



10th Annual Meeting of the Board of Directors of PROCINORTE

Task Force on Tropical and Subtropical Fruits

2008 Report and Action Plan 2009+

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Mexico, D.F., 28 & 29th January 2009



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Background

- 2001. Canada. TF conception and proposal design.
- 2002. Washington, D.C. TF was planned.
- 2003. Nova Scotia, Canada. TF was consolidated with Canada and Mexico delegates. TF objectives were defined.
- 2004. Pto. Vallarta, Mexico. The USA representative joined the team. Objectives, crop priorities and research projects were ranked and put in place.
- 2005-2006. Mayaguez, Pto. Rico and Ottawa, Canada. Relevant research, development and adaptive quality and traceability solutions for producers, packers, transporters, exporters and research agencies were designed and proposed.
- 2007. Santiago Ixcuintla, Mexico. Avocado and mango fruit maturity indexes established.
- 2008. Miami, FL. Evaluation and calibration of non-destructive techniques to determine “on tree” ripeness of avocado, mango.

Members of the Task Force on Tropical and Subtropical Fruits

- Dr. Gilles Doyon
 - Agriculture and Agri-Food Canada, Co-leader*
- Dr. Ricardo Goenaga
 - USDA-ARS-TARS, Co-leader
- Dr. Samuel Salazar
 - INIFAP-Mexico, Leader
- Collaborators:
 - Dr. Jorge A. Osuna (INIFAP)
 - Dr. José Luis González (INIFAP)
 - Dr. Jacques-André Landry (Université du Québec)

Objectives of Task Force

- General objective
 - Improve production, consumption and trade of tropical and subtropical fruits.
- Specific objectives
 - Communication and collaboration among scientists in pre- and postharvest areas, quality and safety of tropical and subtropical fruits.
 - Identification of common problems and opportunities as well as possible research collaboration with fruit crops such as avocado, mango, and others.

2008 Program and Accomplishments

Accomplishments

- Task Force Web page (<http://www.ars-grin.gov/may/procinorte/index.html>) is updated and now contains references/links to the most recent scientific papers and presentations done by members of the Task Force.
- Web page is now available in English, Spanish and French.
- A recipes section was added.

Accomplishments ..

- Translation (English, French) of fruit quality grading charts for avocado and mango.
 - On going: Dr. Jacques-André (ETS,Canada).
- Evaluation and calibration of non-destructive techniques to determine “on tree” ripeness of avocado, mango, and mamey sapote.
 - Submitted scientific paper. Evaluating ‘Hass’ avocado maturity using hyperspectral imaging. *D. Girod, J.A. Landry, G. Doyon, J.A. Osuna-García, S. Salazar-García and R. Goenaga.*

44th Caribbean Food Crops Society Meeting

Miami, Fla., USA, 13-17 Jul. 2008

- Very well attended. Representatives from USA, Caribbean Basin, Central and South America.
- Meeting proved to be an excellent venue to increase visibility of Task Force.
- Participants showed lots of interest in objectives and work of Task Force.



Task Force activities at CFCS meeting, Miami, Fla., USA

- Eight presentations offered by Task Force members as outcomes of research:
 1. PROCINORTE'S Tropical and Subtropical Fruits Task Force: a Tri-National Effort to Improve Fruit Quality and Trade
 2. Evaluating **Avocado** Maturity Using Hyperspectral Imaging
 3. Yield and Fruit Quality of **Rambutan** Cultivars Grown at Two Locations in Puerto Rico
 4. Crecimientos Vegetativo y Reproductivo del **Aguacate** 'Hass' en Varios Climas de Michoacán, México
 5. Corrección de la Deficiencia Crónica de Zinc en **Aguacate** 'Hass'
 6. Relationship between Chlorophyll Fluorescence and Dry Matter Content of 'Hass' **Avocado** Fruit
 7. Effect of Harvest Time and Ripening Degree on Quality and Shelf Life of 'Hass' **Avocado**
 8. Influencia del Clima, Riego y Época de Floración Sobre la Composición Nutrimental del Fruto de **Aguacate** 'Hass' en Michoacán

Accomplishments ...

