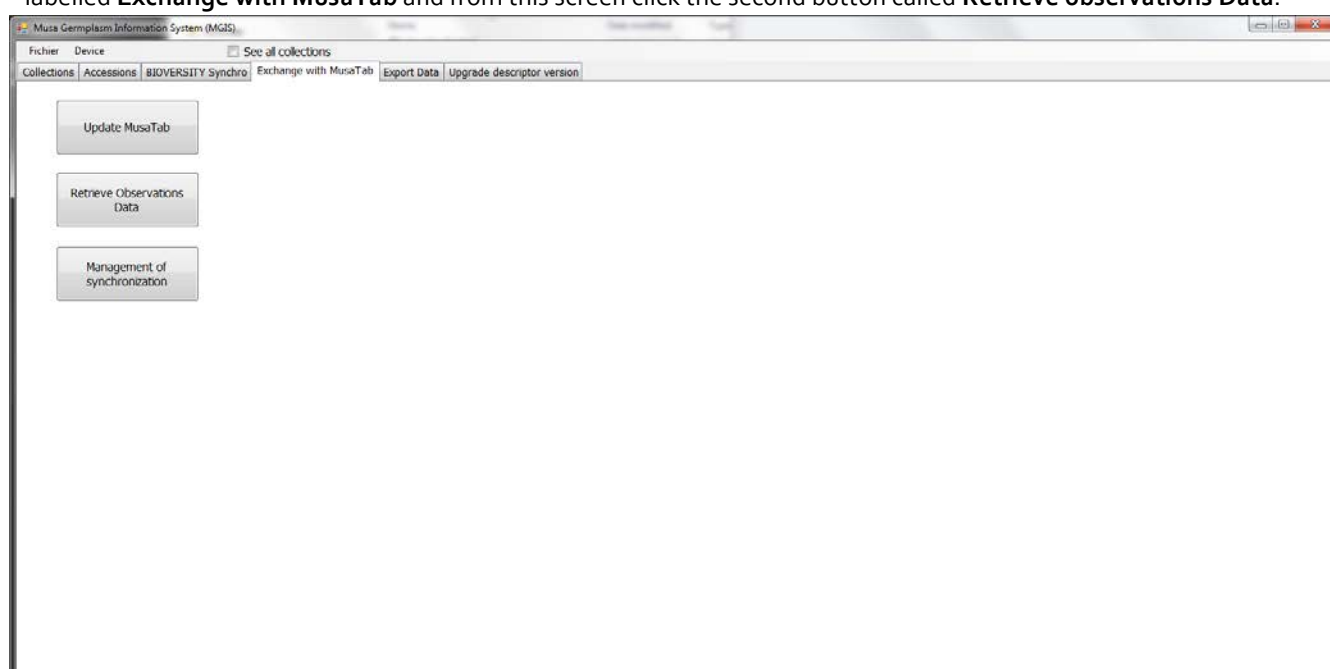


## UPDATE MGIS.NET

Once you have recorded your observation on MusaTab, you will be able to import them into your local MGIS database by using MGIS.Net software. To do so you need first to tap on the synchronize icon  of MusaTab on top right of the main page. A popup window appears (see screenshot below).



Tap on the Go button to launch the synchronization. If you did not generate a new observations file with MGIS.Net MusaTab will use the latest observations file you uploaded on the tablet and therefore you will get back to the original list of accessions but without any observations. Once the synchronization is done on the tablet, connect the tablet with a USB cable to your PC. Then launch the MGIS.Net application on the PC in the main window, click on the fourth tab labelled **Exchange with MusaTab** and from this screen click the second button called **Retrieve observations Data**.



Wait few seconds and if everything is ok, you will see the following screen.

File name	Accessions name	Cycle	Plant	Observation	Observed descriptors
observations_1605	PT-BA-00169 Lagun Vunalir PT-BA-00157 Kojja	Cycle 1	1	0bdc0a06-e654-4fb5-8 de437f0e-3475-42bb-5	Leaf habit Dwarfism Number of foliage leaves Petiole canal of the third leaf (V2) Edge of petiole margin (rim) (V2) Blotches colour (petiole base) – scored on the upper leaf sheath (V2)

**MusaTab**

2 - Margins erect

**Import**

**MGIS**

1 - Margins spreading

From this screen you will be able to look at the observations you have recorded with the tablet. From there you can decide to update MGIS database by clicking on the Import button.

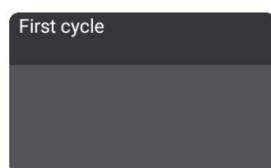
Select the descriptors you are interested in in the list of descriptors. For convenience, the current value (if any) stored in MGIS database is displayed in the bottom text box labelled MGIS. If the value observed in the field (coming from MusaTab) differs from the value already in MGIS, it appears in Orange in the text box labelled MusaTab.

*MGIS manages accession level information. That means that the data observed and collected for several plants of one accession are not saved in the database. Only the value of one descriptor of one plant of an accession is recorded in the database. Also MGIS does not keep records of the different values observed over time for an accession: the latest observation replaces the previous one.*

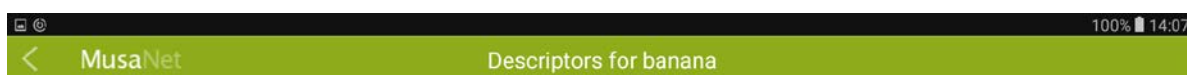
#### 4. RECORDING OBSERVATION

The record of an observation starts by tapping a tab on the body of the main page.

The content of the body will change and will display the list of cycles available for this accession.

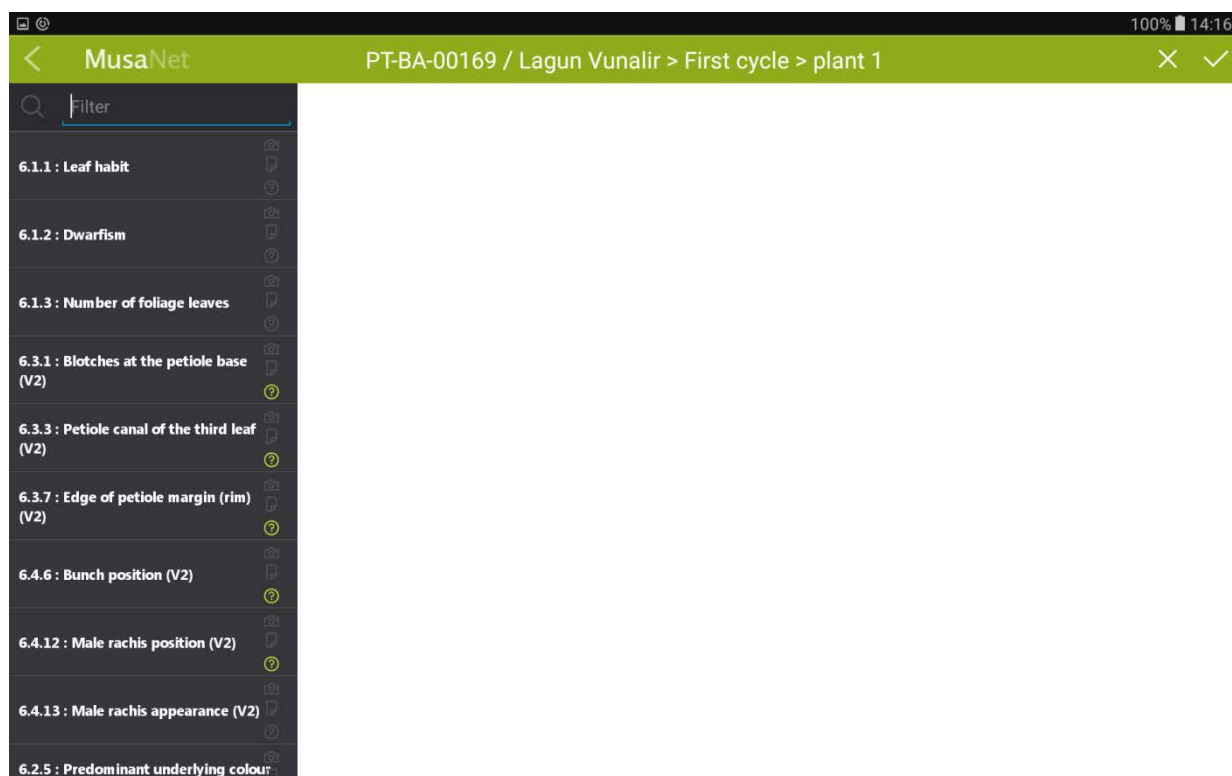


Tap on the cycle you want to work on to see the list of plants to characterize for this accession.

