

Development of food security through academic exchange via international cooperation

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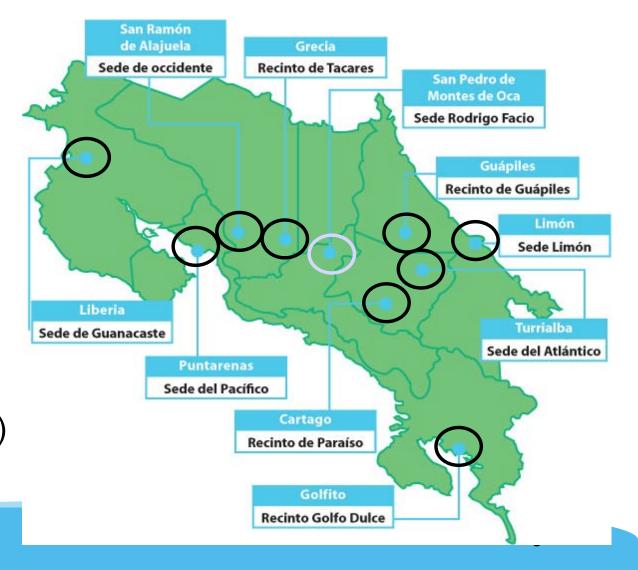




- Founded in 1843 (Universidad de Santo Tomás)
- Closed in 1888 (political and academic reasons)
- Faculties of Law, Agronomy, Arts and Pharmacy continued operating
- Re-founded in 1940 with present name

Location

- 1 main campus
- 5 regional campuses
- 4 additional smaller campuses teaching specific courses
- 1 Biological
 Research Station
 (7,800 hectares of tropical rain forest)



Teaching

- 386 degree courses
- 45,000 enrolled students (some 35,000 active)
- 3484 lecturers

Graduate programs in agricultural and food sciences

- M.Sc.
 - Biotechnology
 - Crop protection
 - Soil science
 - Animal nutrition
 - Agricultural economics
 - Food science
 - Plant production (under development)
- Ph.D.
 - Agricultural sciences



Research in agricultural sciences

- Research centers in:
 - Agronomy (soil sciences, biotechnology, postharvest, soil microbiology)
 - Seeds and Grains
 - Animal Nutrition
 - Crop Protection
 - Agricultural Economics
 - Food Science and Technology

Institute for Research in Agriculture

- Experimental stations
 - Fabio Baudrit (Crops)
 - Alfredo Volio (Animal Science)





Food Security Center: Excellence Center for Education, Exchange and Development at UHOH

Prof. Dr. Víctor M. Jiménez Universidad de Costa Rica





Mission of FSC

- ... to provide innovative and effective scientific contributions to achieve food security
- in particularly FSC is contributing towards SDG 1

 No Poverty and SDG 2 Zero Hunger of the Agenda

 2030 for Sustainable Development (UN), especially towards the eradication of hunger and malnutrition
- ... further goals FSC contributes to are...



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Mission of FSC

1 - 5, 12, 13, 15, 17

http://www.bmz.de/de/was_wir_machen/ziele/ziele/2030_agenda/index.html







































Mission of FSC - Approaches

Multidisciplinary approach through

teaching,

research and

policy advice in cooperation with national and international development organizations and HEI partners in the developing world

- → thematic focus on biomass and food availability, food access, biomass and food use, food quality and safety, giving particular concern to gender equality and sustainability of agricultural production.
- Promotion of young scientists (PhD, Postdoc)



Food Security Center - Partners





Objectives

- 1. Interdisciplinary teaching and training of PhD students and post-doctoral fellows at Hohenheim und partner universities
- 2. Demand-driven and impact-oriented research
- 3. Knowledge transfer and capacity strengthening by international academic cooperations
- **4. Public relations work and (policy) advising** related to issues of food security at national and international levels



Research I

• **BiomassWeb / Globe E** (BMBF) including 1 sub-project at FSC and 4 further sub-projects at the University of Hohenheim (2013-2018):

Project objective: Improvement of food security in Africa (amongst others Ethiopia, Ghana) by increasing the productivity and efficiency in biomass supply chains



Research & Education

German Ethiopian SDG Graduate School "Climate Change Effects on Food Security (CLIFOOD)" (2016-2020, DAAD)





Research & Education

- Development and implementation of insect-based products to enhance food and nutritional security in sub-Saharan Africa (EntoNUTRI), 2016-2019, in close cooperation with the International Centre of Insect Physiology and Ecology (icipe) and the University of Bonn (ZEF)
- Development and implementation of an international partnership in training and research between the University of Hohenheim and Njala University, specifically in the field of "Food and Nutrition Security and the Right to Food" (NutritionSec), 2017-2020, (DAAD)

