

SICoNet: The Brazilian Microbial Resource Center Network

<http://sicol.cria.org.br>

General Objectives

- Serve as an integrating element to microbial collections in Brazil
- Address information needs from both culture collections and users
- Address information needs from policy and decision makers

First phase

- Definition of the architecture
 - Data and documents
 - Infrastructure and expertise
 - Available tools
- Development of a *web site*

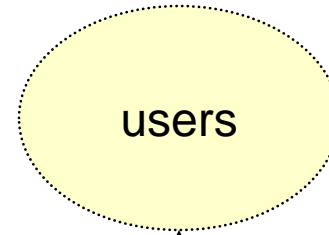
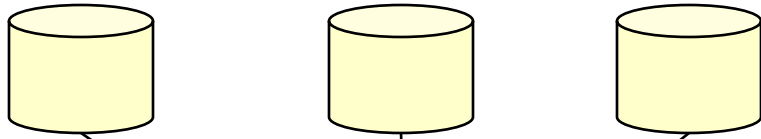
Conclusions (2001)

- Documentation of culture collections
 - Very basic (minimum fields)
 - unstructured (little / no use of common formats and controlled vocabulary)
 - Attending in-house demands
- Infrastructure and expertise
 - Internet access: precarious
 - Without computer support
 - In need of a managing system
- Available tools
 - Distributed systems were complex and would demand a certain expertise and infrastructure that was not available

Results

- Architecture: centralized system
- Some Principles:
 - Data provider should retain control and responsibility over his/her data
 - Compatibility with CABRI (Common Access to Biological Resources and Information)
 - The system should be based on open protocols, be platform independent, and should preferably use non commercial software

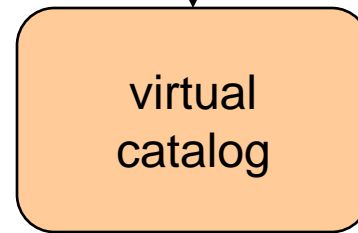
Data providers
(culture collections)



HTTP



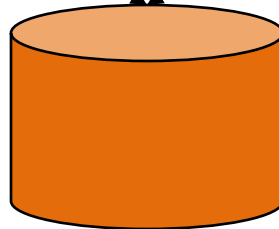
Perl &
Apache



updates

queries

SQL



relational database
PostgreSQL



Catálogo Virtual - Área restrita

Entre com o nome do usuário e sua senha. Em seguida, clique no botão "Enviar".

Usuário

Senha

[Alterar senha](#)

- [- \(FAQ\) -](#)
- [- \(lista de discussão\) -](#)
- [- \(contato\) -](#)
- [- \(área restrita\) -](#)

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Centro de Referência em Informação Ambiental, CRIA



Catálogo Virtual - Área restrita

TESTE - Coleção Teste

Especifique o grupo de micro-organismos:

[Alterar senha](#)

[\(FAQ\)](#) [\(lista de discussão\)](#) [\(contato\)](#) [\(área restrita\)](#)

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Catálogo Virtual - Área restrita

TESTE - Coleção Teste

Para adquirir uma planilha **Excel** com os nomes dos campos já preenchidos, clique [aqui](#).
É importante notar que os nomes dos campos da planilha **não podem ser alterados!**



Para atualizar o catálogo da coleção, forneça no campo abaixo o nome do arquivo com a planilha contendo os dados atualizados. O arquivo pode estar no formato Excel (.xls) ou formato texto (.txt) com os campos separados pelo caracter de "tabulação". Se preferir, indique sua localização pressionando o botão **browse**. Em seguida, clique no botão **enviar** para submeter a planilha.

Arquivo:

Para resgatar os dados de sua coleção, clique [aqui](#).

[Alterar senha](#)

Rich text toolbar with icons for file operations, editing, and formatting. Includes a font size dropdown set to 10, bold (B), italic (I), underline (U) buttons, and a formula bar showing 'A1' and 'número da linhagem'.

número da linhagem

número em outras coleções

gênero

epiteto

classificação infraespecifica

nome infraespecifico

CRB
o projeto
temas associados

catálogo virtual

O **Catálogo Virtual** é o primeiro produto do SICOL que procura atender a uma demanda por informação dos usuários de insumos biológicos na área da biotecnologia.

No momento, este catálogo contempla dados das seguintes coleções:

- ◆ **BGB** - Banco de Germoplasma de Bacillus spp. para controle biológico
- ◆ **BR** - Coleção de Culturas de Bactérias Diazotróficas
- ◆ **CBMAI** - Coleção Brasileira de Microrganismos do Ambiente e Indústria
- ◆ **CFAF** - Coleção de Culturas de Fitopatógenos e Agentes de Controle Biológico de Fitopatógenos
- ◆ **CG** - Coleção de Culturas de Fungos Entomopatogênicos
- ◆ **IBSBF** - Coleção de Culturas de Fitobactérias do Laboratório de Bacteriologia Vegetal
- ◆ **INCQS** - Coleção de Culturas Oswaldo Cruz do Instituto Nacional de Controle de Qualidade em Saúde
- ◆ **IOC** - Coleção de Culturas de Fungos do Instituto Oswaldo Cruz
- ◆ **LFB-FIOCRUZ** - Coleção de Culturas do Gênero Bacillus e Gêneros Correlatos

O Sicol também mantém informações atualizadas sobre o **número de espécimes** (culturas) que cada coleção mantém nesta base de dados.