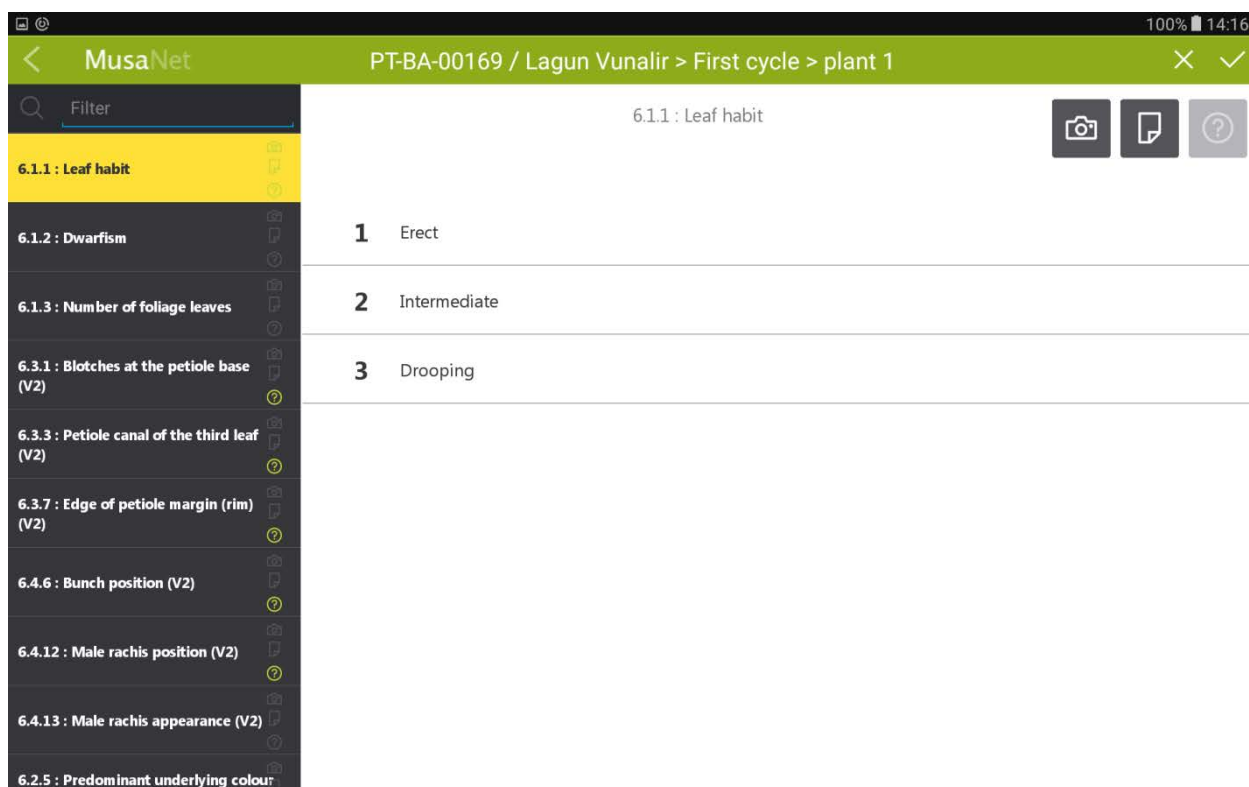




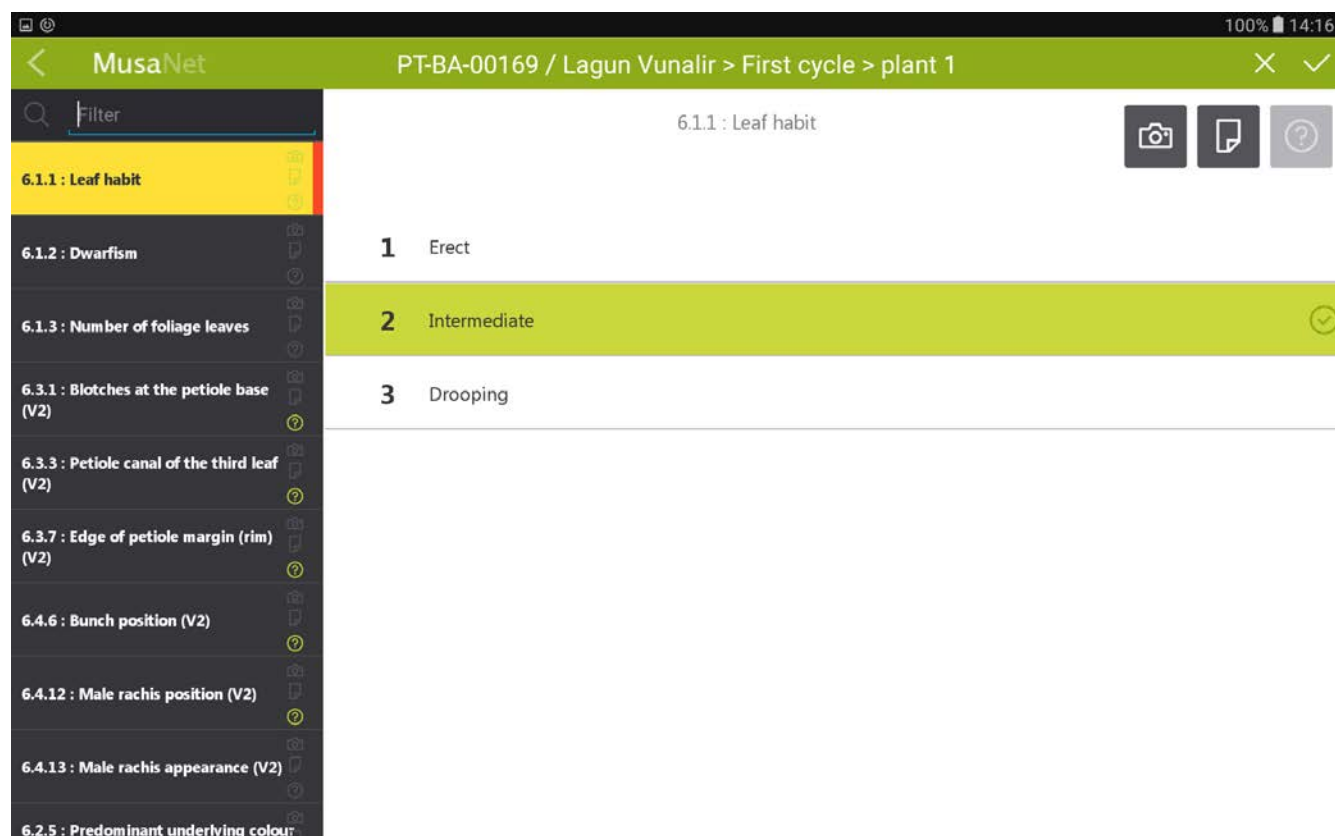
Tap on the plant of your choice and start your characterization.



