

Anonymized Email Chain: Sweet Potato Germplasm Acquisition

Case Study: Complexity of Germplasm Request Process

Anonymization Key

- Requester A – Original requester from the National Agricultural Institute
- Requester B – Colleague assigned to handle import process
- Coordinator – International Center liaison coordinating the request
- Curator – Sweet potato collection curator at International Center
- Genebank Manager – Germplasm distribution coordinator
- Breeder – Plant breeder responsible for seed production
- Colleague C – CC'd colleague at National Institute
- Colleague D – CC'd colleague at National Institute
- [Country X] – Requesting country
- [Country Y] – Country of a previous similar shipment
- [National Institute] – National agricultural research institute in [Country X]
- [International Center] – International agricultural research center (germplasm provider)

Timeline: September 2021 – April 2022 (approximately 7 months)

Complete Email Chain (Chronological Order)

Date: September 21, 2021
From: Coordinator
To: Genebank Manager
Subject: RE: Germplasm distribution SP to [Country Y]

Hello,

Could you tell me how long an order of about 20 sweet potato accessions in vitro (tube with 2 plantlets) for [Country X] would take? And what would the multiplication cost be?

Thanks,

Date: September 21, 2021
From: Genebank Manager
To: Coordinator
Subject: RE: Germplasm distribution SP to [Country Y]

Hello,

The estimated time would be approximately 6 to 8 weeks from receipt of the Import Permit. The recovery costs are as follows:

40 tubes (13mm with 1 in-vitro plantlet of sweet potato): \$9 USD each = \$360 USD
Phytosanitary Certificate: \$75 USD
DHL Shipping: \$72 USD
TOTAL: \$507 USD

Let me know if you have any additional questions.

Date: September 21, 2021
From: Coordinator
To: Requester A
Subject: FW: Germplasm distribution SP to [Country Y]

Dear Requester A,

Below is updated information from the genebank regarding multiplication time and cost of in-vitro plants. We have quoted 2 tubes with 1 plantlet each per accession/clone/variety of sweet potato, for a total of 20 accessions.

Now it would be helpful if you make your inquiries and send me your list of most desired characteristics.

Best regards

Date: October 6, 2021
From: Requester A

To: Coordinator
Cc: Colleague C, Colleague D, Requester B
Subject: Sweet Potato In-vitro for [National Institute]-[Country X]

Good afternoon,

I am writing to follow up on our meeting about importing sweet potato germplasm from [International Center] for [National Institute] of [Country X].

Regarding the import of 20 in-vitro materials, we believe the following distribution and quantities would be appropriate:

1. 10 materials with white-yellow flesh and low Brix degrees (less than or equal to 5), for the domestic market.
2. 5 materials with orange flesh, with intermediate Brix degrees (between 8 and 10), for the export and processing market.
3. 5 materials with purple flesh and high Brix degrees (greater than 10), for the processing market.

We are ready in case more information is needed. For the in-vitro shipment, we can process the phytosanitary documents as soon as you indicate.

Date: October 6, 2021
From: Requester A
To: Coordinator
Cc: Colleague C, Colleague D, Requester B
Subject: Botanical Seed of Sweet Potato for [National Institute]-[Country X]

Good afternoon,

We are also interested in importing botanical seed of sweet potato from [International Center]. However, to do this we first need to complete a prior process with the Phytosanitary Service of [Country X].

For now, it would be very useful if you could help us compile a list of sweet potato populations for this first import of botanical seed, including white-yellow flesh, orange flesh, and purple flesh materials as described in the previous email.

This germplasm list is important right now because it is required for the process mentioned above with our Phytosanitary Service.

Date: October 12, 2021
From: Requester A
To: Coordinator
Subject: Re: Sweet Potato In-vitro for [National Institute]-[Country X]

Hello,

I hope you are doing well. I greatly appreciate your help with this so we can manage the import permit.

Date: October 14, 2021

From: Coordinator
To: Requester A
Cc: Breeder
Subject: RE: Botanical Seed of Sweet Potato for [National Institute]-[Country X]

Dear Requester A,

Attached is the list of populations we have sent to [Country Y]. They are all OFSP (orange-fleshed). I am copying Breeder, our plant breeder responsible for seed production. He can tell you the available quantity and whether he has any white or purple material to send as seed.