- 3ra. Reunión Nacional de Innovación Agrícola y Forestal (Mérida, Yucatán, Méx. 3-8 Nov. 2008)
 - Resultados preliminares sobre la técnica de fluorescencia de clorofila para determinar la madurez de cosecha en **mango** 'Ataulfo'.
- Primer Congreso Nacional del Sistema Producto Aguacate (Uruapan, Michoacán, Méx. 3-5 Dic. 2008)
 - Evaluación de la fluorescencia de la clorofila como alternativa para determinar la madurez legal en **aguacate** 'Hass'

Accomplishments

- Publication of the brochure “Use of zinc and boron to increase fruit size and quality of ‘Hass’ avocado”
 - Postponed until 2009.
- Electronic publication: A Guide to Recognize and Eat Some Tropical and Subtropical Fruits (English, Spanish and French).
 - Recipes section in TF Website.
- Validation of quick techniques to monitor water quality in hot water treatment tanks in packinghouses for mango export. A Manual will be produced.
 - Dr. Osuna is writing the Manual.
- Attendance to the annual meeting of the Board of Directors of PROCINORTE. Mexico, D.F. 28 Jan 2009.

2008 Additional TF Activities and General assembly

- Touring during the CFCS meeting in Miami, Fla.
 - Facilities of the Tropical Research and Education Center (TREC) of the University of Florida, Homestead, Florida.
 - USDA-ARS Subtropical Horticulture Research Station (USDA-ARS-SHRS) in Miami, Florida.
 - Brooks Tropicals' avocado orchards and packinghouse facilities at Homestead Fla.
- Validation of the TF annual report.
- Plan of action for 2006+ was validated.

Projects for 2006+

USA, Canada and Mexico

1. Effect of pre- and postharvest management on mango and avocado shelf-life.
2. Automatic collection of data (trace) and creation of a database with regard to quality and food safety in mango and avocado supply chains.
3. Identification of mango germplasm for anthracnose resistance through field screening and marker assisted selection.
4. Development of non-destructive optical vision technology for avocado, mango and mamey sapote quality assessment.
5. Validate rapid methods to detect chemical and microbiological contamination (air, water, fruit and surfaces).

2009 Action Plan

ACTIVITY

- Evaluation and calibration of the chlorophyll fluorescence technique to determine “on tree” legal maturity of ‘Hass’ avocado.
- Evaluating Hass avocado maturity using Hyperspectral Imaging
- Calibration of chlorophyll fluorescence to determine “on tree” ripeness of ‘Ataulfo’ mango.
- Preliminary evaluation of chlorophyll fluorescence to determine “on tree” ripeness of mamey zapote.
- CD Publication of a Manual on validation of quick techniques to monitor water quality in hot water treatment tanks in exporting mango packinghouses.
- Publication of the brochure (in Spanish) “Use of zinc and boron to increase fruit size and quality of ‘Hass’ avocado”.
- Annual meeting of the Task Force in conjunction with the 3rd. Latin American Avocado Congress (Medellin, Colombia, 11-13 Nov. 2009).
- Annual meeting of the Board of Directors of PROCINORTE. Place TBA.

Task Force strengths

- The Task Force is multidisciplinary, research-oriented and consolidated.
- Members have presented research objectives to potential customers and stakeholders in the three countries.
- Crops and research priorities have been defined.
- There is a significant number of scientists willing to participate in collaborative research.
- For the harmonization of methodologies among the three countries, the acquisition of stationary or portable equipment is necessary.

Task Force constrains

- A stronger Institutional commitment to support Task Force initiatives for engagement in trinational research is necessary.
- Administrative regulations as well as budget constrains at each delegate's institution make difficult to spend money with researchers from abroad.
- International travel expenses restrict participation to accomplish Task Force objectives.

Funds raising

- Support to PROCINORTE Task Forces should be part of our Institutional research agendas
- As OECD countries we have no access to research and development assistance.
- Alternative raising funds strategies should be considered by the Board of Directors.

Possible users of Action Plan 2006+

- ... “Clients” of the new gained Expertise, new Network, Terminology uniformity, Technology “know how” and Transferability.
 - The Canadian, Mexican and USA customers and stakeholders such as (producers, packers, technology providers, extension agents...).
 - Regulatory Agencies, Certification bodies,..
 - Each Governmental Institute, Research Org. for delivery of better science and advice.
 - IICA and its members.



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- IICA Canada, USA and Mexico.
- PROCINORTE's Board of Directors.

