



International Center for Tropical Agriculture
Since 1967 / *Science to cultivate change*

**Information and
communications
technologies for agricultural
research and development**

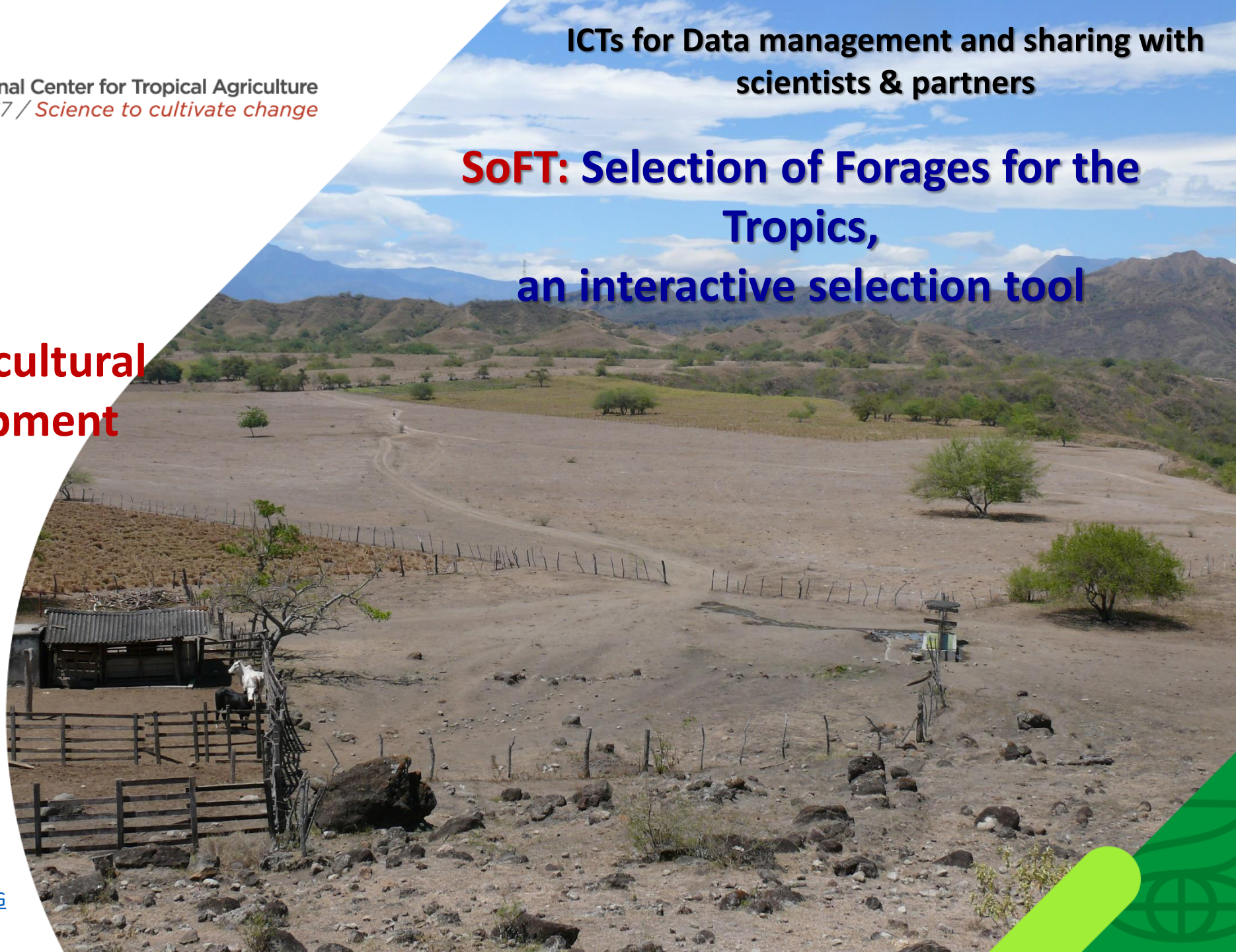
Internal CIAT conference,
October 13 and 14, 2015,
Palmira, Colombia

**Michael Peters
Arturo Franco
Belisario Hincapié**

Further information: M.PETERS-CIAT@CGIAR.ORG

**ICTs for Data management and sharing with
scientists & partners**

**SoFT: Selection of Forages for the
Tropics,
an interactive selection tool**





**Information and communications technologies for
agricultural research and development**

To share this successful experience

Session 1: ICTs and communications for development

Session 2: ICTs for data and information sharing among local stakeholders

Session 3: Data collection using mobile devices

Session 4: ICTs for Data management and sharing with scientists &

partners

The Selection of Forages for the Tropics

A database of species adaptation and management accumulated over the past 50 years

180 species are used or are “valuable”

All with particular uses, adaptation and management preferences

Worldwide, 3.4 billion hectares of grazing land, more than a quarter of the world crop production area is used for livestock feeding. This is more than **the 70% of the total area of agricultural lands in developing countries**



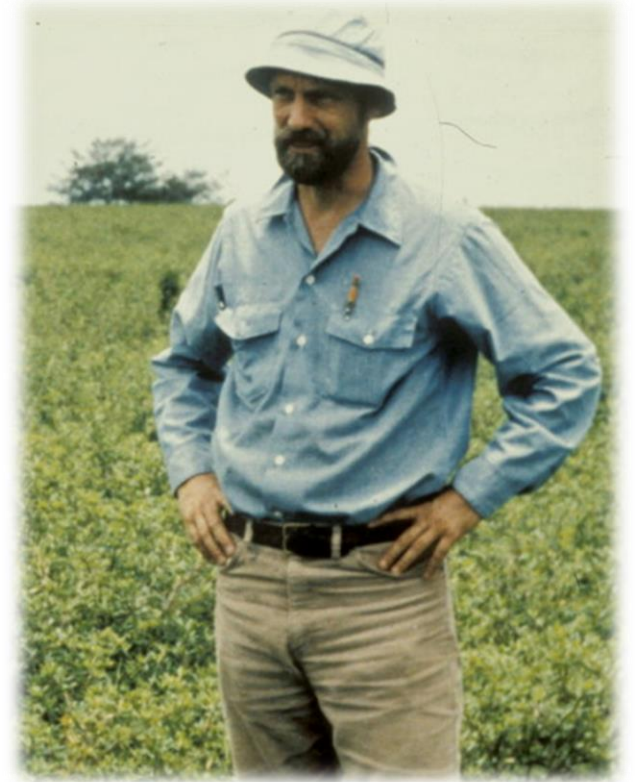
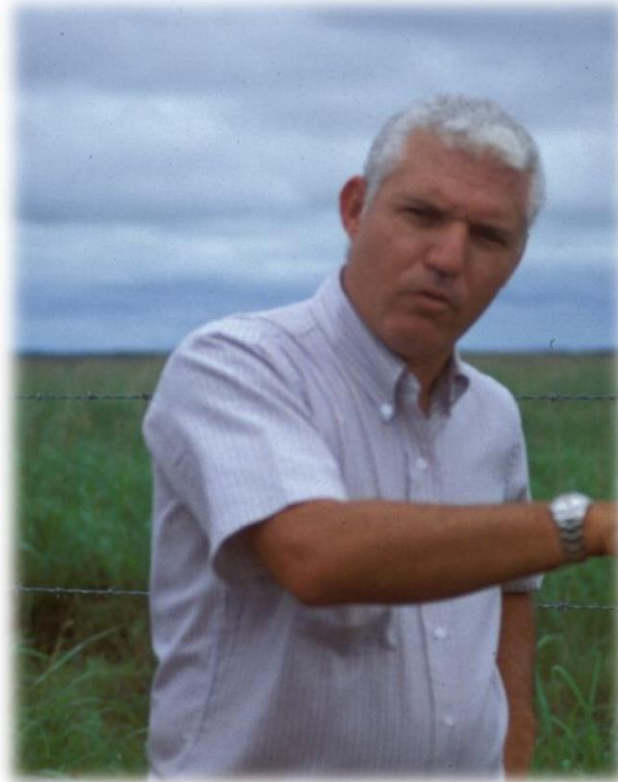
The tropical forages and their sub-products are classified within the greater value crops in many countries and they contribute to the sustainability of mixed animal and crops systems of production