Best regards

Date: October 14, 2021
From: Coordinator
To: Breeder
Subject: FW: Sweet Potato In-vitro for [National Institute]-[Country X] (internal)

Hello Breeder,

I was thinking of sending the following varieties/accessions. But I have nothing purple. Do you have an idea what could be suggested? Any other ideas?

Date: October 14, 2021
From: Coordinator
To: Curator
Subject: FW: Sweet Potato In-vitro for [National Institute]-[Country X] (internal)

Dear Curator,

Any suggestions for the colleagues in [Country X]? I have white and OFSP but nothing purple.

Date: October 15, 2021
From: Requester A
To: Coordinator
Cc: Breeder
Subject: Re: Botanical Seed of Sweet Potato for [National Institute]-[Country X]

Thanks. I would appreciate if it is possible to nominate some accessions with white, yellow, and purple flesh.

Date: October 19, 2021
From: Coordinator
To: Requester A
Cc: Breeder
Subject: RE: Botanical Seed of Sweet Potato for [National Institute]-[Country X]

Hello Requester A,

I consulted with the breeders and they tell me they do NOT have seed populations of WHITE sweet potato. But in-vitro material IS available.

The PURPLE ones are scheduled to come out for distribution in 2022. So for now I can only offer the ORANGE ones.

Let me know if you are interested in this material.

Date: October 19, 2021

From: Requester A

To: Coordinator

Subject: Re: Sweet Potato In-vitro for [National Institute]-[Country X]

Hello,

I hope you are well. I would greatly appreciate it if you could help me with the list of 20 in-vitro sweet potato accessions, so I can start some procedures for the import process.

Date: October 19, 2021

From: Requester A

To: Coordinator

Cc: Breeder

Subject: Re: Botanical Seed of Sweet Potato for [National Institute]-[Country X]

Of course, Coordinator. I understand it would be: 1) botanical seed of orange sweet potato (OFSP) and 2) in-vitro material of orange and white sweet potato. I greatly appreciate the list of the 20 in-vitro materials to proceed with the import permits.

Date: October 19, 2021

From: Coordinator

To: Requester A

Subject: RE: Botanical Seed of Sweet Potato for [National Institute]-[Country X]

Yes, botanical seed is only available in orange / OFSP at this time.

Date: October 20, 2021

From: Coordinator

To: Requester A

Cc: Colleague C, Colleague D, Requester B, Curator

Subject: RE: Sweet Potato In-vitro for [National Institute]-[Country X]

Dear Requester A,

Attached is a list with suggested materials. Regarding the PURPLE ones, the population we are using to generate seed will be better because the material is already selected to meet basic requirements such as stable yield, root shape, etc. But since we must wait until there is enough seed, I recommend choosing in-vitro material from the genebank collection. I am copying the sweet potato Curator so she can send us a list of purple material available for international distribution.

Date: October 20, 2021
From: Requester B
To: Coordinator, Requester A
Cc: Colleague C, Colleague D, Curator
Subject: Re: Sweet Potato In-vitro for [National Institute]-[Country X]

Good morning,
Perfect, thank you very much. Of course, if it is possible to send us in-vitro material of the purple ones, that would be great.

Date: October 20, 2021
From: Curator
To: Requester B, Coordinator, Requester A
Cc: Colleague C, Colleague D
Subject: RE: Sweet Potato In-vitro for [National Institute]-[Country X]

Dear Requester A,
I will be sending the list of purple sweet potato accessions available for distribution this week.

Date: October 20, 2021
From: Requester A
To: Coordinator
Subject: Re: Sweet Potato In-vitro for [National Institute]-[Country X]

Hello,
Thank you very much for the information. I would greatly appreciate it if you could help us generate a commercial invoice for the in-vitro materials, to begin the import process.
A couple of questions: when do we need to pay for the shipment? And when would the materials be ready for shipping?

Date: October 20, 2021
From: Coordinator
To: Requester A
Cc: Genebank Manager
Subject: RE: Sweet Potato In-vitro for [National Institute]-[Country X]

Hello Requester A,

First you need to make a formal request to the genebank (copied here). Genebank Manager is in charge. You will select the material from the list you desire and send it to the germplasm office. They will register the order and guide you through the process. Or you can do it directly through the platform. The shipment must also be approved by the Curator.

