



9th Annual Meeting of the Board of Directors of PROCINORTE

Task Force on Tropical and Subtropical Fruits 2007 Report and Action Plan 2008+

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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. Participation at the ISTS meeting; research on avocado quality; annual meeting.

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)

General 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.

2007 Accomplishments

Participation in the 53th annual meeting of the Interamerican Society for Tropical Horticulture. Morelia, Mich., México. 7-12 Oct.

- Very well attended. Representatives from North, Central and South America, including researchers, extension agents, producers.
- Meeting proved to be an excellent venue to create awareness of Task Force.
- Participants showed lots of interest in objectives and work of Task Force.



Task Force activities at ISTH annual meeting, Morelia, Mexico

- Five presentations offered by Task Force members as outcomes of research:
 - Mission of PROCINORTE's Tropical and Subtropical Fruits Task Force.
 - Food safety issues in export mango.
 - The Tropical Fruit Research Program of the USDA-ARS Tropical Agriculture Research Station.
 - Relationship between skin color and some quality characteristics of exportable 'Hass' avocado fruits
 - Influence of soil moisture on the root growth dynamics of 'Hass' avocado trees.

Avocado fruit quality assessment in packinghouses of Michoacán, Mexico.

- Effect of harvesting time and ripening degree on initial quality and shelf life of 'Hass' avocados.



Research at avocado packinghouse



COLLECTING AND GRADING SAMPLES



MEASURING SKIN AND PULP COLOR, FIRMNESS AND DRY MATTER

Accomplishments (contd.)

- The manuscript “Relationship between skin color and some quality characteristics of exportable ‘Hass’ avocado fruit” was prepared with results of the 2006 mission in Mexico and submitted for publication in the proceedings of the 53th meeting of the ISTH.
- Dr. Gilles Doyon et al. submitted a 4-year collaborative research proposal on tropical and subtropical fruits to AAC-Research (External review).
- Task Force is doing the necessary paperwork to obtain original charts as well as the permit to translate fruit quality grading charts for avocado and mango (English, French).

Accomplishments (contd.)

- Task Force web page (<http://www.ars-grin.gov/may/procinorte/index.html>) is constantly updated and now contains references/links to the most recent 20 scientific papers published by members of the Task Force.
- In November, Web page will be available in English, Spanish and French.
- Field establishment of mango germplasm in Puerto Rico for screening for anthracnose tolerance (in house).

Accomplishments (contd.)

- Preliminary work with Prof. Jacques A. Landry, École de Technologie Supérieure, Montréal (QC) Canada on non-destructive techniques (hyperspectral) to determine ripeness of avocado was performed. Potential use has been extended to mamey sapote and mango.
- A demonstration of the use of a portable fluorescence unit as well as a shock meter device was done on avocado in Mexico in October (Potential use in mango and mamey sapote is being considered).
- Dr. Ricardo Goenaga submitted a 5-year collaborative research proposal on development of production systems for Tropical and Subtropical fruit crops to USDA-ARS (External review).

2007 TF General assembly

- Held in Santiago Ixcuintla Experiment Station (INIFAP), Nayarit, México.
 - Validation of the TF annual report.
 - Future postharvest research on mamey sapote in germplasm collection in Puerto Rico was discussed.
 - Final details of 2007-08 research plan on avocado at Uruapan were approved.
 - Plan of action for 2006+ was validated.

2007+ Action Plan

Activity	Responsible
Field establishment of mango germplasm in Puerto Rico for screening for anthracnose tolerance.	Dr. Ricardo Goenaga
Research on edible coatings for tropical fruits (USDA-ARS.TARS (Mayaguez, Puerto Rico).	Dr. Ricardo Goenaga
Update of the Task Force Web Page.	Dr. Ricardo Goenaga
Organization of an International Tropical Fruits Conference , to be held in Canada in 2008 or 2009 about Producing, Quality criteria, Traceability, Safety and Optimum conditions for international distribution.	Dr. Gilles Doyon

2007+ Action Plan

Activity	Responsible
Evaluation and calibration of non-destructive techniques to determine “on tree” ripeness of avocado, mango, and mamey sapote. Two flight tickets plus perdiem for Prof. Jacques A. Landry and his Grad Student from the École de Technologie Supérieure, Montréal (QC) Canada.	Dr. Gilles Doyon and Jacques A. Landry
Annual meeting of the Task Force in conjunction with the Caribbean Food Crops Society in Florida (Place to be announced). Results of work done by the TF members will be presented. Four international and one domestic flight tickets plus six days perdiem for five people.	Dr. Samuel Salazar
Publication of the brochure (in Spanish) “Use of zinc and boron to increase fruit size and quality of ‘Hass’ avocado”. 1000 brochures.	Dr. Samuel Salazar
Electronic & CD Publication: A Guide to Recognize and Eat Some Tropical and Subtropical Fruits (English, Spanish and French).	Dr. S. Salazar (Spanish), Dr. R. Goenaga (English) and Dr. G. Doyon (French)
Attendance to the annual meeting of the Board of Directors of PROCINORTE. Place TBA.	Dr. Samuel Salazar
Validation of quick techniques to monitor water quality in hot water treatment tanks in exporting mango packinghouses. A Manual will be produced.	Dr. Jorge Osuna

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.
- Good support in lab equipment to the Canadian delegate researcher (AAFC).

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).

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.

