Protea Newsletter International

An e-Newsletter for the International Protea Industry
and Scientific Community to Promote
Communication, Cooperation and the Advancement of Science,
Technology, Production and Marketing
(and to promote the Hawaii Protea Industry)

Volume 1, Number 1, November 2008

Editor: Ken Leonhardt
Chairman, lnternational Protea Working Group (IPWG),
International Society for Horticultural Science (ISHS)
Professor, College of Tropical Agriculture and Human Resources,
University of Hawaii, Honolulu, Hawaii USA

Contents:

College of Tropical Agriculture and Human Resources
UNIVERSITY OF HAWAI'I AT MĀNOA

IPA Conference and IPWG Symposium

Stellenbosch, South Africa, August-September 2008

Delegates from 18 countries from 6 continents were drawn to the Cape Floral Kingdom, home of most of the ornamental Proteaceae, to learn of the latest Fynbos research, global production and market perspectives, and to interact and collaborate with friends and colleagues at the 13th International Protea Association Conference and the 9th International Protea Working Group Research Symposium at the Protea Hotel, Technopark, Stellenbosch, South Africa 3 to 6 September, and to experience an eventful, bone-chilling pre-tour complete with an endless array of delicious foods and wonderful wines at every meal, from 29 August to 2 September 2008.

The organizing committee of Hans Hettasch, Chairman, Arnelia Farms, Peter Dorrington, Heidedal, SAPPEX, Caroline O'Brien, Future Fynbos, Lynn Hoffman, Stellenbosch University, Gerrit Nieuwoudt, Colors Fruit and Retha Venter, Secretariat did an outstanding job of creating this memorable educational, business and social experience, for which all of the delegates are most grateful. The experience included a delightful afternoon at Kirstenbosch National Botanical Garden.

The IPWG research symposium featured 31 oral and 8 poster presentations grouped under the headings Nutrition & Irrigation, Diseases & Pest Management, Biomass Management & Flowering, Genetics, Breeding & Propagation, Proteaceae in a Global Economy, Post harvest Physiology & Technology, and Biodiversity & Conservation of Proteaceae. The presentations were very high quality. The proceedings of the symposium will be published as a volume of Acta Horticulturae and will be sent to registered delegates. Others will be able to purchase the proceedings from ISHS. Its availability will be announced in future PNI issues. Editor.

Link to group photograph of delegates at Stellenbosch
www.ctahr.hawaii.edu/leonhardtk/scan0002.jpg

Regional Reports given at the IPA 2008 Conference, Stellenbosch, South Africa

Several regional reports were made as power point presentations. You can view these presentations by hitting on the url links below.

World overview
By Peter Dorrington
www.ctahr.hawaii.edu/leonhardtk/global.ppt

South Africa
By Peter Dorrington
www.ctahr.hawaii.edu/leonhardtk/SouthAfrica.ppt

Chile
By Flavia Schiappacasse and Eduardo Olate
www.ctahr.hawaii.edu/leonhardtk/Chile.ppt

Portugal-mainland
By Maria Jose Leandro
www.ctahr.hawaii.edu/leonhardtk/Portugal.ppt

Portugal-Azores
By Carlos Ormonde
www.ctahr.hawaii.edu/leonhardtk/azores.ppt

Australia
By Audrey Gerber
www.ctahr.hawaii.edu/leonhardtk/Australia.ppt

USA – Hawaii
By Samuel Bayaoa

Overview
Protea production in Hawaii started over 30 years ago by a few growers in Maui, located in Kula and Olinda along the slopes of Haleakala. They thrived in this Mediterranean type climate – cool, dry and sunny and their exotic looks attracted many new farmers. Growers on the Big Island discovered they also do well in their course a'a lava at higher elevations and started growing them too. With the availability of cheaper, larger parcels of land, farming Proteas have gained in popularity on the Big Island, particularly in the Ocean View agricultural subdivision in Kau. Other areas of production are in Pahala and Waimea others scattered throughout the island. According to the most current 2007 Department of Agriculture Hawaii Statistics, there are 27 producers Statewide, generating US$2.1 million in Protea sales.

The entire State of Hawaii has been in a drought since the beginning of 2008, which has put a strain on the plants and pocketbooks. The majority of farms on Maui utilize drip irrigation, while many on the Big Island must rely on water catchment systems on their farms so at times must truck in supplemental water.

Sulfur dioxide effects

The Kilauea volcano on the Big Island of Hawaii has been erupting continuously since 1983. On March 12, 2008, a new vent was formed in the Halemauumau Crater, blowing volcanic ash and emitting sulfur dioxide (S02) into the air. When mixed with dust and sunlight, it turns into 'vog'. This vog creates a thick haze over the islands that sometimes stretches up the island chain as far as the island of Oahu some 200 miles away. When combines with moisture, vog turns into 'acid rain'. Some plants, particularly some native species like Ohia Lehua, appear to be unaffected or have little damage by the S02 emissions. Proteaceae, on the other hand, have been among the hardest hit especially during periods of heavy emissions causing higher concentrations of sulfur dioxide in the air. The entire plants burn, wilt, and sometimes defoliate. Flowers, if they develop at all, are small, burnt or deformed, and their vase life are drastically reduced. Leucospermums seem to be the most sensitive, with the leaves and stems burning, some plants eventually dying. Several Leucadendrons were also badly burned with the exception of a few like the salignum cultivars. Cynaroides King Protea cultivars, regular and miniatures, as well as several banksias seem to be the most tolerant.