The importance of forages creates a high demand in information



This need is in **contrast with a limited number of technicians and versed scientists in the topic of tropical forages** and their integration in the agricultural landscape



In this context, an idea arose for the development of a tool, that could integrate the tacit and explicit knowledge of the most outstanding tropical forages experts worldwide



Tropical Forages: an interactive selection tool

Bruce Pengelly, Bruce Cook, Ian Partridge, David Eagles, Michael Peters, Jean Hanson, Stuart Brown, John Donnelly, Ben Mullen, Rainer Schultze-Kraft, Arturo Franco and Rachel O'Brien



Forage based technologies in the tropics

- Rapidly **increasing demand** for livestock products
- Increased demand for forage
 - To supplement crop by-products
 - New forages in sown grasslands
 - Forages in cropping systems – large and small scale farmers
 - Forages for resource conservation

The Status, Background

- 50 years of detailed research on species and accession adaptation
 - Range of farming systems
 - Range of environments
 - Systems: Extensive, crop-livestock, cut and carry, agroforestry, erosion control, beef, dairy, fish
- **Accumulated knowledge difficult to harness**
- Adaptation studies being repeated
- Investment priorities should be elsewhere

Where are 50 years of knowledge?

- Traditional and grey literature
- Summarised info. (FAO and Prosea)
- Personal knowledge
 - Specialist forage agronomists
 - National and international centres
 - Many retired

Our aim, The Solutions

- Need to value what we already know
- Assemble knowledge
- Develop selection tool
- Updated fact sheets
- Include elite accessions
- Map climate adaptation
- Make knowledge available to users in appropriate format (**interpreted data**)
- Link knowledge on plant adaptation to:
 - Bibliography
 - Forage management information
 - Seed/planting material sources and availability

Methodology

- Database design and maintenance
- Database linkages (FAO)
- Information sources
- Publications/reports
- Workshops
- Interviews
- Correspondence (email etc.)

Putting it together - Development

- Downloading expertise
- Literature reviews
- Workshops around the topics
- A team of experienced writers
- Selection tool validation
- Mapping adaptation

Outputs

- Selections of best options at the germplasm level
 - not just cultivars – but not nursery results
- Appropriate bibliography
- Information sheets
- Best sources of planting material

Key information

- Taxonomy
- Plant description
- Uses
- Environmental adaptation
- Productivity and feed value
- Cultivars
- Elite accessions

Audience

- Universities
- Research providers - information for a particular farming system in a particular environment
- Development agencies
- Seed companies and Farmers

SoFT has been extensively used by researchers, extension workers, NGOs, farmers, and educational institutions around the world with an average of 220,000 visits per year

Repository of agricultural research outputs
peer-reviewed [journal articles](#)

CGIAR
CGS

Repository of agricultural research outputs

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Authors

- Rao, Idupulapati Madhusudana (10)
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- Cardoso, Juan Andrés (3)
- Ceballos, Hernán (3)
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- Chirinda, Ngonidzashe (3)
- Jiménez Serna, Juan de la Cruz (3)
- ... View More

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- Ghent University (1)
- Haramaya University (1)

to refine the search results.

Current Filters:

Date issued Contains 2015 Remove

New Filters:

Author Contains Add Filter Remove

Apply

Showing 10 out of a total of 99 results for collection: **CIAT Articles in Journals.** (0.026 seconds)

Now showing items 1-10 of 99 1 2 3 4 ... 10 Next Page

 Response to the discussion letter of Lassaletta and Aguilera "soil carbon sequestration is a climate stabilization wedge: Comments on Sommer and Bossio (2014)"
Sommer, Rolf; Bossio, Deborah (2015)

The [CIAT Dataverse](#)
one for each research area

International Center for Tropical Agriculture
Since 1967 *Science to cultivate change*

CIAT Research Online

International Center for Tropical Agriculture - CIAT Agrobiodiversity research at CIAT

International Center for Tropical Agriculture Dataverse > Agrobiodiversity Dataverse

✉ 🔄

 🔍 Find Advanced Search

1 to 1 of 1 Result ⬆️ Sort ▾



Dataverses (0)

Datasets (1)

Files (0)

Publication Date
2012 (1)

Keyword Term
[Agrobiodiversity \(1\)](#)
[Latin America and the Caribbean \(1\)](#)
[Pastures; Acid soils; Savannas; Agroclimatic zones; Pest insects; Soil toxicity; Soil analysis; Information processing; Tropical zones; Latin America /Pastizales; Suelo ácido; Sabanas; Zonas agroclimáticas; Insectos dañinos; Toxicidad del suelo; Análisis del suelo; Procesamiento de información; Zona tropical; América Latina \(1\)](#)

Manual para la evaluación agronomica  

Feb 18, 2015 - CIAT - International Center for Tropical Agriculture Dataverse

Toledo, José M., 2012, "Manual para la evaluación agronomica", <http://hdl.handle.net/1902.1/18390>, Harvard Dataverse, V8

Se presenta un manual, el segundo de una serie programada para uso de la Red Internacional de Evaluacion de Pastos Tropicales, en el cual se resumen las metodologias acordadas en la pasada Reunion de Trabajo de la Red (oct. 1979) para las evaluaciones agronomicas en los ensayos r...