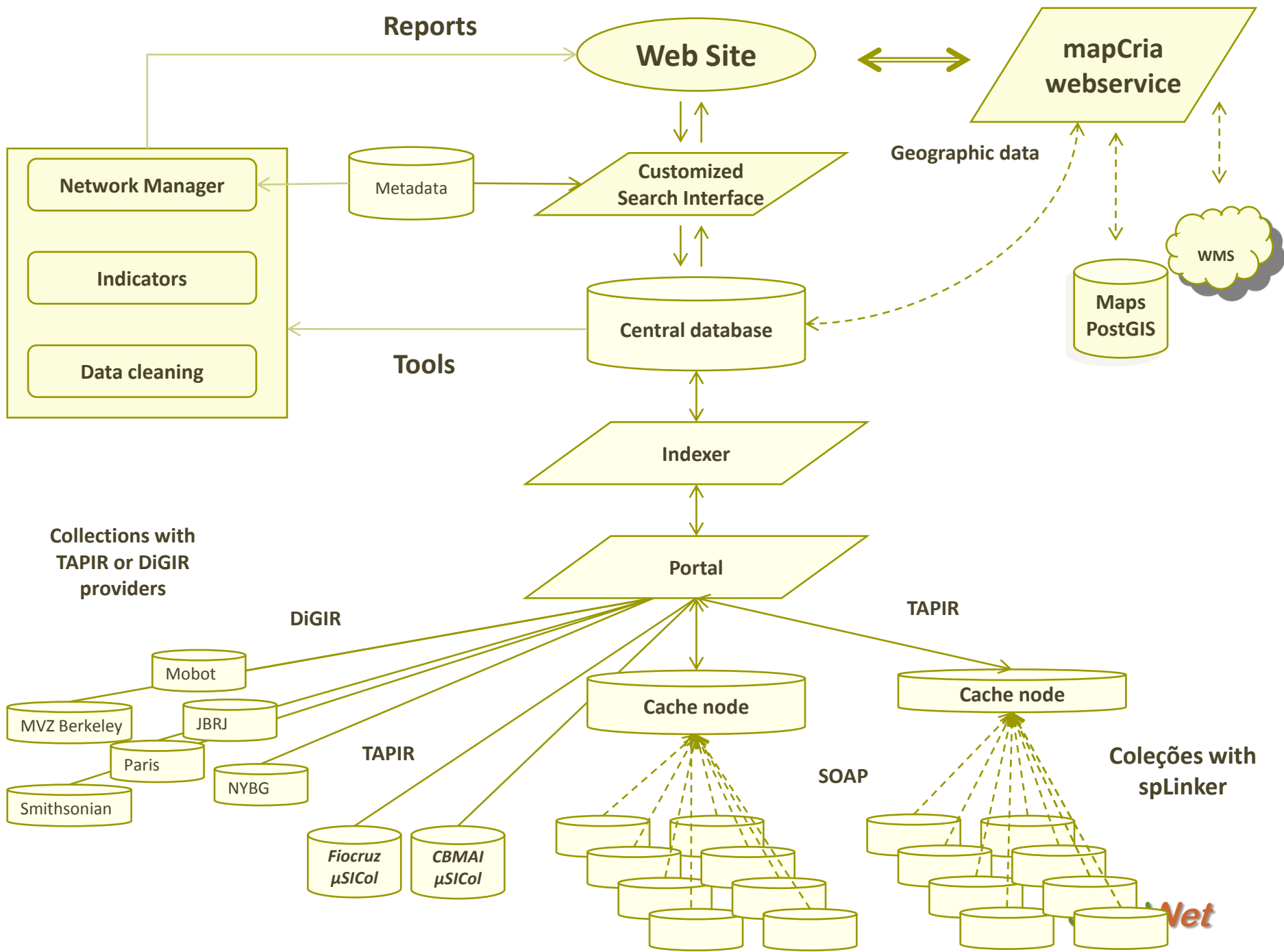
Para fazer uma pesquisa no catálogo, digite uma palavra ou parte dela e em seguida pressione o botão **consultar**. A consulta será feita em todos os campos disponíveis no catálogo, tais como: número de acesso do material, nome científico da espécie, localidade, ano, entre outros.

Pesquisar em:

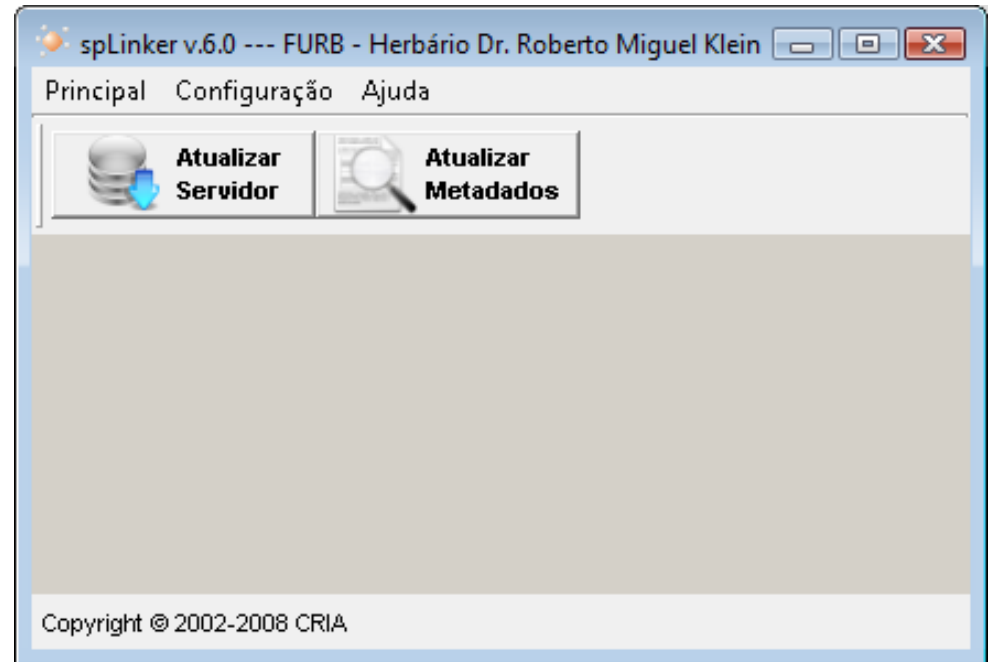
consultar

New Architecture

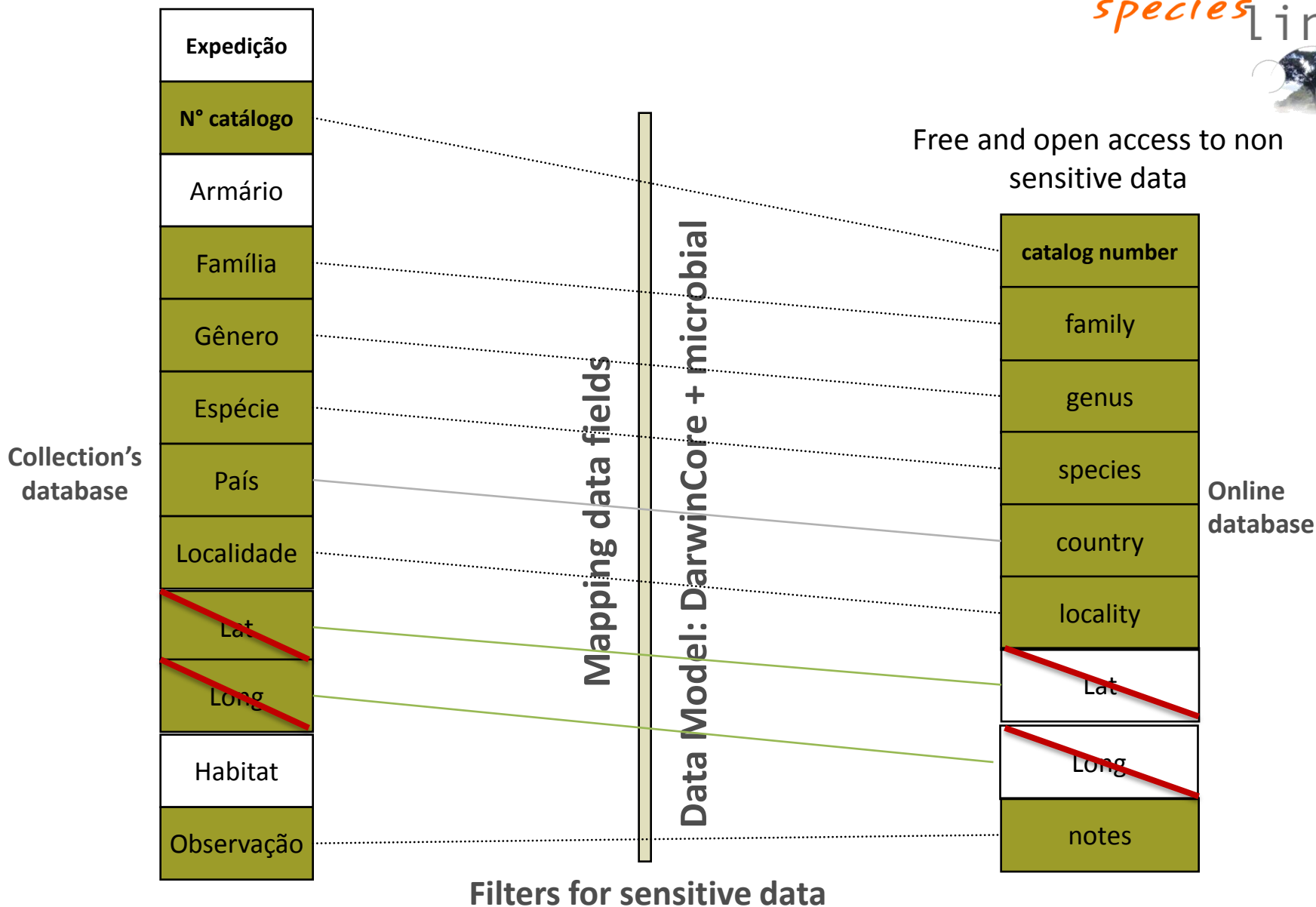
- Previous result: once data was sent it was never updated
- New architecture: based on the technology developed for the *speciesLink* network
 - Common data model: DarwinCore + extension (microbial)
 - Standard communication protocol: Tapir
- 2 basic types of data providers
 - Those serving data directly through a TAPIR provider (good connectivity, hardware, peopleware)
 - Those serving data through a cache node (spLinker)



- Platform Independent (java)
- Connects to practically any database
- Offers full control over data
- It is possible to filter sensitive data
- Low traffic (only sends what has been changed)



speciesLink Network: Mapping data fields



collections data

IBSBF	
BGB	
BR	
CFAF	
CG	<ul style="list-style-type: none"> Bacillus sporothermodurans Petterson et al., 1996 - contaminante de leite UHT

ColTryp	<ul style="list-style-type: none"> Trypanosoma cruzi Trypanosoma cruzi
CLIOC	<ul style="list-style-type: none"> Leishmania major Leishmania amazonensis
CCFF	<ul style="list-style-type: none"> Aspergillus flavus Gliocladium viiide
CCGB	<ul style="list-style-type: none"> Bacillus licheniformis, CCGB1234, Agar media Lysinibacillus sphaericus
CBMA	<ul style="list-style-type: none"> Serratia, Parson 1876, ATCC 2374, liof Pseudomonas
CFP	<ul style="list-style-type: none"> Cryptococcus neoformans Cryptococcus gatti
CBAM	
CFAM	
CMT	<ul style="list-style-type: none"> Paecilomyces lilacinus Curvularia tuberculata
CCBS	<ul style="list-style-type: none"> Acinetobacter baumannii Campylobacter coli
INCQS	<ul style="list-style-type: none"> Cryptococcus gatti Cryptococcus neoformans
CBMAI	<ul style="list-style-type: none"> Bacillus cereus, CBMAI0001, reference Escherichia coli, CBMAI8765, reference