For the last 4 months our farm has been cooperating with the University of Hawaii to trial three different spray techniques to try and minimize the damaging effects of the vog and acid rain. One treatment calls for washing plants down with water to remove the S02, a long process taking 9 hours a day to treat all the plants. Another is spraying with the fungicide 'Kaligreen' which is being used as an acid neutralizer to protect the leaf surfaces, and the third is spraying with the anti-transpirant 'Leaf Shield' that seals leaf stomates closed and hopefully prevents S02 from entering the leaves. Unfortunately, the majority of Big Island growers are not on a County water distribution system so must depend on a water catchment systems which must be monitored for ph levels because of the acidifying S02. We are also experiencing a long drought period, which means we must pay to have water trucked in. This huge added expense has become extremely difficult due to the loss of income from practically zero saleable cut flowers or potted plants to help offset this expense. Many growers feel powerless to protect their plants from this chronic problem that may continue for many decades to come. Some have given up and abandoned their fields. Others, like myself, are trying whatever measures we can to keep our plants alive.

Future research

A survey conducted in 2006 by the University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR) to determine the priority needs of local growers showed that the majority of growers were in favor of obtaining new Leucadendron cultivars to add to their product mix. They have developed approximately 25 hybrids that are being grown out for further testing and possible release.

CTAHR is presently conducting a survey to determine the affects of S02 on all Proteaceae cultivars being grown in Hawai'i. Based on 14 responses to date, 94% of total acreage has been damaged by vog resulting in USD $364,755 in lost revenues. With these

results, CTAHR hopes to discover genetic link(s) to resistance or tolerance to high S02 levels and, if successful, plans to develop a breeding program to create new vog tolerant cultivars. This is our best hope for a long-term solution to a long-term problem.

Link to articles on sulfur dioxide injury to crops (Editor).
www.ctahr.hawaii.edu/ctahr2001/CTAHRInAction/Oct_08/vog.asp

USA – California
By Lawrence Kellar

2007 – A Year of Challenge
San Diegans are accustomed to near perfect weather and climate considered optimal for growing a variety of crops. However, idyllic calm gave way to crisis not once, but twice in 2007 as freeze and then a firestorm left scars on the agricultural landscape of San Diego County. In January, normal temperate San Diego temperatures dropped so low that new records were set throughout the county. Temperatures remained below freezing for days, dropping at one point to a frigid 16 F. There was an estimated collective crop loss of $114 million for the county. In March, due to significant amount of loss, President Bush, as well as the Secretary of Agriculture, declared the freeze a disaster thereby opening the way for federal assistance.

Unfortunately for San Diego County farmers, another catastrophic event occurred in 2007. In October, several wildfires burned uncontrolled through San Diego County. Three of the fires greatly affected agriculture. The Witch Creek, the Rice Canyon and the Poomacha Fires roared through agricultural areas of north San Diego County. Unfortunately for some growers, trees recovering from the frost damage were hit by devastating fires. Agriculture losses were estimated at $60 million dollars.

Despite the freezing temperatures and fires San Diego farmers once again showed their fortitude by producing the most bountiful agricultural year on record. The total value of San Diego County agriculture increased 5% over 2006 for a final dollar value of $1,536,429,974. San Diego County's unique topography creates a wide variety of microclimates resulting in nearly 30 different types of vegetation communities. This diversity allows for San Diego to grow over 200 different agricultural commodities – from strawberries and tomatoes along the coast, to apples in the mountain areas, proteas inland to palm trees in the desert.

San Diego County is the most southwestern county in the United States with a geographic area of 4,200 square miles. San Diego County has 5,255 farms, the second highest number of farms of all counties in the United States. 63% of San Diego County farms are 1-9 acres. In San Diego 92% of the farms are family owned. 77% of farmers live on their land. Native Americans operate 19% of the farmland in San Diego County. San Diego

County ranks number one in both California and the nation in the production value of nursery, floriculture, and avocados.

2008 – California is bone dry
January brought the reality of what many years of minimal rain would result – a 30% cutback in agricultural usage from 2007. This has been a major set back and has prevented many farms from expanding.

Introduction
Protea grown in the State of California is apportioned approximately 75% in San Diego County and 25% in Santa Barbara and Ventura Counties.

Number of Growers
It is estimated we have over 125 active growers. Not all the growers are members of the California Protea Association and it is therefore difficult to determine the acreage and varieties under production.

Acres under production
Industry estimates of protea acreage are 1200- 1500 acres planted. All plantings are irrigated, most with low volume systems. Income figures estimated at $8 million dollars. Wax Flower production estimated at 750 acres with income figures of $6.8 million dollars.