Related Material: , R. (comp.). 1990. The CIAT collection of tropical forages. 1. Catalog of germplasm from Southeast Asia = La colección de forrajeras tropicales del CIAT. 1. Catálogo de germoplasma de Asia Suroriental . Centro Internacional de Agricultura Tropical (CIAT), Cali, CO. 316 p. (Working document no. 78) Schultze-Kraft, R

Database of Tropical Forages
<http://webpc.ciat.cgiar.org/forrajes/db/>



Localidad BE19 ROMELIA 1

General

Colaborador	SELEN SUAREZ	Altitud	1370 msnm
Provincia	CHINCHINA	Latitud	4 ° 58 ' 0 " N
Departamento	CALDAS	Longitud	75 ° 42 ' 0 " W
País	COLOMBIA	Clasificación	BTSSVE
Ecosistema	Bosque Semisiempreverde Estacional		

Promedios de Parámetros Ambientales

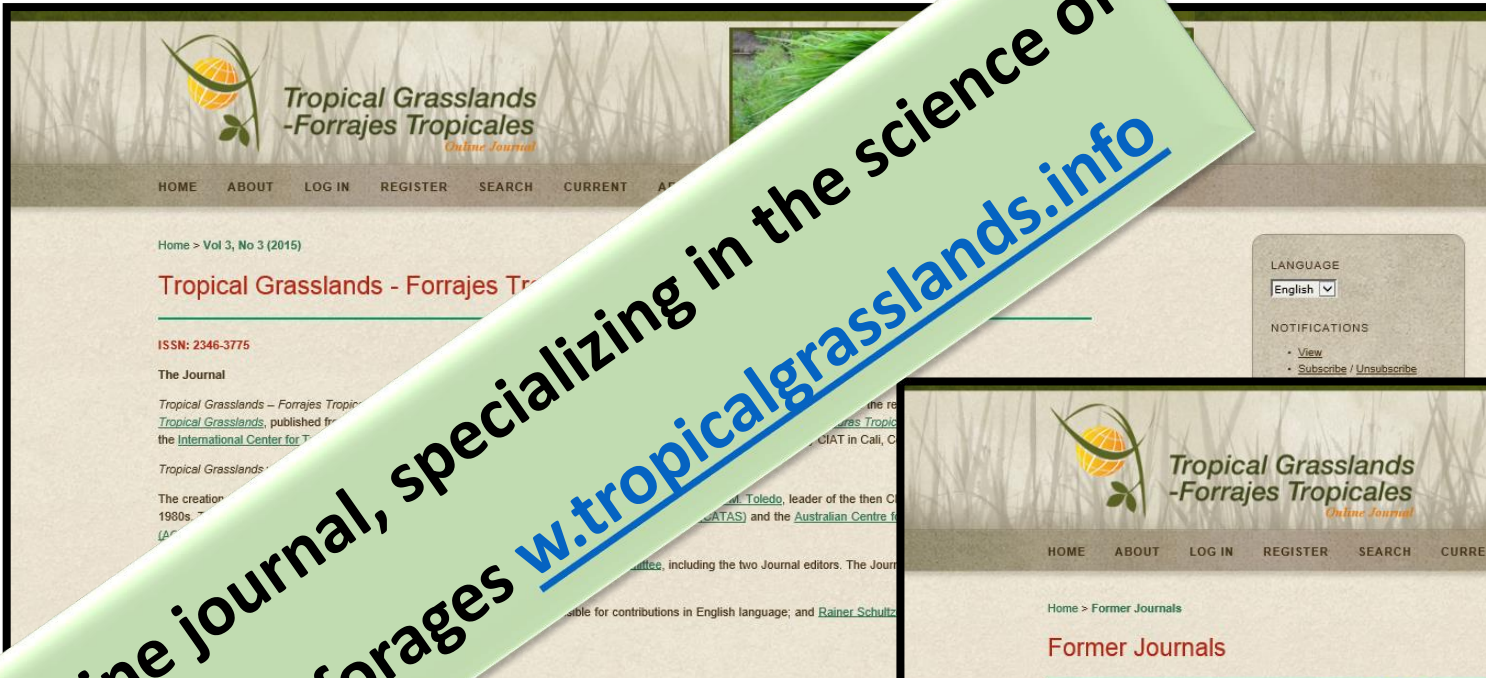
	Año Inicial	ENE	FEB	MAR	ABR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DIC	Año Final
Temperatura Media (°C)	1951	20.8	20.9	21	20.7	20.6	20.5	20.8	20.7	20.5	20	20	20.4	1975
Temperatura Media Máxima (°C)	1951	27.2	27.6	27.5	26.9	26.7	26.6	27.3	27.2	26.7	26.1	25.8	26.5	1975
Temperatura Media Mínima (°C)	1951	16.1	16.3	16.5	16.5	16.5	16.3	16	16	15.8	15.9	16	16.1	1975
Radiation Solar (langley/día)	1951	312	334	347	342	307	311	341	338	337	312	283	280	1975
Humedad Relativa (%)	1951	75	75	76	79	80	79	75	76	78	79	80	78	1975
Horas de Sol	1951	190	166	151	136	134	142	183	175	150	136	134	166	1975
Velocidad del Viento (km/hora)	1972	3	3.6	3.1	3	0.9	1.1	1.1	3	3.3	2.9	2.9	3.7	1972
Precipitación (mm)	1951	149	158	204	308	315	233	180	199	206	298	266	177	1984

Características del Suelo

	0 - 20 cm	20 - 40 cm		0 - 20 cm	20 - 40 cm
Arena %	50	52	Fósforo (ppm)	2	2
Limo %	31	34	Calcio	3	2.6
Arcilla %	19	14	Magnesio	0.6	0.3
Densidad Aparente (g/cc)	0.7	0.85	Potasio	0.25	0.13
Cap. de Campo (% humedad)	65		Sodio		

Agronomic Characterization of 5,374 CIAT Accessions, in 230 sites of Tropical America and Africa, Evaluating and Selecting Materials, and germplasm evaluation networks for regional adaptation trials, establishment and production phase

Online journal, specializing in the science of tropical forages w.tropicalgrasslands.info



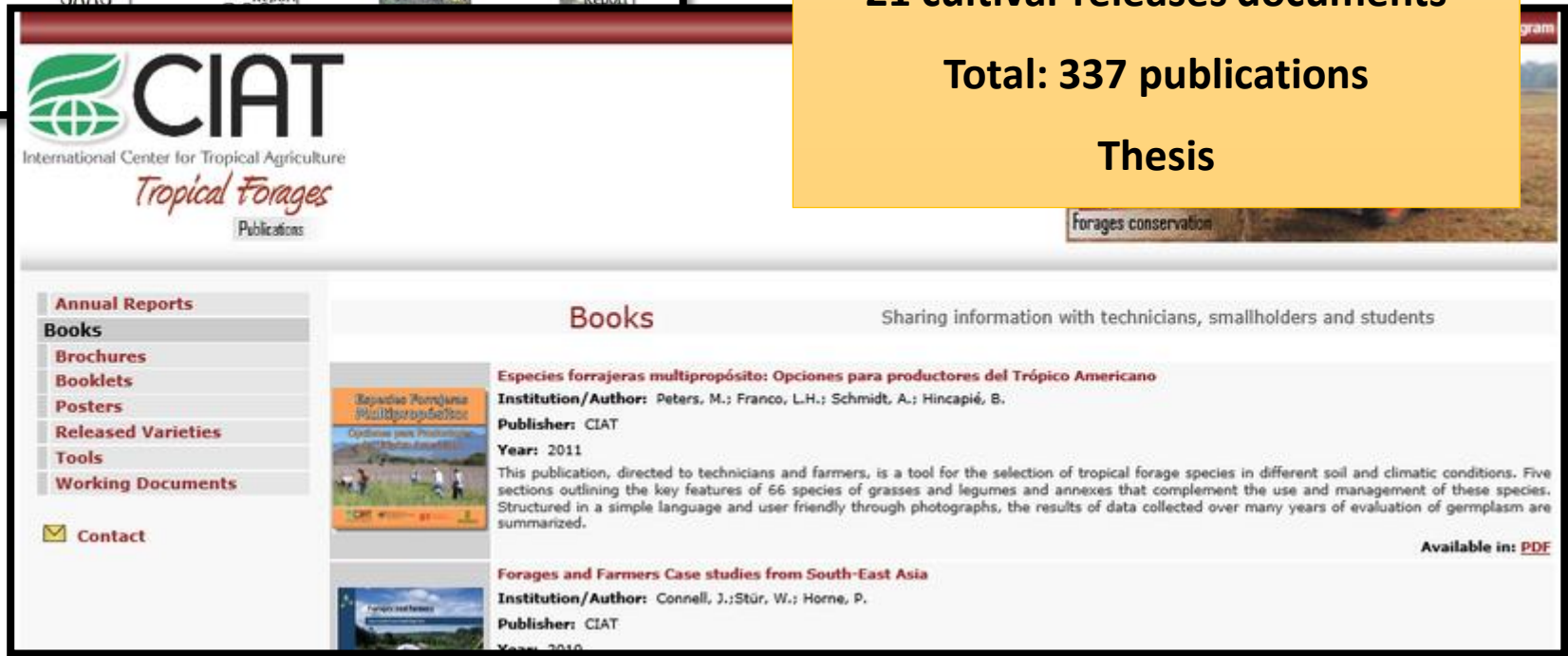
75.593 visits in the last year, leading countries such as China, the USA and