Date: October 22, 2021

From: Curator

To: Requester B, Coordinator, Requester A

Cc: Colleague C, Colleague D

Subject: RE: Sweet Potato In-vitro for [National Institute]-[Country X]

Dear Requester A,

Below is the list of some purple sweet potatoes available for distribution:

Accession 1: CIP4XXXXX (DLP 2850)

Accession 2: CIP4XXXXX (DLP 891)

Accession 3: CIP4XXXXX (DLP 2198)

Accession 4: CIP4XXXXX (DLP 3384)

Accession 5: CIP4XXXXX (RCB IN-27)

Date: October 23, 2021

From: Requester A

To: Curator

Cc: Requester B, Coordinator, Colleague C, Colleague D

Subject: Re: Sweet Potato In-vitro for [National Institute]-[Country X]

Thank you very much Curator. I have one question: are these clones for in-vitro distribution?

Date: October 23, 2021

From: Curator

To: Requester A

Cc: Requester B, Coordinator, Colleague C, Colleague D

Subject: Re: Sweet Potato In-vitro for [National Institute]-[Country X]

Hello Requester A,

Yes.

Their distribution is in the form of culture or in-vitro.

Date: October 23, 2021

From: Requester A

To: Coordinator

Subject: Re: Sweet Potato In-vitro for [National Institute]-[Country X]

Good afternoon,

In total, the proposed in-vitro materials sum to 30, between the yellow, orange, and purple. I would like to proceed with all 30, but do you need us to reduce the number to 20, or can we proceed with 30?

Date: October 25, 2021

From: Coordinator

To: Genebank Manager

Subject: FW: Sweet Potato In-vitro for [National Institute]-[Country X] (internal)

Hello Genebank Manager,

What is the maximum number they can request?

Date: October 25, 2021

From: Genebank Manager

To: Coordinator

Subject: RE: Sweet Potato In-vitro for [National Institute]-[Country X]

Hello,

They can request up to 35 accessions. There would be no problem with the client's request.

Date: October 25, 2021

From: Coordinator

To: Requester A

Subject: RE: Sweet Potato In-vitro for [National Institute]-[Country X]

Hello Requester A,

You can request up to 35 accessions.

Date: October 26, 2021

From: Requester A

To: Coordinator

Subject: Re: Botanical Seed of Sweet Potato for [National Institute]-[Country X]

Dear Coordinator,

A question: when entering the genebank platform, what ID should I enter for the botanical seed populations?

Date: October 26, 2021
From: Coordinator
To: Requester A
Subject: RE: Botanical Seed of Sweet Potato for [National Institute]-[Country X]

A suggestion: when you have placed the order through the platform, write an email to Genebank Manager asking if the order was received. Sometimes when there are connection problems, the order does not register. She can verify if the order is properly registered in the system.

Date: November 11, 2021
From: Requester A
To: Coordinator
Cc: Requester B, Colleague D, Colleague C, Breeder
Subject: Follow-up: Seed and In-vitro Materials of Sweet Potato for [Country X]

Good morning Coordinator,

For your information, colleague Requester B will help us with the import process for sweet potato materials. I am attaching the lists of botanical seed and in-vitro materials. I would appreciate it if you could help validate them.

Requester B: the in-vitro materials request must be made through the Genebank platform, and subsequently validated with Genebank Manager. For the botanical seed populations, the request must first go to the Breeder. Please keep us copied on progress.

Once we complete this part, we can manage the respective import permits.

Date: November 16, 2021
From: Coordinator
To: Requester A, Breeder
Cc: Requester B, Colleague D, Colleague C
Subject: RE: Follow-up: Seed and In-vitro Materials of Sweet Potato for [Country X]

Hello Requester A,

I reviewed the lists. Let me see if I understand correctly:

- You want populations of botanical seed of orange sweet potato. How many seeds do you need?

Breeder, how many seeds of the three populations could you send (50-100)?

- I see *I. setosa* and *I. nil* in the spreadsheet. Are you going to do PLANT BREEDING and need to induce flowering? Are you going to establish a seed program with in-vitro and need to control virus contamination?

