



CR-SiB

CERTIFICADO  
DE REPORTE

## 1. INFORMACIÓN DEL CERTIFICADO

Número de certificado: **170E5312912**

Fecha de la última actualización del conjunto de datos: **2020-03-16**

URL del conjunto de datos: [https://ipt.biodiversidad.co/cr-sib/resource.do?r=rge0278\\_phytophthora\\_20200316](https://ipt.biodiversidad.co/cr-sib/resource.do?r=rge0278_phytophthora_20200316)

Número de registros biológicos reportados: **33**

## 2. INFORMACIÓN DEL PERMISO

### Autoridad

Ministerio de Ambiente y Desarrollo Sostenible

### Número del permiso

Artículo 252 de la Ley 1753 de 2015

### Titular

Universidad de los Andes

### Nit o cédula

860.007.386-1

### Fecha de emisión del permiso

2015-06-09

## 3. INFORMACIÓN DEL RECURSO

### Título del proyecto

Análisis de la variación fenotípica y diversidad genética de las poblaciones de *Phytophthora* spp. en diferentes hospederos en Colombia

### Resumen

Pathogen variation plays an important role in the dynamics of infectious diseases. In this study, the genetic variation of 279 *Phytophthora infestans* isolates was assessed using a combination of 12 microsatellite simple-sequence repeat markers. Isolates were collected from 11 different potato cultivars in 11 different geographic localities of the central region of Colombia. The objective of this study was to determine whether populations were differentiated by host genotype or geographic origin. Within a single clonal lineage, EC-1, 76 genotypes were detected. An analysis of molecular variance attributed most of the variation to differences within host genotypes rather than among the host genotypes, suggesting that host cultivars do not structure the populations of the pathogen. Furthermore, the lack of a genetic population structure according

to the host cultivar was confirmed by all of the analyses, including the Bayesian clustering analysis and the minimum spanning network that used the Bruvo genetic distance, which suggested that there are no significant barriers to gene flow for *P. infestans* among potato cultivars. According to the geographic origin, the populations of *P. infestans* were also not structured, and most of the variation among the isolates was attributed to differences within localities. Only some but not all localities in the north and west of the central region of Colombia showed some genetic differentiation from the other regions. The absence of sexual reproduction of this pathogen in Colombia was also demonstrated. Important insights are discussed regarding the genetic population dynamics of the *P. infestans* populations of the central region of Colombia that were provided by the results. In Colombia, there is a high genetic variation within the EC-1 clonal lineage with closely related genotypes, none dominant, that coexist in a wide geographic area and on several potato cultivars.

### **Palabras clave**

Phytophthora Colombia Population Structure Genetic variation Host, null, Specimen

## **3.1 Contacto del recurso**

### **Nombre**

Silvia Restrepo

### **Posición**

Profesora titular

### **Organización**

Universidad de los Andes

### **Dirección**

Cra. 1 #18a 12

### **Ciudad**

Bogotá

### **Código postal**

111711

### **Teléfono**

339 49 99

### **Correo electrónico**

srestrep@uniandes.edu.co

### **Página Web**

<https://uniandes.edu.co/>

## **3.2 Contacto del permiso**

### **Nombre**

Silvia Restrepo

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Profesora titular

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**Correo electrónico**

srestrep@uniandes.edu.co

**Página Web**

<https://uniandes.edu.co/>

### 3.3 Proveedor de los metadatos

**Nombre**

Silvia Restrepo

**Posición**

Profesora titular

**Organización**

Universidad de los Andes

**Dirección**

Cra. 1 #18a 12

**Ciudad**

Bogotá

**Código postal**

111711

**Teléfono**

339 49 99

**Correo electrónico**

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### 3.4 Cobertura geográfica

Colombia CO Putumayo Colon Colon Colombia CO Nariño Pasto Pasto Colombia CO Nariño Consaca Consaca Colombia CO Putumayo San Francisco San Francisco Colombia CO Putumayo Santiago Santiago Colombia CO Putumayo Sibundoy Sibundoy Colombia CO Nariño Buesaco Buesaco Colombia CO Nariño Iles Iles Colombia CO Antioquia Antioquia Antioquia Colombia CO Cundinamarca Sabana Occidente Sabana Occidente Colombia CO Cundinamarca Subia Subia Coordenadas: 1°11'22.7"N y 1°12'25.79"N Latitud; 77°27'56.99"W y 76°55'4.13"W Longitud

### 3.5 Cobertura taxonómica

Muestras del género *Phytophthora*.

**Categorías taxonómicas**

Género: *Phytophthora*

Especie: *Phytophthora infestans*

### 3.6 Cobertura temporal

21 de noviembre de 2009 - 10 de mayo de 2015

### 3.7 Métodos de muestreo

Three to four leaves were sampled from 15 randomly selected plants that showed late blight symptoms from each field. Approximately 1 cm<sup>2</sup> of infected leaf, between the necrotic and sporulating areas, was excised and placed in contact with a potato dextrose agar (PDA) medium that contained antibiotics (1 ml of rifampicin, 1 ml of ampicillin, 1 ml of chloramphenicol, and 1 ml

of pentachloronitrobenzene per liter) (Danieš et al. 2013). In total, 278 isolates were successfully isolated and subsequently transferred again into a fresh PDA medium. All plates were grown at 18C in the dark for 7 days and were stored in the Phytophthora collection at Universidad de los Andes (Bogotá, Colombia). Duplicates of all isolates collected in this study were stored in the Museum of Natural History at Universidad de los Andes.

**La veracidad de este certificado se puede corroborar en la siguiente dirección web:**

[https://ipt.biobiodiversidad.co/cr-sib/pdf.do?r=rge0278\\_phytophthora\\_20200316&n=170E5312912](https://ipt.biobiodiversidad.co/cr-sib/pdf.do?r=rge0278_phytophthora_20200316&n=170E5312912)

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