filter



mechanism

spLinker

TAPIRLink

DarwinCore2 + μ

CatalogNumber	Genus	Species	rank	Subspecies	Depositor
CBMAI0001	Bacillus	cereus			Luiz André
CCFF0221	Escherichia	coli			Pedro Paulo
ColTryp9876	Trypanosoma	cruzi			Maria Aparecida
IOCL8765	Leishmania	major			John Doe
CFP8765	Fusarium				Mary Ann
CMT6543	Aspergillus	flavus			Luigi Pietro
CMT8762	Cryptococcus	gatti			Carla Moraes
CFP3421	Cryptococcus	neoformans			
CBMAI4321	Serratia	sp.			
	Listeria	inocua			
	Pseudomonas	aeruginosa			
	Pseudomonas	alcaliphila			
	Fusarium	flavum			
	Fusarium	aquaeductum	var.	medium	
	Aspergillus	niger	var.	niger	
	Campylobacter	coli			
	Serratia	marcescens	subs p.	sakuensis	

SICoNet



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Customized query interface

CRB
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Embrapa



catálogo virtual

Advanced search 1 | Collections

| Next

Use the options below to select the collections to be searched

[Uncheck all](#)

Collection type

all

Collection location

Brazil

all

- BGB - Banco de Germoplasma de Bacillus spp. para controle biológico
- BR - Coleção de Culturas de Bactérias Diazotróficas
- CBMAI - Coleção Brasileira de Microrganismos de Ambiente e Indústria
- CCFF - Coleção de Culturas de Fungos Filamentosos do Instituto Oswaldo Cruz
- CCGB - Coleção de Culturas de Bacillus e Gêneros Correlatos
- CFAF - Coleção de Culturas de Fitopatógenos e Agentes de Controle Biológico de Fitopatógenos
- CG - Coleção de Culturas de Fungos Entomopatogênicos
- CLIOC - Coleção de Leishmania do Instituto Oswaldo Cruz
- IBSBF - Coleção de Culturas de Fitobactérias do Instituto Biológico
- INCQS - Coleção de Microrganismos de Referência do Instituto Nacional de Controle de Qualidade em Saúde

SICOL

português | help

[Simple search](#)



Select the field, operator and put the value.

Use the buttons to add and remove condition according to the combination you want to search.

Field

Strain applications

Operator

not equals

Value

blank

or

Strain properties

not equals

blank

Add condition

Remove last condition

The records found are presented per collection. Choose the content type, format, and desired output (text, maps, and Google maps).

Georeferenced records

Collection	Records	At source	Automatic	Content	Format	Output
CBMAI	149	0	82	Short	HTML	see
CCGB	11	0	4	Complete	MS-Excel	see
INCQS	292	0	0	Short	XML	see
Total	452	0	86	Inventory	HTML	see



About **Inventory**

Collections:
CBMAI, CCGB, INCQS

strain applications

Adjusts pH in natural lactic acid fermentation of cornmeal; ferments pentoses.
Agar Nutriente (DIFCO 0001)
Análise de DNA e parede celular



About **Inventory**

Collections:
CBMAI, CCGB, INCQS

strain properties

ADH-2
Tóxica para *Aedes aegypti* e *Culex quinquefasciatus*.

ADH-2
Tóxica para *Aedes aegypti* e *Culex quinquefasciatus*.
Produção de colesterol-oxidase (U.S. Pat. 3,925,164) e 3-keto $\Delta^1,4$ esteroides (U.S. Pat. 3,010,876) . Conversão de fenol e r

Sem Toxicidade para larvas de *Aedes aegypti*.

Toxicidade para *Aedes aegypti*.

Toxicidade para larvas de *Aedes aegypti*.

Tóxica para *Aedes aegypti*.

Tóxica para *Aedes aegypti*.

Altamente tolerante ao pireno (compostos hidrocarbonetos aromáticos policíclicos). Metaboliza pireno.
Antifungal properties of cycloheximide.
bacteria fixadora de nitrogênio
bacteria fixadora de nitrogênio.
hialino l

CRB
o projeto
temas associados

catálogo virtual

embrapa



Embrapa



Advanced search 1 | Collections 2 | Filters

| Next

Select the field, operator and put the value.

Use the buttons to add and remove condition according to the combination you want to search.

Field

Species

or

Species

Add condition

Operator

equals

like (phonetic)

Remove last condition

Value

blank

sp

Simple search

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SICOL









português | help

SICOLNet

Advanced search 1 | Collections 2 | Filters 3 | Results

The records found are presented per collection. Choose the content type, format, and desired output (text, maps, and Google maps).

Georeferenced records

Collection	Records	At source	Automatic	Content	Format	Output
BGB	121	0	0	Short <input type="button" value="v"/>	HTML <input type="button" value="v"/>	see
BR	225	0	111	Short <input type="button" value="v"/>	HTML <input type="button" value="v"/>	see  
CBMAI	180	3	69	Short <input type="button" value="v"/>	HTML <input type="button" value="v"/>	see  
CCFF	289	0	12	Short <input type="button" value="v"/>	HTML <input type="button" value="v"/>	see  
CCGB	297	0	3	Short <input type="button" value="v"/>	HTML <input type="button" value="v"/>	see  
CFAF	1	0	1	Short <input type="button" value="v"/>	HTML <input type="button" value="v"/>	see  
CG	26	0	15	Short <input type="button" value="v"/>	HTML <input type="button" value="v"/>	see  
CLIOC	207	71	3	Short <input type="button" value="v"/>	HTML <input type="button" value="v"/>	see  
IBSBF	258	0	176	Short <input type="button" value="v"/>	HTML <input type="button" value="v"/>	see  
INCQS	15	0	0	Short <input type="button" value="v"/>	HTML <input type="button" value="v"/>	see
Total	1619	74	390	Inventory <input type="button" value="v"/>	Genus <input type="button" value="v"/>	MS-Excel <input type="button" value="v"/> see  