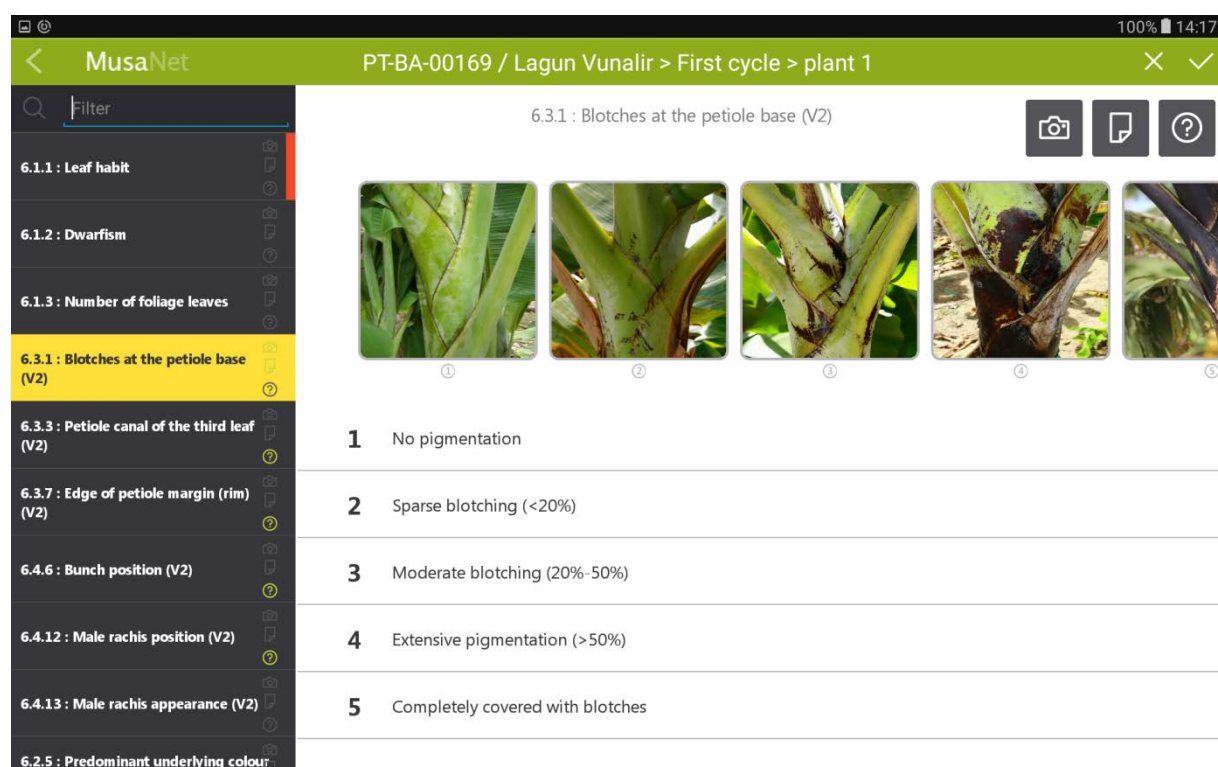
By default no descriptor is selected, so tap on one descriptor on the left column to see the available choices.



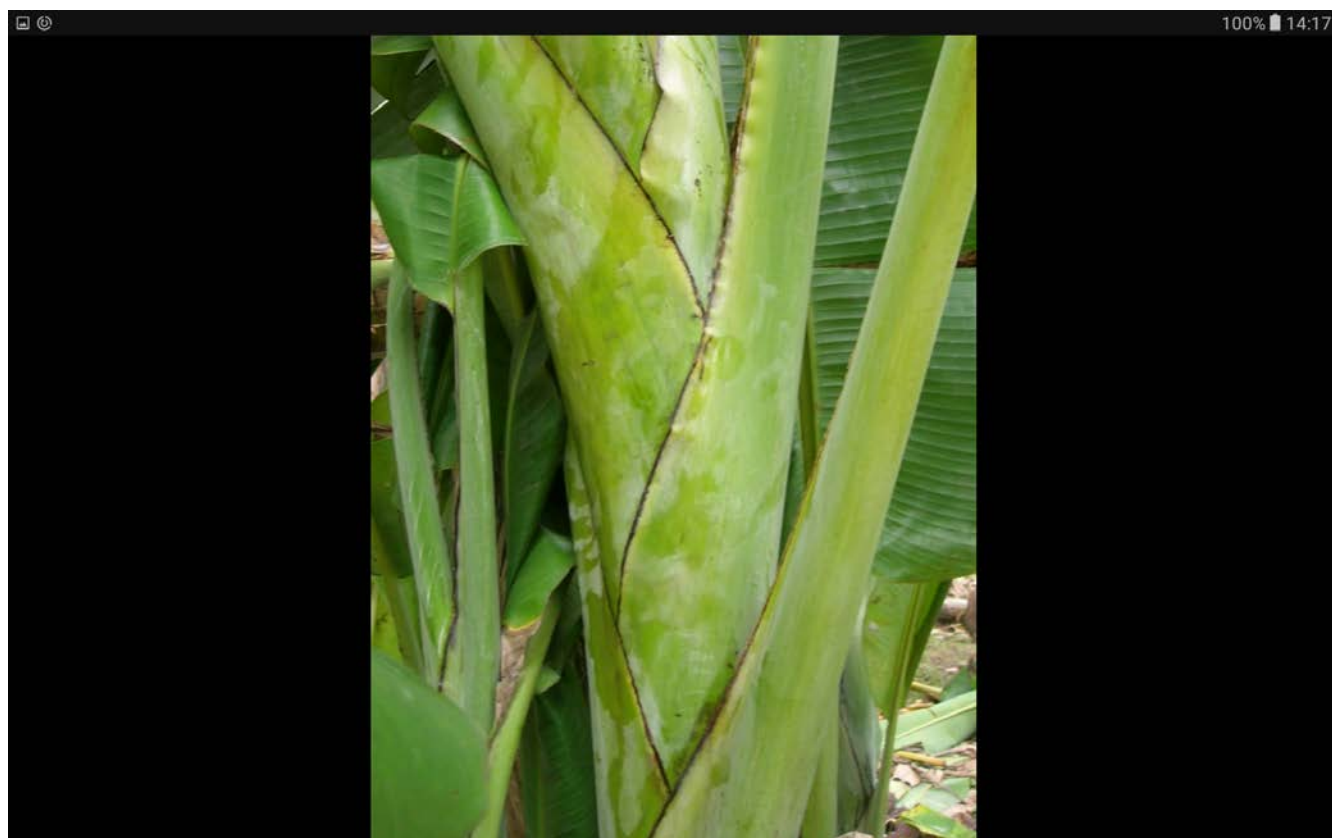
You are now ready to perform the observations using MusaTab. Once you have selected a value by tapping one of the choices. The corresponding line is highlighted in green and a little red band appears on the right side of the selected descriptor in the descriptors list.



To score other descriptors in the list, just tap the descriptor you are interested in.

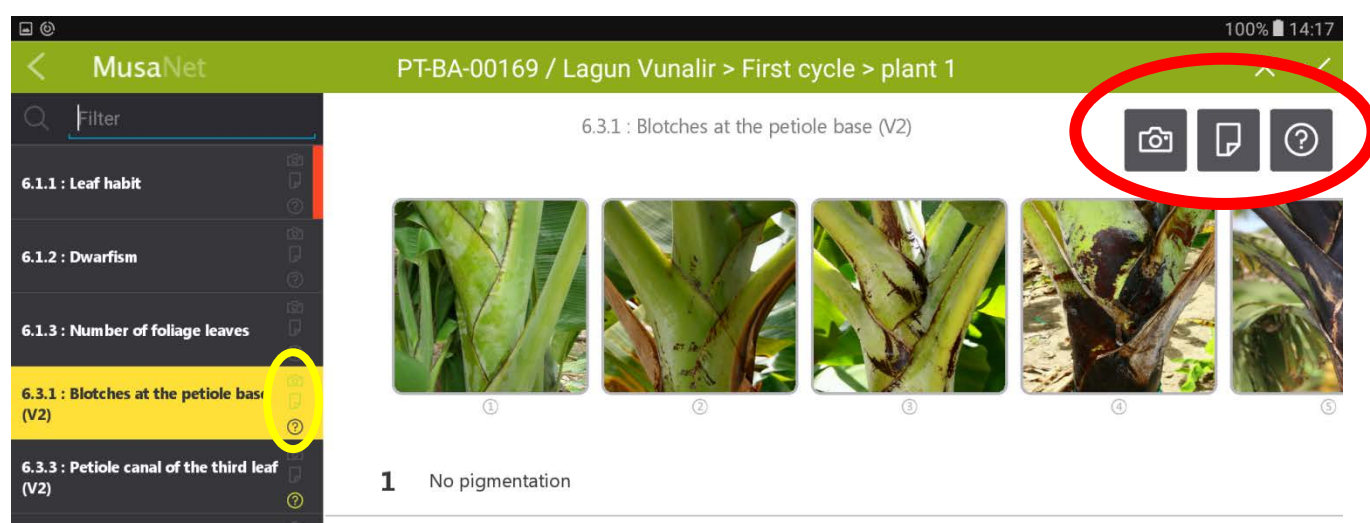


Some descriptors come with photos to help you better understand what to score, with an example attached to each value. If you tap on a photo can you zoom in and out.