Capacity Building and Education - Examples

 Nutrition Training Workshops to Improve the Nutrition Security of Syrian Refugee Children in Lebanon (February 2017) in cooperation with the American University of Beirut (AUB)

Food Security Networking Seminar related to 3rd Hidden Hunger
 Congress (March 2017) with 25 DAAD Alumni from 15 countries and 4

continents



FSC Performance

- FSC Excellence Scholarships (long- and short term):
 PhD's (56 long-term), Postdocs, visiting professors (6)
 → more than 200 peer-reviewed publications
- German-Ethiopian SDG Graduate School CLIFOOD
- Interdisciplinary PhD Program: "Global Food Security"
- > 5 Summer Schools
- > 50 Short Courses
- > 30 Regional Workshops
- Successful establishment of international conferences such as the Biennal Hidden Hunger Congress and the Annual World Food Day Colloquium
- FSC in dialogue series





FSC Performance in Latin America

Short courses with lecturer from (conducted in)

- Thailand (in Costa Rica) 2010
- Germany (in Costa Rica) 2010
- Brazil (in Thailand) 2011
- Costa Rica (in Malawi) 2011
- Germany (in Costa Rica) 2011 (x2)
- Brazil (in Thailand) 2013
- Germany (in Cuba) 2013
- Thailand (in Costa Rica) 2013
- Germany (in Costa Rica) 2014 (x3)
- Chile (in Costa Rica) 2014
- Thailand (in Costa Rica) 2014
- Germany (in Costa Rica) 2015
- Costa Rica (in Thailand) 2015
- Thailand (in Costa Rica) 2015
- Uruguay (in Costa Rica) 2015
- Germany (in Costa Rica) 2016 (x3)
- Benin (in Costa Rica) 2016
- Thailand (in Costa Rica) 2016









FSC Performance in Latin America

Regional seminars with participants from (lecturer from)

- Nicaragua (3), Guatemala (3), El Salvador, Brazil (2), Argentina (3), Colombia (2), Honduras, Paraguay; lecturer from Brazil in Costa Rica (2010)
- Chile, Colombia (2), Argentina, Mexico (3), Venezuela; lecturer from Costa Rica in Brazil (2011)
- Peru, Mexico (4), Ecuador, Colombia, Brazil, Costa Rica; lecturer from Chile in Costa Rica (2012)
- Cuba, Uruguay, Costa Rica (2), Ecuador, Mexico, Colombia Chile, Bolivia; lecturer from Costa Rica in Argentina (2013)
- Panama, Uruguay, Mexico, Chile, Guatemala, Colombia, Brasil (2); lecturer from Spain in Costa Rica (2014)
- Colombia (3), Chile (3), Mexico, Brazil, Costa Rica (2); lecturer from Costa Rica in Uruguay (2015)
- Mexico (2), Brazil, Colombia (2), Chile, Uruguay, Argentina, Cuba; lecturer from Germany in Costa Rica (2015)
- Colombia (2), Panama, Dominican Republic, Mexico, Peru, Brazil, Chile
 (2); lecturer from Spain in Costa Rica (2016)
- Costa Rica (9), Bolivia, El Salvador in Merida, Mexico (2017)





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FSC Performance in Latin America

Short-term postdoc stays from (to)

- Cuba (Costa Rica)
- Cuba (Mexico)
- Mexico (Costa Rica)



REVISIÓN BIBLIOGRÁFICA

SITUACIÓN DEL BOVINO CRIOLLO LECHERO TROPICAL (CLT) EN MÉXICO, NICARAGUA Y COSTA RICA

STATUS OF TROPICAL DAIRY CREOLE (CLT) IN MEXICO, NICARAGUA AND COSTA RICA

Vilaboa Arroniz, J.1*, Quirós Madrigal, O.J.2, Díaz Rivera, P.1 y Zetina Córdoba, P.3

¹Colegio de Postgraduados. Campus Veracruz. Veracruz. México. *jvilaboa@colpos.mx ²Centro de Investigación Económica y Desarrollo Agroempresarial (CIEDA). Facultad de Ciencias Agroalimentarias. Ciudad Universitaria Rodrigo Facio. San Pedro, San José. Costa Rica.