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	A	B
1	genus	total
2		5
3	?	9
4	Acidovorax	18
5	Acinetobacter	3
6	Acremoniella	1
7	Acremonium	4
8	Acrothecium	1
9	Aeromonas	1
10	Agrobacterium	1
11	Alicyclobacillus	17
12	Alternaria	2
13	aptata	4
14	Arthrobotrys	1
15	Aspergillus	43
16	Bacillus	282
17	Beauveria	2
18	Bipolaris	1
19	Botryosphaeria	1
20	Bradyrhizobium	106
21	Brevibacillus	35
22	Burkholderia	10
23	Byssochlamys	1
24	C.	1
25	Candida	21
26	Cephalosporium	2
27	Chaetomium	3

	A	B
93	Saprolegnia	1
94	Scedosporium	1
95	Sclerotium	1
96	Serratia	1
97	Sinorhizobium	2
98	Sporobolomyces	1
99	Sporotrichum	2
100	Stachybotrys	2
101	Staphylococcus	4
102	Stenotrophomonas	14
103	Streptococcus	2
104	streptomyces	126
105	Syncephalastrum	4
106	Syncephalis	1
107	Syzygites	1
108	Thozetella	1
109	Trichoderma	40
110	Trichophyton	4
111	Trichosporon	7
112	Unknown	164
113	Wallemia	1
114	Westerdykella	6
115	Xanthomonas	46
116	Xylaria	3
117	Zygosaccharomyce	2
118	Zygosaccharomyces	1
119		1619

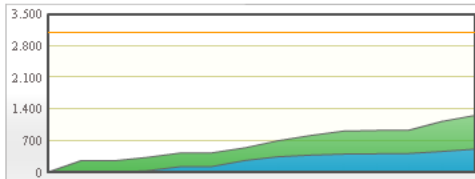
	A	B
1	genus	total
2	Bacillus	282
3	Leishmania	207
4	Unknown	164
5	streptomyces	126
6	Rhizobium	115
7	Bradyrhizobium	106
8	Xanthomonas	46
9	Aspergillus	43
10	Fusarium	43
11	Trichoderma	40
12	Brevibacillus	35
13	Pseudomonas	35
14	Paecilomyces	25
15	Candida	21
16	Acidovorax	18
17	Alicyclobacillus	17
18	Cladosporium	17
19	Phoma	16
20	Stenotrophomonas	14
21	Hormodendrum	13
22	Penicillium	11
23	Burkholderia	10
24	Erwinia	10
25	?	9
26	Geotrichum	9
27	Trichosporon	7

Click here to also see collections that are off-line

filter

acronym *	county	state	network	software	records **	on-line	%	georef ***	%	auto georef****	update ***** ▲
CCGB	Rio de Janeiro	Rio de Janeiro	SICoI	SICoI (MySQL)	1.270	1.270	100%	0	0%	0	17/09/2010
CLIOC	Rio de Janeiro	Rio de Janeiro	SICoI	SICoI (MySQL)	3.090	1.231	40%	509	41%	142	10/09/2010
CCFF	Rio de Janeiro	Rio de Janeiro	SICoI	SICoI (MySQL)	1.498	1.498	100%	0	0%	0	09/09/2010
IBSBF	Campinas	São Paulo	SICoI	MS-Excel	2.715	2.715	100%	0	0%	1.519	01/09/2010
CBMAI	Paulinia	São Paulo	SICoI	SICoI (MySQL)	432	432	100%	0	0%	144	30/11/2009
INCQS	Rio de Janeiro	Rio de Janeiro	SICoI	PostgreSQL	723	723	100%	0	0%	0	02/02/2005
CG	Brasilia	Distrito Federal	SICoI	PostgreSQL	889	889	100%	0	0%	583	04/12/2003
BR	Seropédica	Rio de Janeiro	SICoI	PostgreSQL	8.000	311	4%	0	0%	137	10/02/2003
CFAF	Brasilia	Distrito Federal	SICoI	PostgreSQL	138	138	100%	0	0%	94	05/12/2002
BGB	Brasilia	Distrito Federal	SICoI	PostgreSQL	3.800	1.989	52%	0	0%	0	22/11/2002
10 collections					22.555	11.196	50%	509	5%	2.619	

Date of last update: 22/09/2010 15:25



Ministério da Saúde
Fundação Oswaldo Cruz

more information

description



holding description

records

total: 3090 on-line: 1231 georeferenced: 509 last update: 10/09/2010 on-line since: 21/09/2009 software: SICol (MySQL)

summary

CLIOC is registered with the World Federation for Culture Colection, WFCC (WDCM 731) and is also recognized as trustee by the Ministry of Environment, MMA (DOU 04/05/2005). The collection includes protozoa of the genus *Leishmania* (Kinetoplastida, Trypanosomatidae), representing recognized species (pathogens and non-human pathogens) and specific genotypes with significant representation of biodiversity studied in neotropical *Leishmania*. Genetically modified organisms are also part of the collection. CLIOC is prepared to include its collection online through the SICol network (<http://sicol.cria.org.br>).

data use restrictions

It is forbidden to market the data and it is also necessary to mention the source.

how to cite

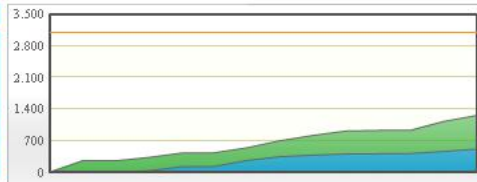
CLIOC - Coleção de *Leishmania* do Instituto Oswaldo Cruz (<http://clioc.ioc.fiocruz.br>)