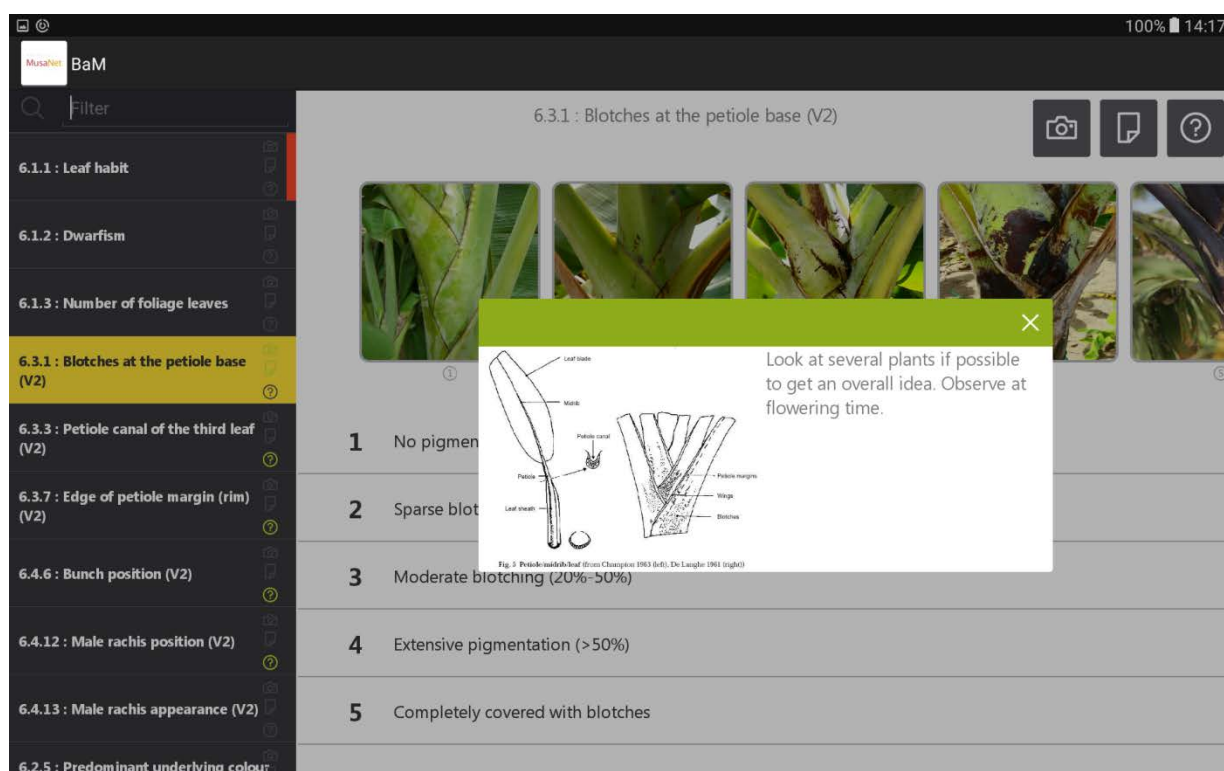
Tap again to come back to the previous screen or tap, hold and move left the photo to see the next photo.

You will notice the presence of 3 different icons on the top right of the main screen (Red circle) these icons are repeated on the right side next to the descriptor name in the descriptors list (Yellow circle).



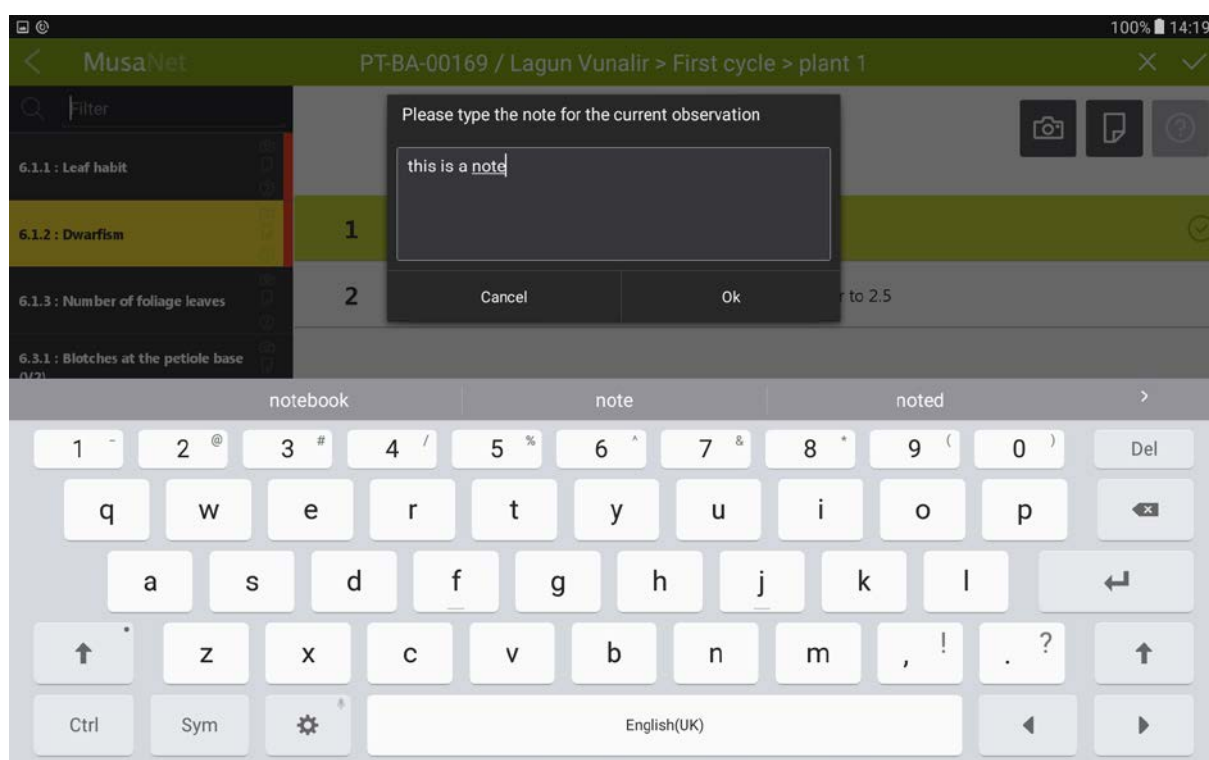
If in the descriptors list the icon is highlighted in green it means that information is attached to it. If the descriptor is selected it is highlighted in yellow and therefore the color of the icon switches from green to grey.

To see the attached information, just tap on the corresponding icon in the top right of the screen. In this case, if we tap on the question mark icon, we get the following information.