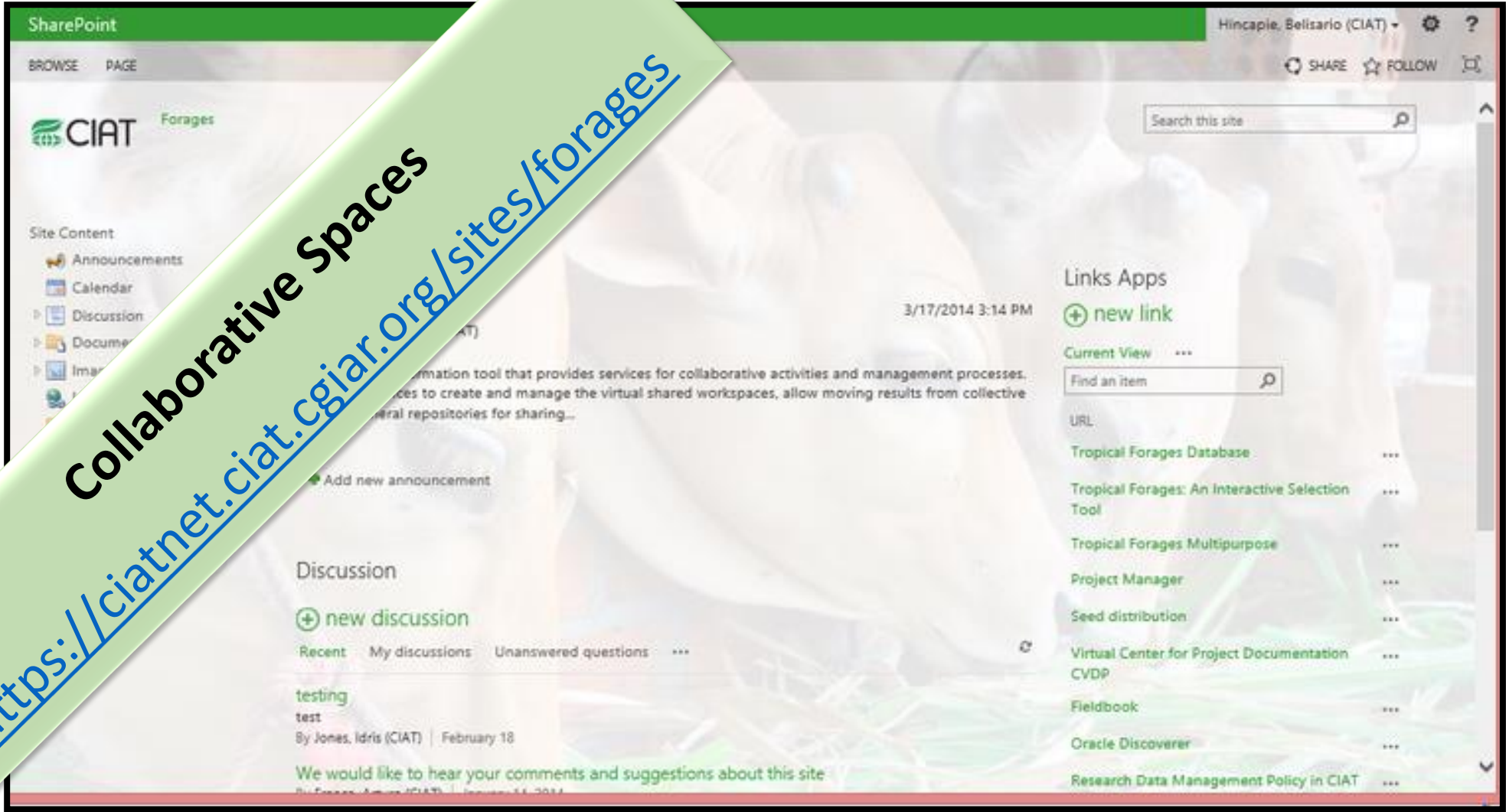
France



Repository of forages documents
http://ciat-library.ciat.cgiar.org/Forrajes_Tropicales/

66 Annual reports
67 Books
12 Brochures
20 Booklets
81 posters
5 links to forages online resources
66 working documents
21 cultivar releases documents
Total: 337 publications
Thesis





Collaborative Spaces

<https://ciatnet.ciat.cgiar.org/sites/forages>



CIAT

Centro Internacional de Agricultura Tropical

Agrobiodiversidad

Sitio Web de CIAT Contáctenos



Inicio

Acerca de

Manejo de Plagas y Enfermedades

Solicitud de Germoplasma

Recursos Genéticos

Agrobiodiversidad con productores del Cauca, Colombia

El primer día de campo con productores del Cauca,

Este encuentro es resultado de 7 años en investigación aplicada en forrajes para la región, a través de la implementación de proyectos como el de "Aplicación de tecnologías para la transformación de sistemas ganaderos de carne en el departamento del Cauca", que fue ejecutado conjuntamente entre la Universidad del Cauca, la Cooperativa de Usuarios Campesinos de Patía (COAGROUSUARIOS), la Asociación de Ganaderos de Mercaderes (ASOGAMER) y el CIAT.



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Reciba las últimas noticias en su correo:

Buscar Noticias por fecha:

October 2015						
M	T	W	T	F	S	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

[← Sep](#)

Populares:

Recientes:

Comentarios:

Forrajes tropicales y yuca, dos cultivos que estrechan ...

February 13, 2014 comentarios

Novedoso sistema portátil para la detección de pató...

August 21, 2014 comentarios

Tres grados centígrados más caliente, oportunidad par...

November 26, 2014 comentarios

En busca de alternativas para combatir la mosca blanca ...

<http://ciatblogs.cgiar.org/agrobiodiversidad>

Blogs



Especies forrajeras de Arachis

377 páginas

... natural y atributos de Arachis; Recoleccion de germoplasma de Arachis silvestre; Recursos geneticos de Arachis silvestre y diversidad genetica; Biologia ... para la recombinacion genetica en ...