Search
Indicators
dataCleaning
networkManager

Discussion List
Centro de Referência em Informação Ambiental
Fundação de Amparo à Pesquisa do Estado de São Paulo



let



Ministério da Saúde
Fundação Oswaldo Cruz

more information

profile



records per brazilian states ratio

states (Brazil)

profile

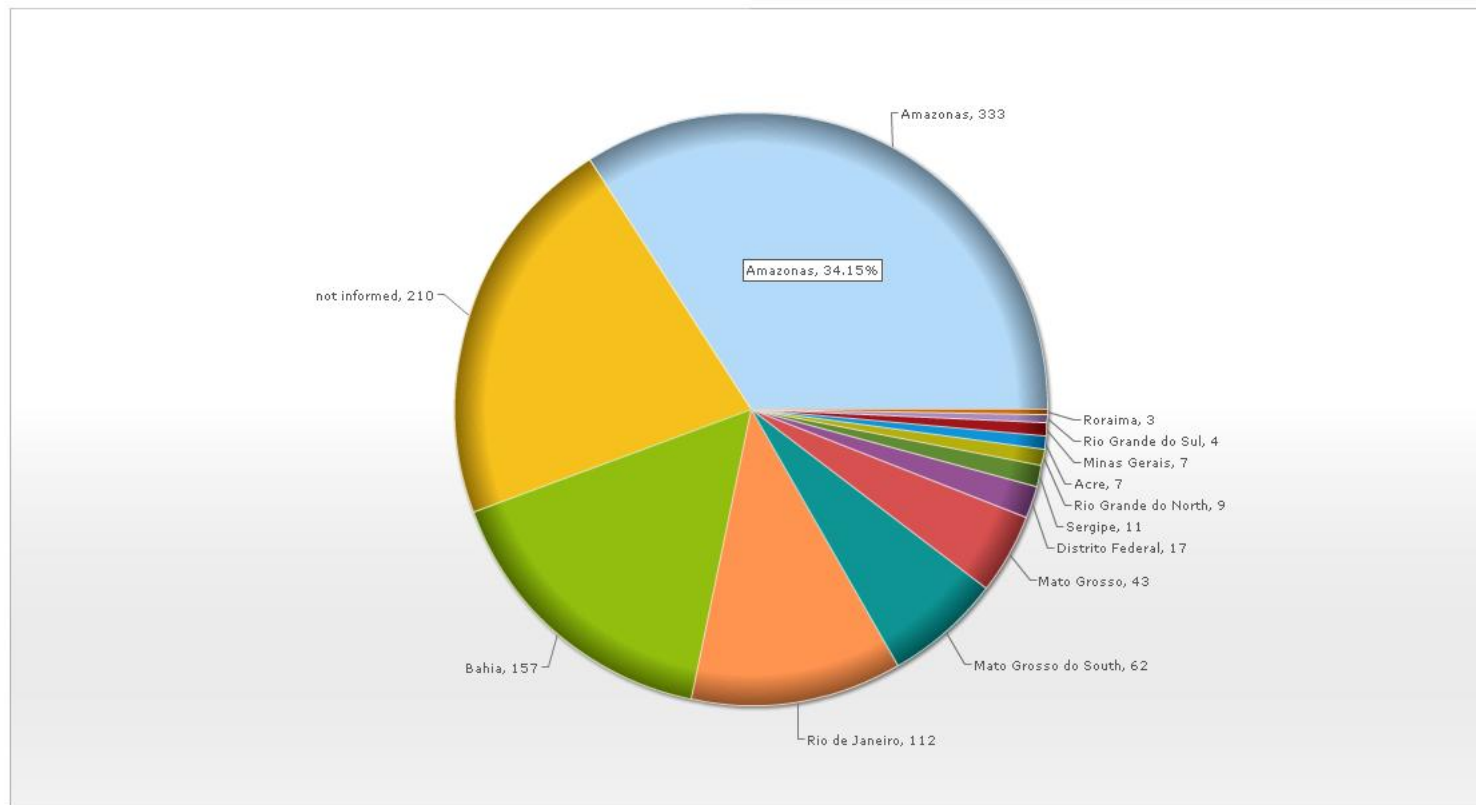


Chart with the percentage of records for each Brazilian State. As holdings are digitized and made available in the network, this indicator will show the number of records per state, possibly showing geographic information gaps.