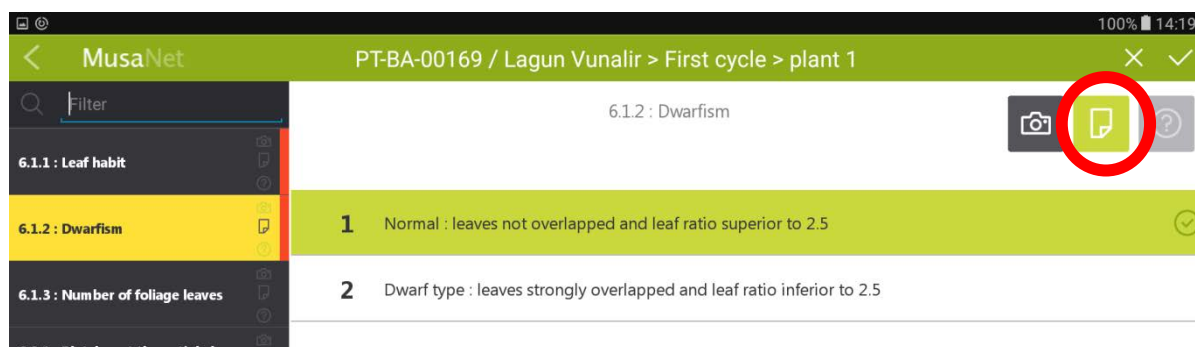


The question mark is the way to provide help related to the selected descriptor. In this specific case, it displays a drawing and text to help better observe the current descriptor. Tap the white cross to close this help box.

By tapping on the file icon, you will be able to record a note related to your observation.



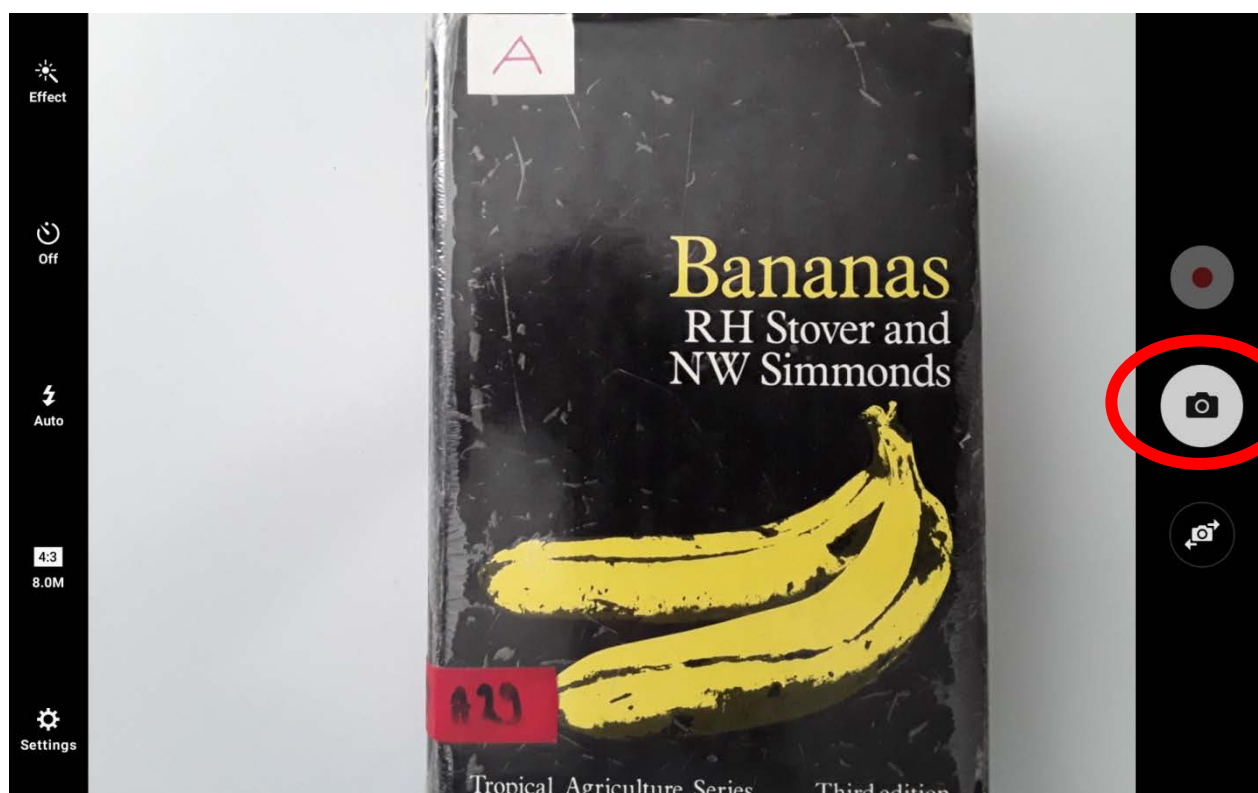
Automatically the virtual keyboard will appear to allow you to record your additional information. Once you are done, tap the Ok button to save it. You will notice that the file icon becomes green. <sup>21</sup>



You can tap on it to see your note and edit it.

By tapping the camera icon, you will get access to the camera of your tablet. You will be able to attach a photo to any descriptor.

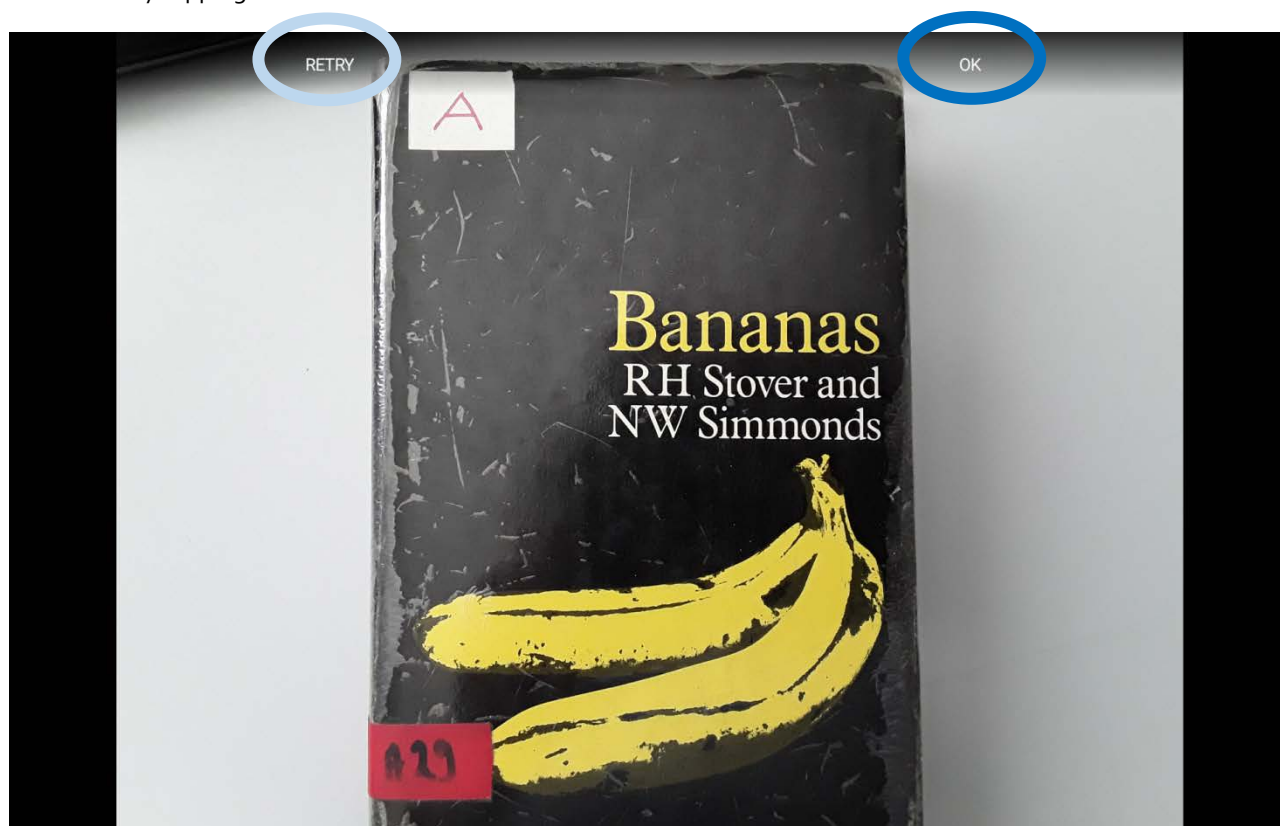
The screen will change and you will have access to the camera application.



From there you can take a picture representing the descriptor. Just tap the camera icon to shoot.