[Vista completa](#) - [Acerca de este libro](#)

Especies forrajeras multipropósito: Opciones para productores de Centroamérica

... el Peters, Luis Horacio Franco, Axel Schmidt, Belisario Hincapié

[Vista completa](#) - [Acerca de este libro](#)

Semillas de especies forrajeras tropicales: Conceptos, casos y enfoque de la ... -

Página 256

John E. Ferguson Ed. - 1994 - 370 páginas

Agradecimientos Agradecemos al Dr. Pedro J. Argel, como Coordinador del Programa de Forrajes Tropicales para América ... Perspectivas regionales en pasturas y semilla de especies forrajeras para Centroamérica, México y el Caribe.

[Vista completa](#) - [Acerca de este libro](#)



Nombres científicos y vulgares de especies forrajeras tropicales - Página vi

Mariano Mejía M. - 1984 - 75 páginas

Se citan las especies forrajeras cultivadas ma's conocidas y difundidas en la literatura, como también aquellas que no se cultivan, o que a veces se

Google Books

<https://www.google.com/search?tbm=bks&q=forages#tbn=bks&q=especies+forrajera>

What is the information most frequently requested?

Email: arodriguezp76@gmail.com

Organización: DIOCESIS MOCOA SIBUNDOY-WWF

Posición: Coord Tecnico Convenio BYSA -CC

Sitio Web:

Cuerpo del Mensaje:
Quisiera saber si es posible, encontrar información acerca de estrategias en pequeñas comunidades para lograr adaptar nuestro tipo de producción en el Valle de Sibundoy. Esto con el fin de llevar una buena propuesta a nuestras instituciones locales para lograr que se integren a nuestro trabajo de BYSA por compensación

From: David Martin Berrocal [<mailto:david@solucionesbiomasa.com>]
Sent: Tuesday, March 19, 2013 2:46 PM
To: Hincapie, Belisario (CIAT)
Subject: contacto

Buenas tardes Sr. Hincapie.

Tras tratar de contactar con usted telefónicamente hace escasos minutos sin éxito, la señorita de centralita me ha facilitado su correo y me ha transmitido que usted es la persona idónea para tratar los temas que me gustaría abordar. En el mes de enero mande correo electrónico a CIAT sin que al día de hoy haya tenido contestación, en el le expresaba mis inquietudes respecto al pasto Mulato II las cuales les transmito a usted: .

Le escribo desde España, por lo que lo primero que me gustaría me indicara cual es su pensamiento a priori sobre la implantación de este pasto aquí en la península ibérica, si tendrá buena nacencia, y buenos rendimientos. El Clima que tenemos aquí es continental veranos de mucho calor e inviernos moderadamente fríos.

Organización: Finca Altamira

Posición: Patiño Hernandez

Sitio Web: Luis Walter Patiño Hernandez

Cuerpo del Mensaje:
primeramente quiero agradecerles toda la información que me suministran por medio del correo es muy valiosa para mi aunque soy un pequeño ganadero y ovinocultor me interesa mas que todos las clases de leguminosas y gramíneas para alimentar mis ovejas y ganado vivo el municipio de Piendamó Cauca a una altura de 1800 snm quisiera saber si es cierto que tienen un centro investigativo cerca a la ciudad de Popayán Cauca. es importante para adquirir semilla que es tan difícil para esta zona muchas gracias y exitos en sus labores

Email: b.hincapie@cgiar.org

Telephone: 4450100 Ext

3703



The SoFT tool (Selection of Tropical Forages) has a user-friendly platform for producers, technicians and scientists



Learnt Lessons

The ability to select and prioritize forages for specific niches and environments and for specific animal requirements is important to mitigate feed shortages and improve natural resource management as part of sustainable smallholder farming systems, which can help make agriculture more productive and competitive

Learnt Lessons

New research has generated information on forage performance and use in a wide range of environments over the last ten years and its utility, usability and desirability could be greatly enhanced by **updating and extending the information content**

Also the last ten years have seen quick advances in knowledge management and information technology, including the **use of mobile devices** and fast searching that could be employed in SoFT version 2.0. The **linkage** with complementary websites such as Feedipedia, Agroforestree, GRIN and Genesys will further improve end-user experience and knowledge dissemination about forages

The message

When we adopt the theory that the real incentive for the development of an economy is not trade but education

When we think not only about publishing, but about the dissemination of the necessary information based on the needs of producers, we get to achieve successful cases of adoption and therefore impact

Cuando nos alineamos a la teoría, que el verdadero motor de desarrollo de una economía no es el comercio, es la educación

Cuando pensamos, no en publicar, sino en divulgar la información necesaria basada en las necesidades de los productores, lograremos casos exitosos de adopción y por tanto de impacto

SoFT– A tool for targeting forages

Revised version in 4 languages



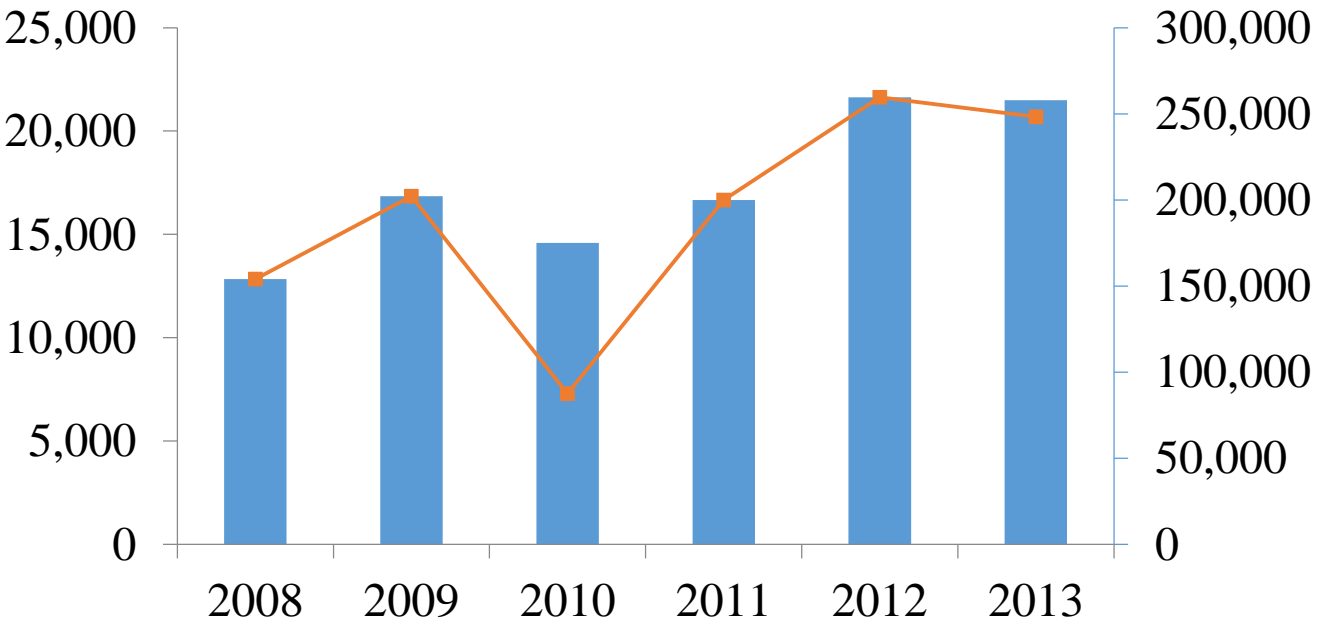
15,629 pages visited average per month since launch in 2005