Updated on 21/09/2010 11:24

Indicators

See other options for indicators here



All Networks - Microorganisms - brazilian states

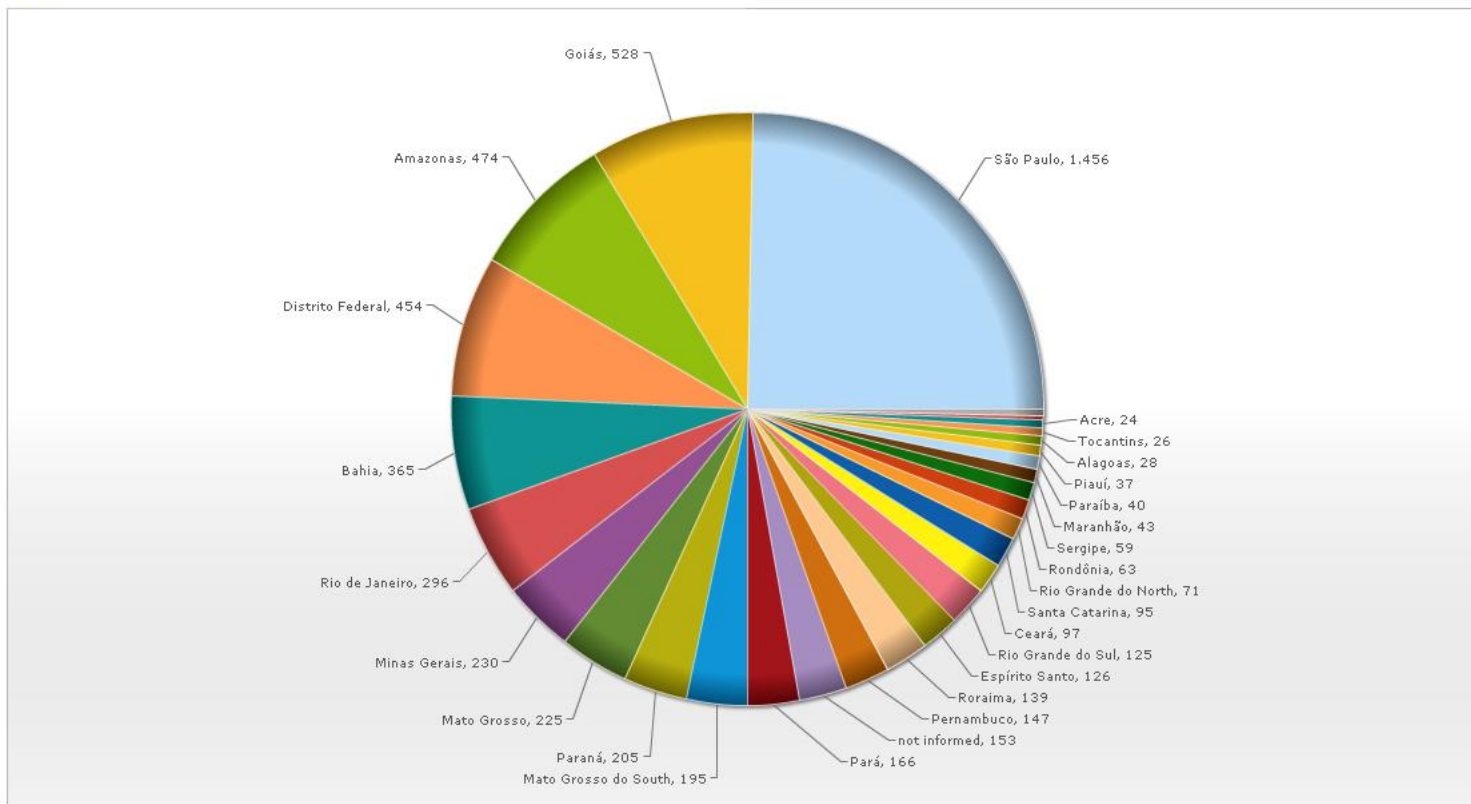


Chart with the percentage of records for each Brazilian State. As holdings are digitized and made available in the network, this indicator will show the number of records per state, possibly showing geographic information gaps.



Updated on 21/09/10 04:16

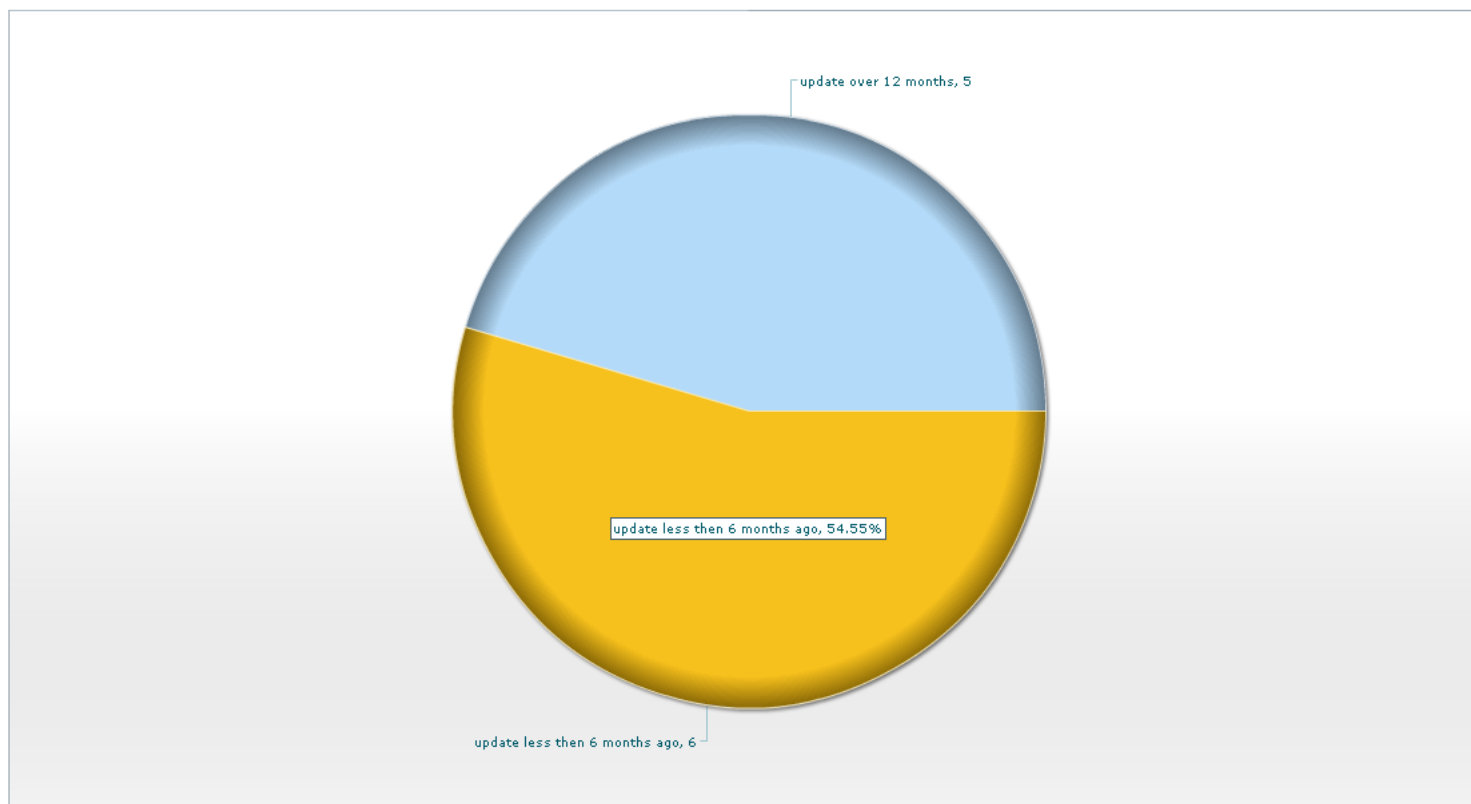
Source: BGB, BR, CBMAI, CCFF, CCGB, CFAF, CG, CLIOC, IBSBF, INCQS

Indicators

See other options for indicators
here



All Networks - Microorganisms - updating index



The indicator considers all collections that have at least 10 records on-line.