Once your photo is taken, you will have access to it and you can decide to keep it by tapping the OK button or take a better one by tapping the RETRY button.

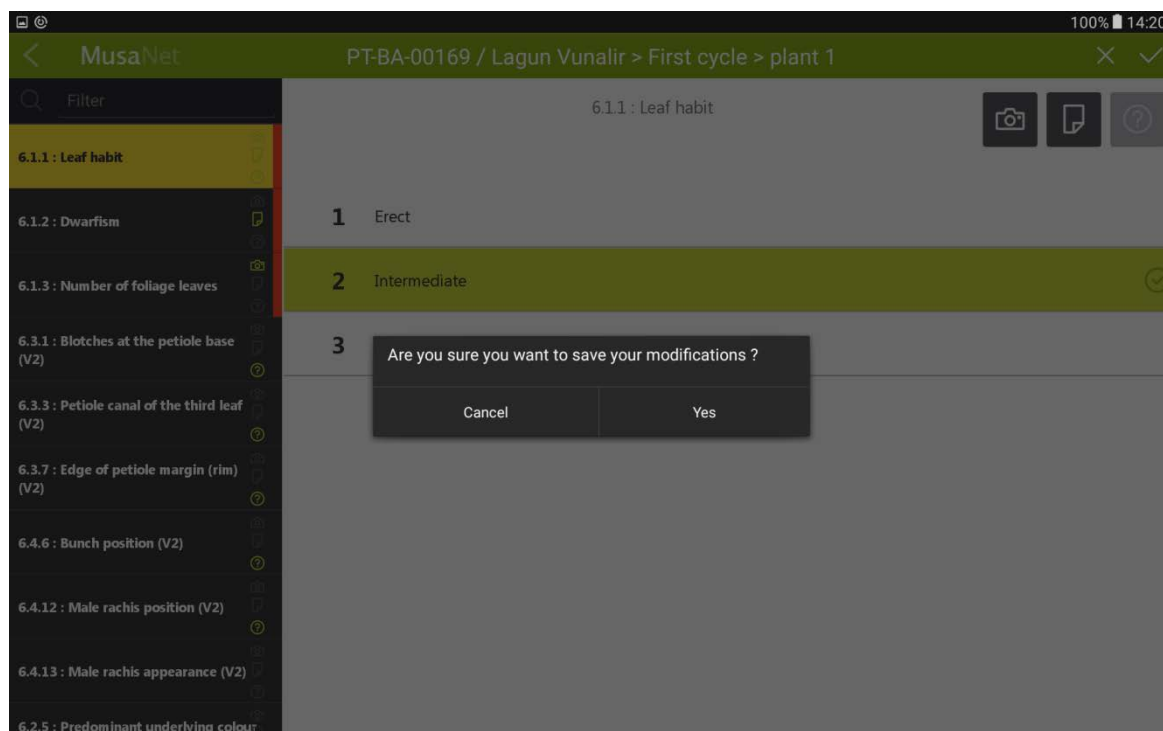


If you click on the OK button, you will come back to MusaTab where the Camera Icon is now highlighted in green.

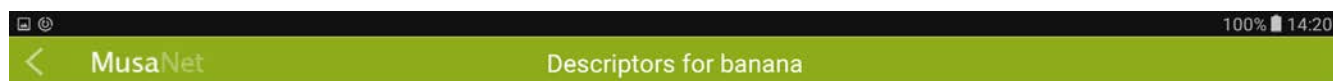


If you tap again on the Camera Icon, you will see the photo and have the possibility to replace it by a new one.

Once you have done your observation, you can save it by tapping the check sign on right corner of the header.

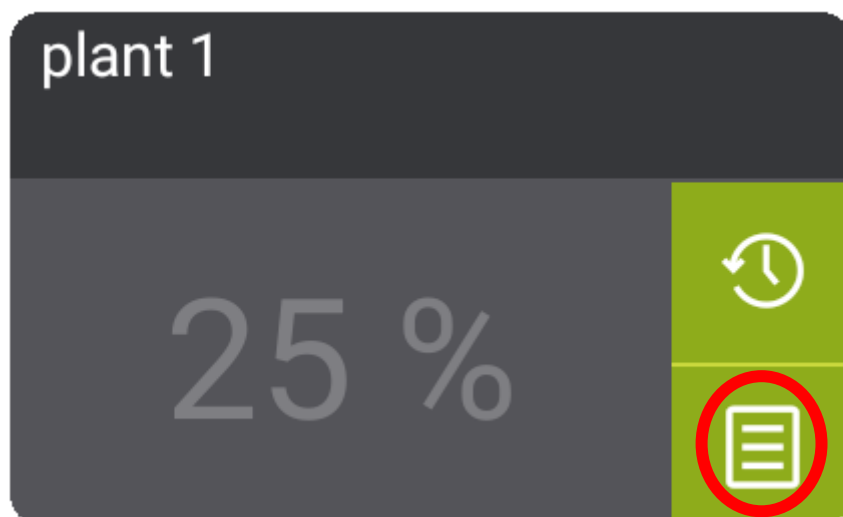


Tap on the Yes button to save your observation or Cancel if you want to continue the observation. By tapping the Yes button you come back to the screen listing the plants to observe.



Please wait. Save in progress ...

You will notice that now the percentage on the Tile of the Plant 1 you scored have been updated to 25%. That means that 25% of the descriptors have been scored. It is possible to see which ones by tapping the notepad icon of the tile.



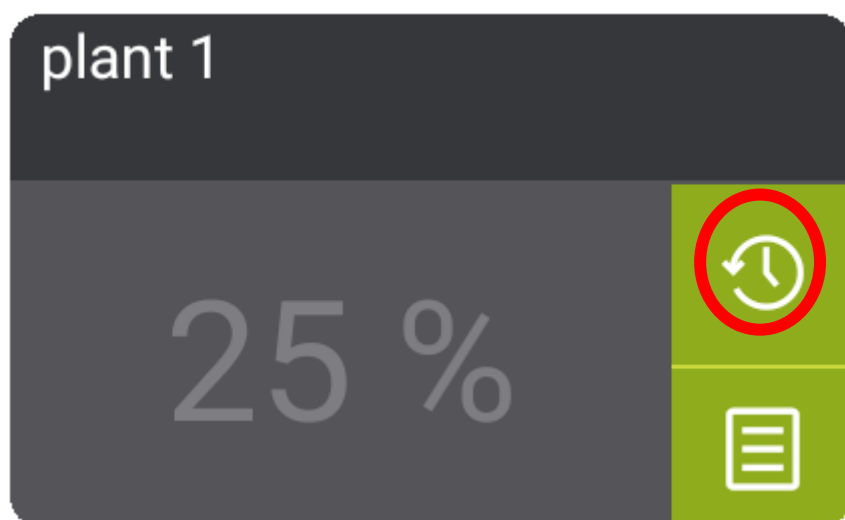
You will jump to a summary of your observation.