- In-vitro: you can request up to 34 accessions from the genebank. Have you already placed the order through the system? The curator will automatically review if any accessions are unavailable. Since in-vitro requires multiplication time, I recommend placing the order as soon as possible.

Date: November 16, 2021
From: Requester B
To: Coordinator
Cc: Requester A, Breeder, Colleague D, Colleague C
Subject: Re: Follow-up: Seed and In-vitro Materials of Sweet Potato for [Country X]

Good morning Coordinator,

After speaking with Requester A, the following:

1. YES, we want botanical seed of orange sweet potato. If 100 seeds are possible, perfect.
 2. For now, the PLANT BREEDING part is NOT planned. The original file included I. setosa and I. nil, but NOT for now.
 3. We were waiting for your confirmation to proceed with the paperwork, so we will now execute it.
-

Date: November 16, 2021
From: Coordinator
To: Requester B
Cc: Requester A, Breeder, Colleague D, Colleague C
Subject: RE: Follow-up: Seed and In-vitro Materials of Sweet Potato for [Country X]

Go ahead. Please execute it. Let me know when you have registered it so I can follow up.

Hello Breeder,

Could you tell us if you have 100 botanical seeds of each orange sweet potato population?

Until when can you seal the seeds in aluminum envelopes and send them to [headquarters city]?

Date: November 18, 2021
From: Breeder
To: Coordinator, Requester B
Cc: Requester A, Colleague D, Colleague C
Subject: RE: Follow-up: Seed and In-vitro Materials of Sweet Potato for [Country X]

Hello Coordinator,

Sorry for the delay, I was doing fieldwork with limited email access.

Of course, we can send this quantity of seed.

Let us know when we should prepare them and send them to [headquarters city] for the genebank to manage the shipment.

Date: November 19, 2021
From: Requester B
To: Requester A
Cc: Breeder, Coordinator, Colleague D, Colleague C
Subject: Re: Follow-up: Seed and In-vitro Materials of Sweet Potato for [Country X]

Good morning Breeder,

Thank you for your response. A question: do we need to follow a particular procedure for the material request?

Once we have the request details, we need to proceed with an import protocol with the regulatory agency in our country.

Date: November 19, 2021

From: Coordinator

To: Requester B, Requester A

Cc: Breeder, Colleague D, Colleague C

Subject: RE: Follow-up: Seed and In-vitro Materials of Sweet Potato for [Country X]

Dear Requester B,

The genebank handles the distribution and will give you all the details. Basically, we need an import permit. Since permits normally have a very short validity period, please wait until the genebank tells you to obtain it.

We take care of the phytosanitary inspection with the [origin country] authorities that allows us to distribute the material.

The most important thing is that you tell Breeder whether you want 100 seeds from ALL populations or only from some. Breeder will send the seed to the genebank for distribution.

All material is sent by DHL. The only thing we need is a physical address (P.O. boxes not accepted), a phone number of the person receiving the material, and of course the name and affiliation of the recipient.

Date: December 6, 2021

From: Requester B

To: Requester A

Cc: Genebank Manager, Coordinator, Colleague C, Colleague D

Subject: Re: FW: In-vitro materials inquiry

Good afternoon,

Indeed, I was referring to the confirmation of the indicated materials.

List attached.

Date: April 1, 2022

From: Genebank Manager

To: Coordinator

Subject: Seeds of Sweet Potato for [National Institute]-[Country X]

Dear Coordinator,

The clients from [Country X] have already sent their Import Permits.

The in-vitro materials will be ready for inspection next week.

Would it be possible for you to send me the seeds on Monday or Tuesday of next week, please?
Below is the list of accessions in seed format for [Country X]: [15 accessions listed, 200 seeds each]
Please confirm.

Date: April 2, 2022
From: Breeder
To: Coordinator
Cc: Genebank Manager
Subject: RE: Seeds of Sweet Potato for [National Institute]-[Country X]

Hello Coordinator,
On Monday, if there is no strike, the truck will leave for [headquarters city] and we will send the seeds with it.
We will send 11 families. There are 4 families that we DO NOT HAVE (highlighted in yellow).