- update over 12 months, number = The number of collections that have not updated the on-line system for over one year
- update between 6 to 12 months, number = The number of collections that updated the on-line system between 6 to 12 months ago
- update less than 6 months ago, number = The number of collections that updated the on-line system less than 6 months ago



data & tools

data cleaning

Select a collection **species link**

português

- collection
- total number of records
- without collection
- georeferenced
- access to records

data & tools

data cleaning

- in the selected collection: **BR**

Suspect genus names

List of records that have the same family name with a phonetic variation of the genus

catalog number

Title: The names in red are not included in the dictionaries available, those in green are.

collector's

	family	genus	species	subspecies	records	speciesLink	status CoL	catalog number
of the collection	[]	SP [Rhizobium]	[sp.]	[]	53	see	53	
of data collection	[]	SP [Rhizobium]	[sp.]	[]	62	see	62	
	[]	SP [Rrizobium]	[sp.]	[]	1	see	1	3807

inventory

family

genus

species search

subspecies indicators

author data cleaning

duplicate networkManager



Discussion List
Centro de Referência em Informação Ambiental
Fundação de Amparo à Pesquisa do Estado de São Paulo

municipality name (Brazil)	not found
coordinate unit analysis (Brazil)	not found

date collected	
collect before 1930	not found
last update previous to date collected	not found

suggestions for blank fields	
long/lat (Brazil)	137 suggestions
country/state name	not found
municipality name (Brazil)	not found

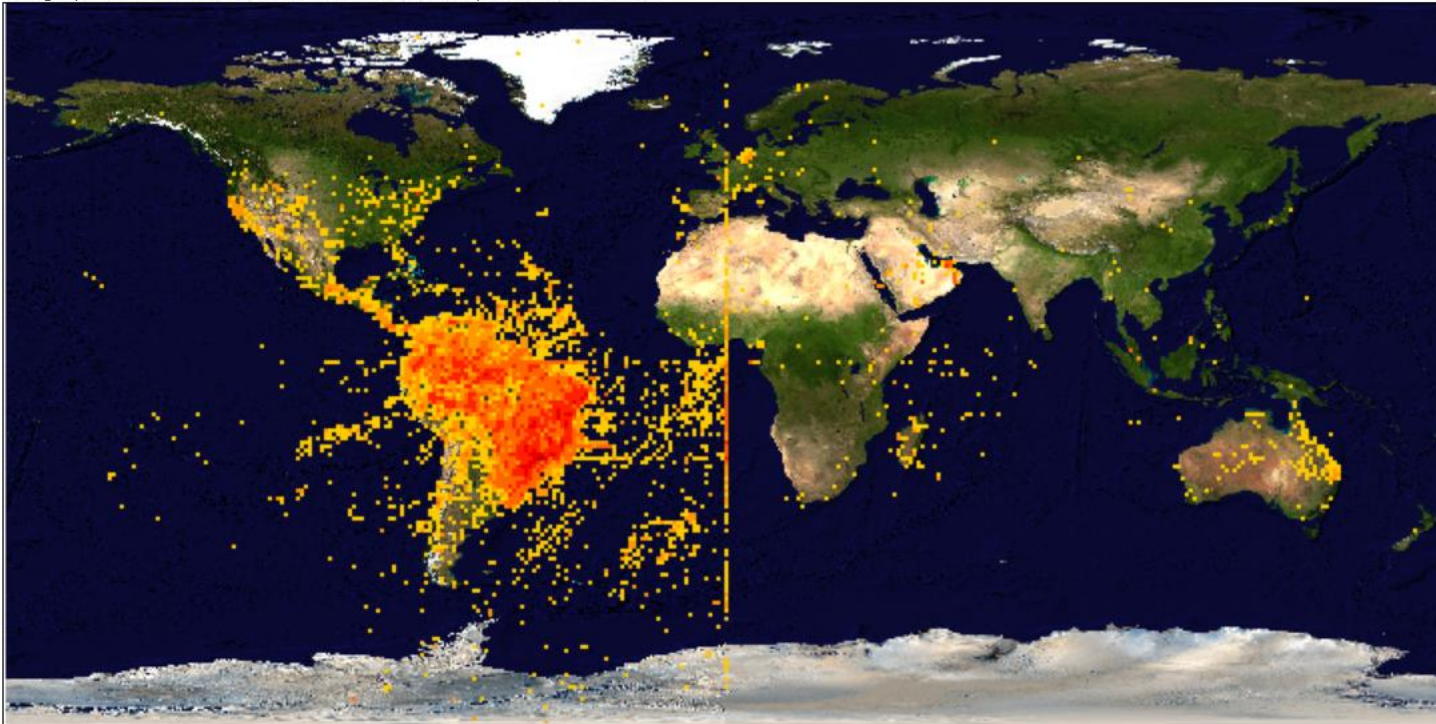


Next steps

- Online register of culture collections
- Integrating new/more data
- Developing new indicators and reports

Thank you

Geographic distribution of all records within the speciesLink network



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dora@cria.org.br