MusaNet			Descriptors for banana
PT-BA-00169 / Lagun	First cycle	plant 1	
Vunair			
6.1.1 : Leaf habit	Intermediate		
6.1.2 : Dwarfism	Normal : leaves not overlapped and leaf ratio superior to 2.5		
6.1.3 : Number of foliage leaves	32<>38 (Medium)		
6.3.1 : Blotches at the petiole base (V2)	N / A		
6.3.3 : Petiole canal of the third leaf (V2)	N / A		
6.3.7 : Edge of petiole margin (rim) (V2)	N / A		
6.4.6 : Bunch position (V2)	N / A		
6.4.12 : Male rachis position (V2)	N / A		
6.4.13 : Male rachis appearance (V2)	N / A		
6.2.5 : Predominant underlying colour of the pseudostem (V2)	N / A		
6.4.16 : Male bud length (cm) (V2)	N / A		

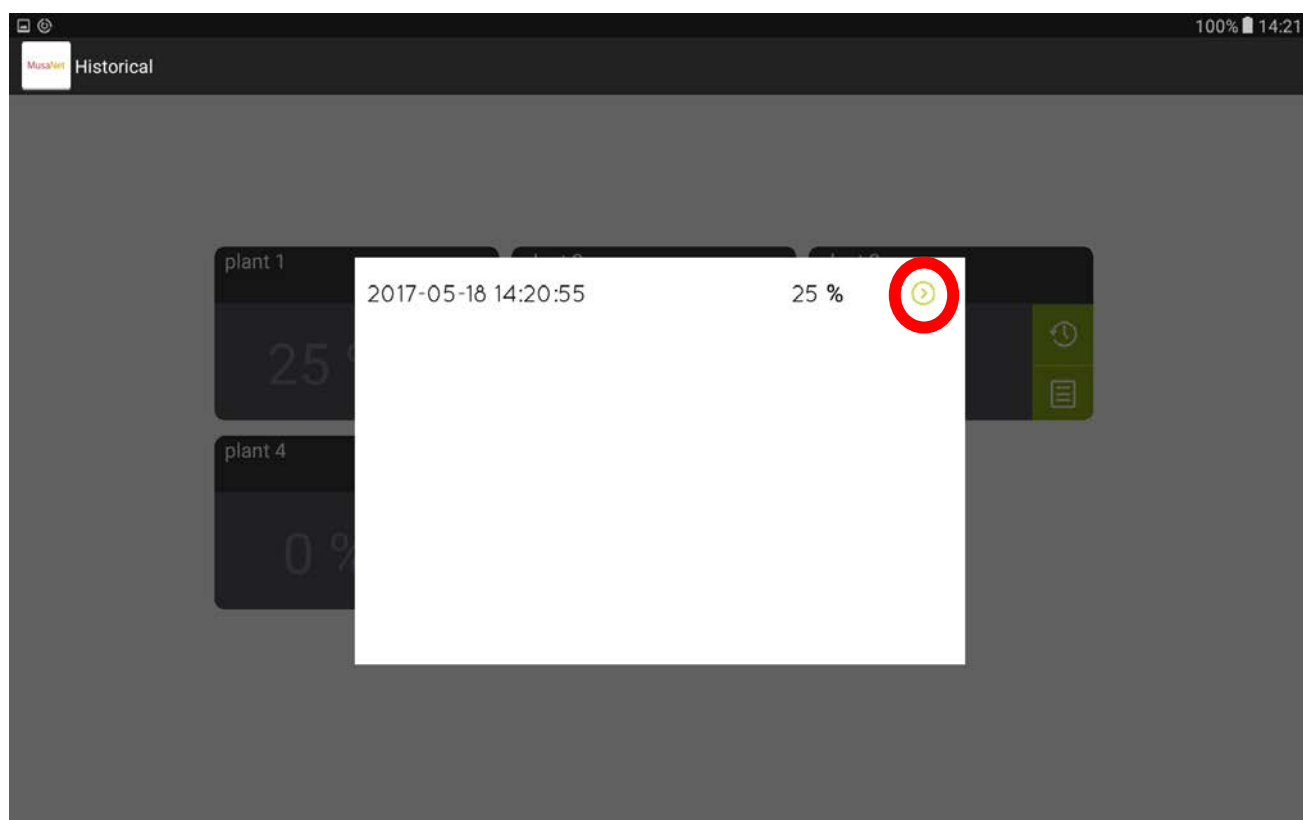
The information is displayed in a tabular format and the icons on the right side inform you about the presence of a note or photo attached to the descriptor.



If you tap on the clock icon of the tile, you will get the details of the observations done for the plant.



You will then see the history of the observations.



If you tap the little green arrow on the right, you will jump directly to the observation screen.

## ANNEXES

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## ANNEX 01

ORGANISATION OF THE SYNCHRONISATION FOLDER

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Organisation of the synchronization folder :

\ : Root of the shared folder. Theoretically, no files should be copied here

\upload\ : Deposit folder for information (i.e. observations) from the tablet during synchronization process. At the root of this folder, only the file containing the information on observations done is present. This file is named « observations\_JJMMAAAA\_HHMMSS.json » where : JJMMAAAA is replaced by the synchronization day and HHMMSS is replaced by the synchronization time.

\upload\photos\ : Folder where the photos from the tablet (i.e. photos taken during observations) are copied during synchronization process. The name of the photo file should be the same as the file name recorded in the observations synchronization file.

\download\ : Deposit folder of information sent to the tablet. Only the synchronization files could be present in this folder.

observations.json : This file contains the list of accessions to integrate into the mobile application. For each accession, the cycles, the plants and the observations (if exists) done are included.

descriptors.json : This file contains the list of descriptors with their information. This file might be present only if you want to synchronize the descriptors list.

\download\photos\ : Folder where to copy the photos corresponding to the previous observations. The name of the photo file should be the same as the file name recorded in the observations synchronization file (observations.json).

\download\descriptors\photos\ : Déposit folder of photos of descriptors. The name of the photo file should be the same as the file name recorded in the descriptors synchronization file (descriptors.json).

\download\descriptors\help\ : Déposit folder of photos used for the help on descriptors. The name of the photo file should be the same as the file name recorded in the descriptors synchronization file (descriptors.json).

## ANNEX O2

The exchanges are done through JSON formatted text file (<http://www.json.org/>). The format of each file is described here after.

### Descriptors

This exchange format is unidirectional and it is only used for synchronisation from PC to Tablet. This file must contain the whole descriptors you plan to work with. MusaTab import everything erasing the previous descriptors list.

#### 3.1.1 FORMAT

The JSON format of descriptors is as follow:

```
[ {
  "idDescriptor": <INTEGER>,
  "code": <TEXT>,
  "titre": <TEXT>,
  "label": <TEXT>,
  "type": <INTEGER>,
  "help" : {
    "labelHelp": <TEXT>,
    "pictoHelp": <TEXT>
  },
  "detail": [ {
    "idDetail": <INTEGER>,
    "labelDetail": <TEXT>,
    "pictoDetail": <TEXT>
  } ]
} ]
```

#### 3.1.2 DETAIL OF THE FORMAT

This format of exchange is a table allowing one to list the whole descriptor required for an observation. The format described here only one occurrence of the table.

**idDescriptor** : Identifier of the descriptor. This identifier is provided by MGIS database in order to guarantee the integrity of the database. This identifier is used for the synchronisation of observations. This identifier must be unique in the database.

**code** : This is the revision number of the descriptor according to the descriptor booklet. This code also allows to order the descriptors on the screen alphabetically.

**titre** : This item describe the short title of a descriptor. This title is displayed in the descriptors list in the screen to record observation.

**label** : This item describe the help for scoring a descriptor. The label is displayed on the screen to record the observation. This label can be empty.

**type** : This item defines the type of descriptor : descriptor with multiple choice or with direct entry. In the case of multiple choice the available option are described in the associated table "detail". The possible types are as follow: 1 = multiple choice / 2 = data entry. In the case of the available value differs from 1 or 2, the descriptor is not taken into account during synchronization.

**labelHelp** : This item allows to fill in the descriptor help. This item is not mandatory.

**pictoHelp** : This item allows to specify the path of the image associated to the help. This item is not mandatory.

**detail** : This table list the different choice and photos available for the selected descriptor. It is possible to have more photos than choice and vice versa. It is also possible to have photo for one descriptor. In this case the item « labelDetail » is not required.

**idDetail** : This item store the choice made in the list of choice. This id might be unique in the descriptor.

**labelDetail** : This item correspond to the label displayed in the list of choice available for a descriptor. When this item is absent or empty, no choice is proposed on the interface to the user.