Visits per month [2006–2014]



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Min	Max	Total Year
2008	11,541	9,095	12,137	4,557	15,652	15,406	11,538	12,834	14,759	14,844	15,853	15,828	4,557	15,583	154,044
2009	13,070	13,659	17,875	15,818	15,854	14,223	16,227	15,792	19,799	22,366	18,568	19,000	13,070	22,366	202,251
2010	N/A	N/A	N/A	N/A	N/A	N/A	12,861	13,754	16,020	16,290	16,018	12,584	16,290	16,739	180,470
2011	13,797	14,145	17,558	16,176	17,623	16,085	15,852	17,473	19,023	16,271	20,355	15,580	13,797	20,355	199,938
2012	17,813	19,515	23,066	22,937	24,796	21,552	20,010	20,737	22,887	24,804	23,191	18,305	17,813	24,804	259,613
2013	21,341	20,029	22,371	25,277	23,908	21,540	19,883	19,133	20,276	21,878	20,709	11,853	19,133	21,878	257,831
2014	18,825	19,384	22,408	21,167	23,516	20,587	19,089	18,923	20,974	21,836	21,090	16,469	16,469	23,516	244,268

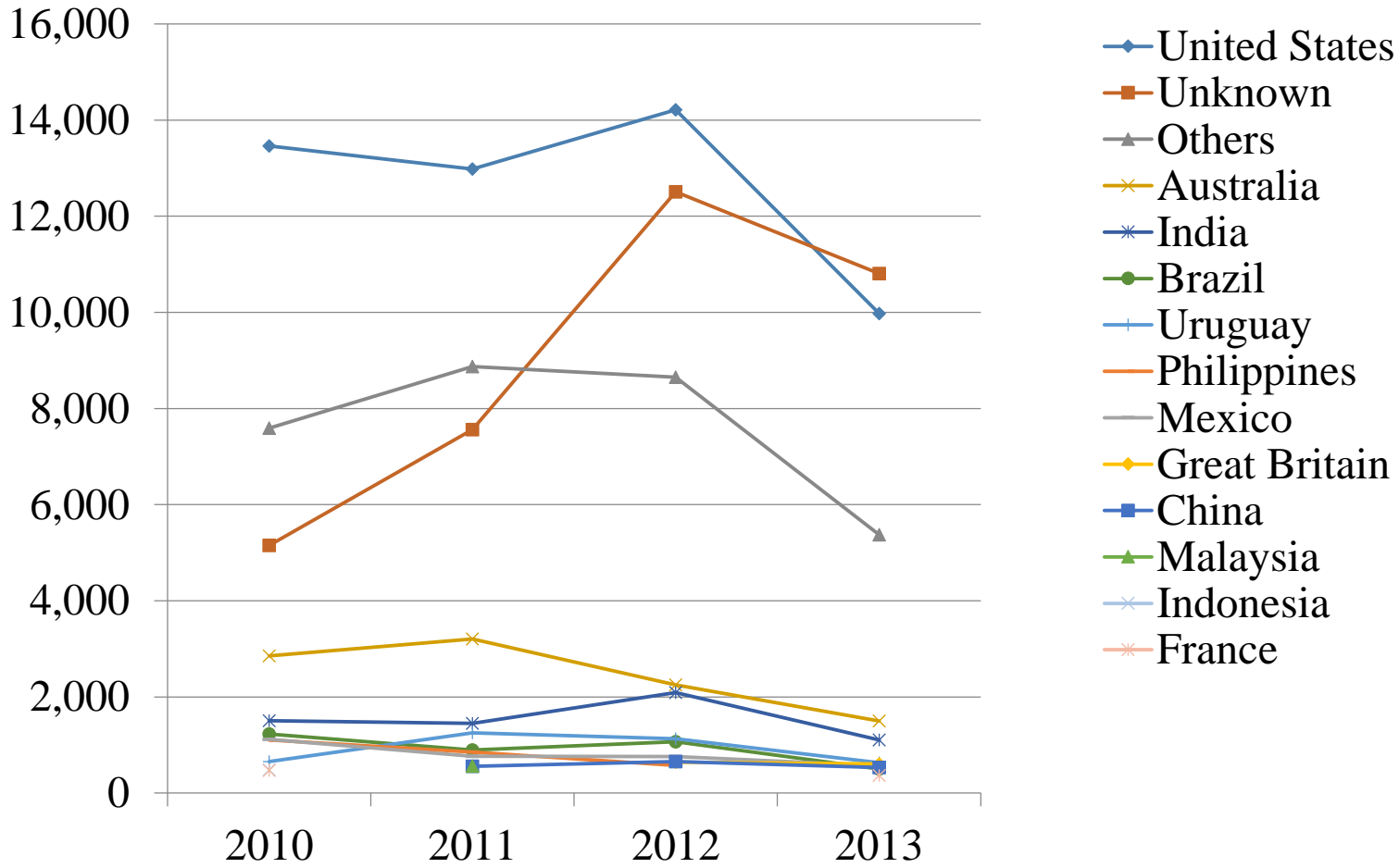
Visits per year [2006–2013]



■ Average/Month
— Total/Year

* No data of visits available from January to June in 2010

Visiting Countries [2010–2013]





Tropical Forages

Program



Thanks

A test run

- Annual legume in a maize rotation
- Cut and carry for hay
- Acid sandy soils
- Tropics 1000-2000m ASL
- Annual rainfall 800mm

Tropical Forages

An interactive selection to



CLICK !

Getting started

Selection tool

Forages fact sheets

About us



Australian Government
Australian Centre for
International Agricultural Research



Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH

DFID Department for
International
Development



CSIRO



Queensland
Government
Department of
Primary Industries
and Fisheries



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INSTITUTE



Lucid™ Selection tool

The screenshot displays the Lucid Selection tool interface, which is used for filtering entities based on specific features. The interface is divided into several sections:

- Menu Bar:** Includes 'Key', 'Features', 'Entities', and 'View'.
- Toolbar:** Contains various icons for navigation and tool functions.
- Features Available Panel:** Lists features that can be selected for filtering. The 'Rainfall (average annual): range (mm)' feature is currently selected, indicated by a text input field next to it. Other features include Intended forage use, Latitude x Altitude, Soil texture, Soil fertility, Soil pH, Soil drainage, Level of soil salinity, Level of available soil Al/Mn, Family, Life cycle, Defined dry season, Inundation, Growth form, Stem habit, Shade environment, and Frost intensity.
- Entities Remaining Panel:** Shows a list of 180 entities that remain after the current selection criteria are applied. The list includes species names such as *Acacia angustissima*, *Acacia boliviana*, *Acacia nilotica*, *Acroceras macrum*, *Aeschynomene americana*, *Aeschynomene brasiliana*, *Aeschynomene evenia*, *Aeschynomene falcata*, *Aeschynomene histrix*, *Aeschynomene indica*, *Aeschynomene villosa*, *Albizia lebbeck*, *Alysicarpus rugosus*, *Alysicarpus vaginalis*, *Andropogon gayanus*, *Antheophora pubescens*, *Arachis glabrata*, *Arachis paraguariensis*, and *Arachis pintoi*.
- Features Chosen Panel:** Currently shows 0 features chosen.
- Entities Discarded Panel:** Currently shows 0 entities discarded.
- Bottom Panel:** Includes tabs for 'Items' and 'Images'.