> AGRONOMÍA MESOAMERICANA 23(1):167-178. 2012 ISSN: 1021-7444

LOS SISTEMAS GANADEROS CON CRIOLLO LECHERO TROPICAL (REYNA) EN COSTA RICA¹

Julio Vilaboa-Arroniz², Olman Quirós-Madrigal³, Pablo Díaz-Rivera², Rodolfo WingChing-Jones⁴, Natalie Brower-Keating⁵, Pedro Zetina-Córdoba⁶

FSC Performance in Latin America

Project proposal in the frame of the MICITT-BMBF 2017 call:

"Non-destructive detection of microbial infestation and mycotoxins in cereals to improve food safety in Costa Rica"

UCR: Prof. Dr. Víctor M. Jiménez, Dr. Adriana Murillo, M.Sc. Catalina Acuña

UHOH: Prof. Dr. Joachim Müller, FSC-team

Aim: to develop a methodology for the rapid and non-destructive evaluation of microbial infestations and presence of mycotoxins in rice and maize grains



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FSC Performance in Latin America

Peer-reviewed scientific publications

>15 publications in international peer-reviewed journale (2010-2017)

Scientia Horticulturae 179 (2014) 284-292



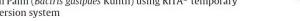
Contents lists available at ScienceDirect

Scientia Horticulturae

journal homepage; www.elsevier.com/locate/scihorti



Improved high-efficiency protocol for somatic embryogenesis in Peach Palm (Bactris gasipaes Kunth) using RITA® temporary immersion system



Angelo S. Heringera, Douglas A. Steinmacherb, Hugo P.F. Fraga, Leila N. Vieira, Tiago Montagna^a, Liliana A.P. Quinga^a, Marguerite G.G. Quoirin^b, Víctor M. Jiménez^d, Miguel P. Guerra 4,*

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Contents lists available at ScienceDirect

Postharvest Biology and Technology

journal homepage: www.elsevier.com/locate/postharvbio



Transcription analysis of softening-related genes during postharvest of papaya fruit (Carica papaya L. 'Pococí' hybrid)



Dessireé Zerpa-Catanho^a, Patricia Esquivel^b, Eric Mora-Newcomer^c, Marco Vinicio Sáenzd, Raúl Herrerad, Víctor M. Jiméneza, f.

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Micron 89 (2016) 21-27



Contents lists available at ScienceDirect

Micron





Occurrence and characterisation of calcium oxalate crystals in stems and fruits of Hylocereus costaricensis and Selenicereus megalanthus (Cactaceae: Hylocereeae)



María Viñas a,1, Víctor M. Jiménez a,b,*

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Food Chemistry 221 (2017) 673-682



Contents lists available at ScienceDirect

Food Chemistry

journal homepage: www.elsevier.com/locate/foodchem



Carotenoids and carotenoid esters of orange- and yellow-fleshed mamey sapote (Pouteria sapota (Jacq.) H.E. Moore & Stearn) fruit and their postprandial absorption in humans



Tania Chacón-Ordóñez a, Ralf M. Schweiggert a, Anja Bosy-Westphal b, Víctor M. Jiménez c,d, Reinhold Carle a.e., Patricia Esquivel f.*

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Recent Events 2017/2018

- November 6-25, 2017, University of Abomey-Calavi, Benin: 1st FSC Summer School in Africa "Food and Nutrition Security for the next 25-50 years"
- November 20-30, 2017, Hawassa University, Ethiopia: Block Seminar 1+2, German-Ethiopian Graduate School "Climate Change Effects on Food Security (CLIFOOD)"
- December 3-6, 2017, Cape Town, South Africa: 3rd International Conference on Global Food Security (oral presentation by FSC)

Upcoming Events 2017/2018

Save the date:

- **December 4-6, 2017**, UCR, Costa Rica: Regional Seminar "Advanced research on promissory edible plants in Latin America: tools to improve Food Security in the region", with two sub-topics: 1) "Biodiversity of edible plants in Latin America: phytochemicals and nutrients for the wellness and health" and 2) "Physiological and biotechnological approaches in the use of promising edible plants in Latin America".
- January 18-20, 2018, Berlin: Global Forum for Food and Agriculture "Shaping the Future of Livestock – sustainably, responsibly, efficiently"
- October 16, 2018, Hohenheim: World Food Day Colloquium



Possibilities for further cooperation

- FSC engages in research...
 - ... related to your food security (FS)-relevant research themes
- FSC can be involved...
 - ... in your FS-relevant activities
- Your institution...
 - ... can be involved in FSC's activities
- FSC can serve your institution...
 - ... as generator of research ideas and scientific service provider



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