**pictoDetail** : This item allow to store the path of the relative path of the photo displayed on the screen for enter the observation. The photo name are normalized

#### 3.1.3 EXAMPLE

```
[
  { "id": 1, "code": "o.o.o", "titre": "Entry test", "label": "This descriptor is a test descriptor which no value ", "type": 1,
```

```
{
  "id": 2, "code": "6.2.1", "titre": "Pseudostem height (m)", "label": "(Recorded from the base of the pseudostem to the
  emerging point of the peduncle)", "type": 2, "help": {"labelHelp": "This is an example of help", "pictoHelp":
  "/help/6_2_1.png"}, "detail": [{"label": "<=2"}, {"label": "2.1 to 2.9"}, {"label": ">=3"}]},
  "id": 5, "code": "6.3.1", "titre": "Blotches at petiole base", "label": "", "type": 2, "detail": [{"label": "Sparse blotching", "picto":
  "/descriptors/6_3_1 (1).png"}, {"label": "Moderate blotches", "picto": "/descriptors/6_3_1 (2).png"}, {"label": "Extensive
  pigmentation", "picto": "/descriptors/6_3_1 (3).png"}, {"label": "Without pigmentation", "picto": "/descriptors/6_3_1
  (4).png"}]}
}
```

### 3.2 OBSERVATIONS

This exchange format is two way and can be generated by MusaTab (Upload synchronization) either imported (in case of synchronization of existing observations in MGIS).

#### 3.2.1 FORMAT

The JSON format of the observations is as follow:

```
[
{
  "idAccession": <INTEGER>,
  "accessionName": <TEXT>,
  "accessionNumber": <TEXT>,
  "coordonnees": <TEXT>,
  "classifTaxonomique": <TEXT>,
  "code": <TEXT>,
  "plantationDate": <TEXT>
  "cycles": [ {
    "numCycle": <INTEGER>,
    "plantes": [ {
      "idPlante": <INTEGER>,
      "code": <TEXT>,
      "observation": [ {
        "idObservation": <TEXT>,
        "date": <DATE>,
        "detail": [ {
          "idDescriptor": <INTEGER>,
          "idDetail": <INTEGER>,
          "libelle": <TEXT>,
          "note": <TEXT>,
          "photo": <TEXT>,
          "firstName": <TEXT>,
          "lastName": <TEXT>,
          "position": <TEXT>
        } ]
      } ]
    } ]
  } ]
}
```

#### 3.2.2 DETAIL OF THE FORMAT

##### 3.2.2.a.1 ACCESSIONS

**idAccession** : It allows the identification of the accession. This identifier might be unique in the whole database

The proposed format shows only one accession. It is obviously possible to manage several accessions with this exchange format.

**accessionName** : Name of the accession. This name is displayed on the Tile of MusaTab.

**accessionNumber** : Number/Code of the accession.

**coordonnees.** : Coordinate X (row), Y (line) of the accession in the field.

**classifTaxonomique** : Taxonomic classification of the accession.

**code** : Code of the accession.

**plantationDate** : Planting Date of the accession.

##### 3.2.2.a.2 CYCLES

numCycle : Allow the identification of the current cycle. This identifier is a number. By default only 2 cycles are required for a complete observation of a plant. Nevertheless MusaTab can manage more cycles.

### 3.2.2.a.3 PLANTS

idPlante : Allow to identify the plant observed within a cycle and for an accession.

It is then possible to have different number of plants depending on the cycle (case of lost or eliminated plants between several cycles).

code : Code of the plant. This code is displayed on the tile of the plant.

### 3.2.2.a.4 OBSERVATIONS

Observation : This table lists all the observations of a plant for a given cycle and for an accession. Each record of an observation generates a new item in the table in order to conserve the history of the whole modifications.

idObservation : Identifier of the current observation. This identifier is unique and randomly generated by MusaTab during the observation. The format of this unique identifier is as follow: xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx where each character is replaced by an alphanumeric character.

date : The date is ISO 8601 format (YYYY-MM-DDTHH:mm:ssZ where Z correspond to the time zone using the following format « +XX:XX ») indicate the date/hour of the last update of the observation.

Observation : This table list the whole observation linked to all the descriptors of the observation. It is composed of the id of the descriptor, the value selected or entered as well as the note and photo taken.

idDescriptor : Identifier of the current descriptor. This identifier is provided by the MGIS database in order to ensure the integrity of the data.

idDetail : Identifier of the observation for the current descriptor. This identifier corresponds to a value of a descriptor. In the case of a free entry, this field is empty.

libelle : In the case of a data entry this is where the value is stored. In the case of descriptor with multiple choices, the field is empty.

note : This field contains the note taken by the user for the given descriptor. This note is under text format and can contain multiple lines. In this case the line feed is replaced by the characters « \n ». If no note has been recorded the field is empty.

photo : This field contains the file name of the photo attached to the descriptor. In the absence of photo the field is empty.

The format of the file name is as follow:

<idAccession>\_<idCycle>\_<idPlante>\_<idDescriptors>.jpg

### 3.2.3 EXAMPLES

In this example we made the following three assumptions:

One single accession, one cycle

Only 3 descriptors are available on MusaTab

The first two descriptors are with choice, the third is with data entry.

```
{
  "idAccession": 145245,
  "cycles": [
    {
      "numCycle": 1,
      "plantes": [
        {
          "idPlante": 2162462,
          "observation": [
            {
              "idObservation": "23d1f33d-5v8g-4rgt-df54-hb5dfsd87b89",
              "date": "2015-02-09T12:06:32+01:00",
              "detail": [
                {
                  "idDescriptor": 1,
                  "idDetail": 454,
                  "libelle": "",
                  "note": "",
                  "photo": ""
                },
                {
                  "idDescriptor": 2,
                  "idDetail": 454,
                  "libelle": "",
                  "note": "This is a multiline\nnote.",
                  "photo": ""
                },
                {
                  "idDescriptor": 3,
                  "idDetail": 0,
                  "libelle": "This is an entry test",
                  "note": "",
                  "photo": "145245_1_2162462_3.jpg"
                }
              ]
            }
          ]
        }
      ]
    }
  ]
}
```

In the following example the assumptions are :

Several accessions, several cycles

Only 3 descriptors are available on MusaTab

The first two descriptors are with choice, the third is with data entry.

```
{
  "idAccession": 145245,
  "cycles": [
    {
      "numCycle": 1,
      "plantes": [
        {
          "idPlante": 2162462,
          "observation": [
            {
              "idObservation": "23d1f33d-5v8g-4rgt-df54-hb5dfsd87b89",
              "date": "2015-02-09T12:06:32+01:00",
              "detail": [
                {
                  "idDescriptor": 1,
                  "idDetail": 454,
                  "libelle": "",
                  "note": "",
                  "photo": ""
                },
                {
                  "idDescriptor": 2,
                  "idDetail": 41,
                  "libelle": "",
                  "note": "Ceci est une annotation\nMultiligne",
                  "photo": ""
                },
                {
                  "idDescriptor": 3,
                  "idDetail": 0,
                  "libelle": "This is a multiline\nnote.",
                  "note": "",
                  "photo": "145245_1_2162462_3.jpg"
                }
              ]
            },
            {
              "numCycle": 2,
              "plantes": [
                {
                  "idPlante": 2162462,
                  "observation": [
                    {
                      "idObservation": "s21f21f5-5v8g-4rgt-df54-hb5dfsd87b89",
                      "date": "2015-02-09T12:06:32+01:00",
                      "detail": [
                        {
                          "idDescriptor": 1,
                          "idDetail": 454,
                          "libelle": "",
                          "note": "",
                          "photo": ""
                        },
                        {
                          "idDescriptor": 2,
                          "idDetail": 42,
                          "libelle": "",
                          "note": "This is a multiline\nnote",
                          "photo": ""
                        },
                        {
                          "idDescriptor": 3,
                          "idDetail": 0,
                          "libelle": "This is an entry test",
                          "note": "",
                          "photo": ""
                        }
                      ]
                    }
                  ]
                }
              ]
            }
          ]
        }
      ]
    },
    {
      "numCycle": 1,
      "plantes": [
        {
          "idPlante": 7857857,
          "observation": [
            {
              "idObservation": "23d1f33d-5v8g-424d-df54-"
            }
          ]
        }
      ]
    }
  ]
}
```

```
5d24f5d4f54d5", "date": "2015-02-10T15:06:32+01:00", "detail": [{"idDescriptor": 1, "idDetail": 455, "libelle":  
"", "note": "", "photo": ""}, {"idDescriptor": 2, "idDetail": 874, "libelle": "", "note": " This is a multiline\n note ", "
```

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