Select features

The image shows a software interface for selecting features. On the left, a window titled "Features Available" contains a list of options under "Intended forage use". A blue callout bubble with the text "CLICK !" points to the "conservation (hay/haylage/silage/leaf meal)" option, which is highlighted in blue. Below this window, a "Features Chosen: 1" window shows the selected options: "Ley or short term pasture (less than 4 years)", "cut & carry", and "conservation (hay/haylage/silage/leaf meal)".

On the right, a tree view shows the following structure:

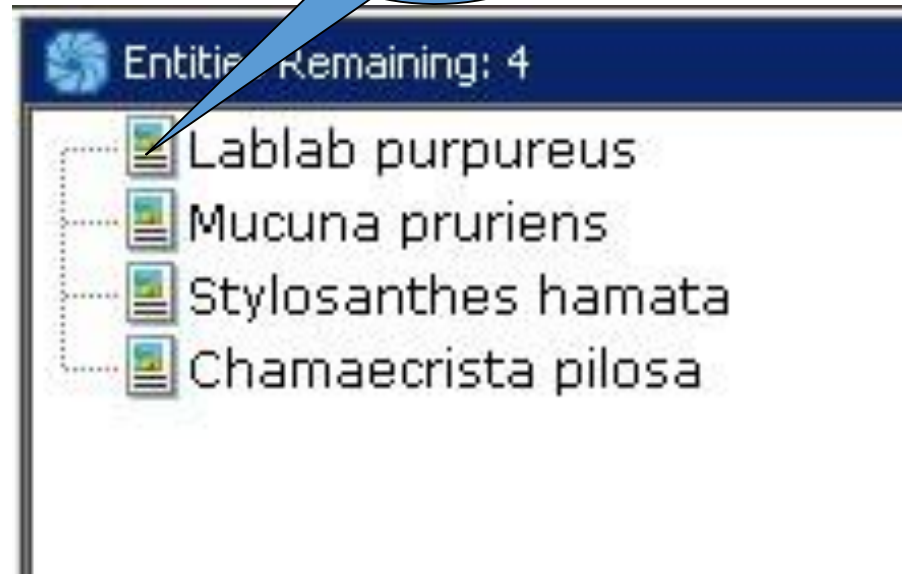
- Level of available soil Al/Mn
- Family
 - grass
 - legume
 - other
- Life cycle
 - annual
 - perennial
- Defined dry season
- Inundation
- Growth form
 - forb
 - sub shrub
 - shrub
 - tree

A blue callout bubble with the text "800-1000" points to the "forb" option in the Growth form category.

At the bottom right, a dialog box titled "rainfall (average annual):..." is open. It contains a text input field with the value "800-1000" and the unit "mm". The dialog also includes "OK" and "Cancel" buttons.

Result

CLICK !



Entities Remaining: 4

- Lablab purpureus
- Mucuna pruriens
- Stylosanthes hamata
- Chamaecrista pilosa

Fact Sheet

Lablab purpureus

Tropical Forages

[Home](#) | [Glossary](#) | [Factsheets](#) | [Information & Help](#) | [Search forage references](#)

Scientific name

Lablab purpureus (L.) Sweet

CLICK !

Synonyms

Dolichos benghalensis Jacq.

Dolichos lablab L.

Dolichos purpureus L.

Lablab niger Medikus

Lablab purpurea (L.) Sweet

Lablab vulgaris (L.) Savi

Vigna aristata Piper

Family/tribe

Family: *Fabaceae* (alt. *Leguminosae*) subfamily: *Faboideae* tribe: *Phaseoleae* subtribe: *Phaseolinae*. Also placed in: *Papilionaceae*.

Common names

hyacinth bean, lablab bean, field bean, pig-ears, rongai dolichos, lab-lab bean, poor man's bean, Tonga bean (English); dolique lab-lab, dolique d'Egypte, frijol jacinto, quiquaqua, caroata chwata, poroto de Egipto, chicarros, frijol caballo, gallinita, frijol de adorno, carmelita, frijol caballero, pois nourrice (Spanish); faselbohne, helmbohne, schlangenbohne, batao, wal, sem, lubia (the Sudan); fiwi bean (Zambia); antaque, banner bean (Caribbean); wal (India); batao (Philippines); natoba, toba (Fiji); pois Antaque; pois de Senteur, tapirucusu.



Fact Sheet

Companion species

Grasses: Annual forage sorghum (*Sorghum bicolor*). Oversown into *Panicum maximum*

Pests and diseases

The pod-boring insect *Adisura atkinsoni* causes damage to the seed during growth and storage. Other insect pests include *Helicoverpa* spp.

Lablab roots are attacked by several nematodes. Anthracnose (caused by *Colletotrichum lindemuthianum*) and stem rot (caused by *Macrophoma* spp.) have been reported. A stem rot is fairly disease-free and generally lablab is more disease-free than sorghum.

Ability to spread

Will not spread naturally under grazing. May spread by seed.

Weed potential

None due to its short-lived nature and poor longevity. Plants may live up to 3 years, but no report as a weed.

Feeding value

Nutritive value

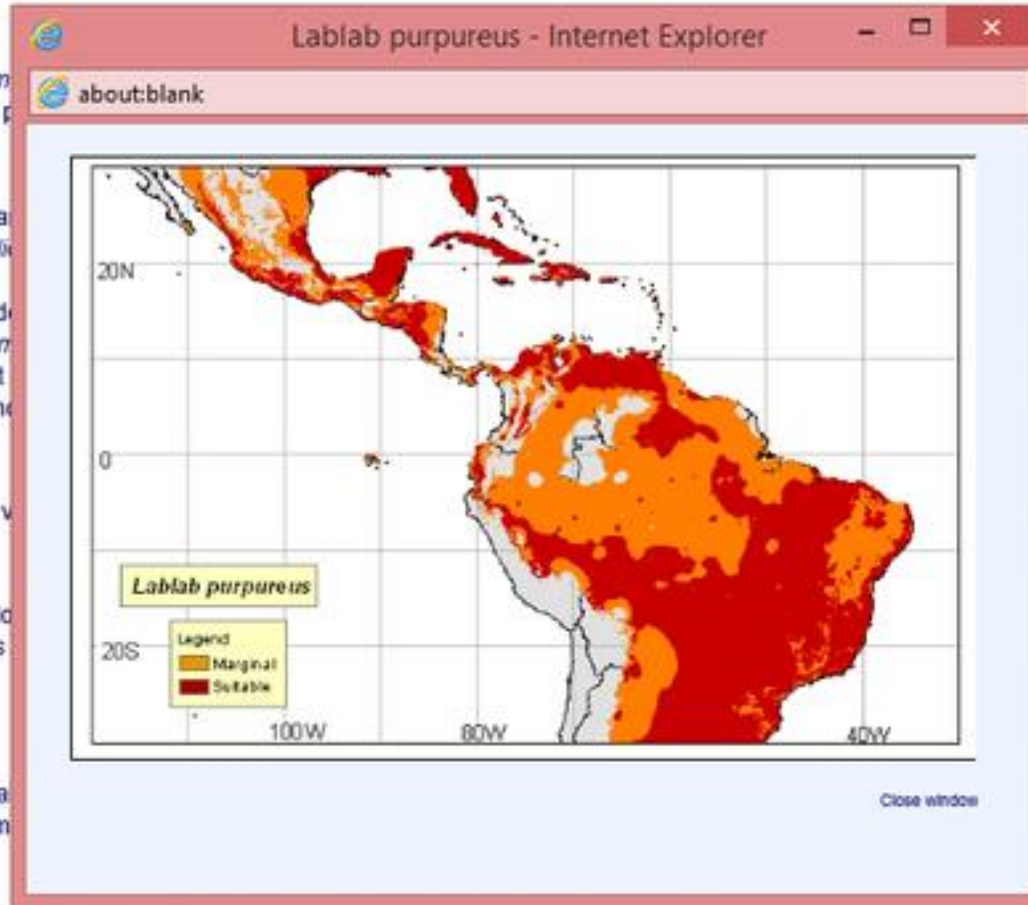
Leaf has CP content of 21-38%, commonly around 25%. Grain has CP content commonly >60% (leaves). Grain high in vitamins.

Palatability/acceptability

Leaf is highly palatable, but stem has low palatability. Palatability of grain is low to moderate depending on variety.

Toxicity

Leaf does not contain anti-nutritive factors such as tannins. Mixed plantings with forage sorghum prevents the occurrence of bloat. Grain contains



ghum (S.

reus var.
damage

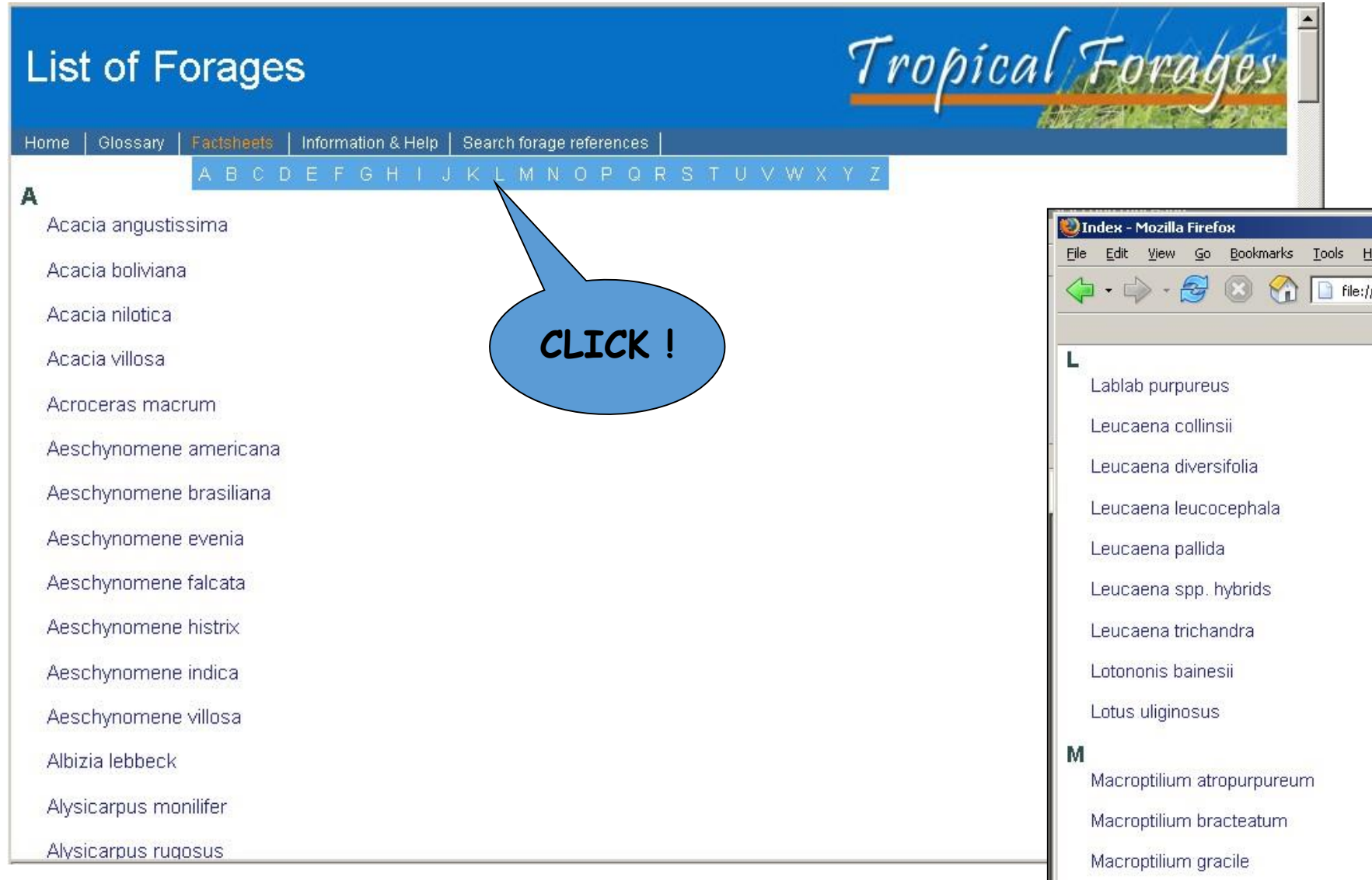
urica var.
Rongai

seed.

individual

55-76%,

Alternatively



The image shows a screenshot of a web browser displaying a website titled "Tropical Forages". The page has a blue header with the title "List of Forages" on the left and "Tropical Forages" in a script font on the right. Below the header is a navigation menu with links for "Home", "Glossary", "Factsheets", "Information & Help", and "Search forage references". A horizontal bar contains an alphabetical index from A to Z, with the letter "L" highlighted in blue. A blue speech bubble with the text "CLICK !" points to the letter "L". Below the index, a list of forage species is shown under the heading "A".

Home | Glossary | **Factsheets** | Information & Help | Search forage references

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

A

- Acacia angustissima
- Acacia boliviana
- Acacia nilotica
- Acacia villosa
- Acroceras macrum
- Aeschynomene americana
- Aeschynomene brasiliana
- Aeschynomene evenia
- Aeschynomene falcata
- Aeschynomene histrix
- Aeschynomene indica
- Aeschynomene villosa
- Albizia lebbeck
- Alysicarpus monilifer
- Alysicarpus rugosus

Index - Mozilla Firefox

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L

- Lablab purpureus
- Leucaena collinsii
- Leucaena diversifolia
- Leucaena leucocephala
- Leucaena pallida
- Leucaena spp. hybrids
- Leucaena trichandra
- Lotononis bainesii
- Lotus uliginosus

M

- Macroptilium atropurpureum
- Macroptilium bracteatum
- Macroptilium gracile

Where is it ?

- CD version available
- Available online: www.tropicalforages.info

Please feel free to ask or add information

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Email: m.peters-ciat@cgiar.org