Protea – 300 acres
Leucadendron – 480 acres
Leucospermum – 360 acres
Banksia – 60 acres
Wax Flower – 900

Markets and Marketing
The U.S and Canada absorb 95% with 5% overseas. Wholesalers are still the primary source for our flowers. The mass-market bouquet makers, which supply the supermarkets, are starting to use more Proteaceaeous material each year in their designs and have become major players. Internet sales like 1800 flowers and Pro Flowers are a massive potential if we can supply enough flowers, current production is not sufficient.

The California Cut Flower Commission (CCFC) has been promoting California Flowers throughout the USA using targeted trade shows where growers can exhibit their flowers. The California Protea Association attends several events to promote protea and advertisers in several floral publications.

Threats and Opportunities
The biggest threat that California Protea growers face is our water crisis. Many growers have had to turn the valves off to some of their fields in order to adhere to the 30% cut

back. The economic slow down with the housing crisis and the sharp increase in gas prices have made all aspects of agriculture challenging.

The future of Protea is very still exciting in California as we have a very under developed market and the mass market supermarkets are starting to use more proteas in flower bouquets. Over the last 5 years the shift is to selling high volume to bouquet makers who are demanding more flowers to increase there programs.

Mozambique, Zambia and Zimbabwe
By Katy Percival and Clive Wakefield

Hectares under cultivation

	Moz	Zam	Zim
Anigozanthos			43
Leucadendron	2		57
Leucospermum	14	32	96
Telopea			10
Protea		1	7
TOTAL 2008	**16**	**33**	**213**
TOTAL 2006	**10**	**2**	**250**

Main cultivars grown
Anigozanthos: yellow, orange, red
Leucadendron: Safari Sunset
Leucospermum: Succession, Tango, L. saxosum, High Gold, Naomi, Scarlet Ribbon
Protea: Arctic Ice

Number of active producers

	Moz	Zam	Zim
Commercial	3	2	15
Medium			19
Small		2	25
TOTAL 2008	**3**	**4**	**59**

Key Markets for straight-line products
Europe: 90% - 60% direct sale, 40% auction
Far East, Middle East, USA, South Africa: 10% - 80% direct sales, 20% auction

Zimbabwe
Threats

- hyperinflationary environment

- current monetary policies
- land acquisition
- chronic power outages
- deteriorating infrastructure
- ack of horticultural product to ensure continuation of regular charterflights to Europe

Opportunities

- all hardships endured has meant growers have had to scrutinize every aspect of business – and are more professional because of it
- things can only improve – and when this does happen, we are ready to develop our industry!

Zambia

Threats

- poor handling infrastructure
- poor availability of banking facilities under the agriculture portfolio

Opportunity

- climatic and economic advantage of earlier production periods compared to other countries

Mozambique

Threats

- lack of farming inputs – fertilizers, chemicals
- high cost of inputs that are available
- high cost to get product to market

Opportunities

- climatic and economic advantage of earlier production periods compared to other countries (similar to Zambia)
- access to aid / loans for establishment / development of projects

Israel

By Y. Steinmetz and J. Ben-Jaacov

Introduction

Proteas were introduced to Israel in the early 1970's. Large-scale production however started only in the early 1990, with the introduction of 'Safari Sunset' to the country. After years of research and introduction trials, the main production is still of a single Leucadendron cultivar 'Safari Sunset'. The total area of "proteas" being produced in Israel is now about 250 hectares, composed mainly of 'Safari Sunset', few other Leucadendron cultivars, Grevillea, Leucospermum, Banksia and recently almost 5 hectares of Protea.

Leucadendron 'Safari Sunset'

The cultivation of L. 'Safari Sunset' is done mainly on volcanic soils of the Northern Highlands. Much information has been accumulated on fertilization and irrigation of this crop. The growers are equipped these days with a "blue print" instruction for the cultivation of Safari; thus, even a new grower can produce excellent quality of branches. Recently, much research has been devoted to pruning and "well plan" production of superior quality stems.

All Safari branches are shipped by boat. The shipment to Europe takes about 10 days. In general, strong, high quality branches are shipped successfully; however, from time to time branches rot in the boxes and arrive to Europe in bad shape. Research has been done recently to select proper post harvest treatments to overcome these problems.
Selling prices of safari have been stable for many years; recently however, there is a drop in selling prices. Production cost has been rising constantly and thus production profitability is decreasing. Much effort has been placed, recently on production efficiency: including the development of harvesting machine, a machine sorting branches according to the size of the "flower" head (in addition to stem length), a machine for the mechanical removal of lower leaves and an additional machine for washing the branches. There are several studies of packing house management, being done.

Additional Leucadendrons

'Petra' is a sub-clonal selection out of 'Safari Sunset'. This cultivar produces high quality braches lucking bypassing growth. In addition this cultivar require lower amount of water for proper production. 'Gold Strike' produces excellent quality of branches at the cool well-drained soils of the Northern Hills. 'Jester' produces beautiful stems—few growers insist on its production even when production is low. There are about 8 hectares of 'Inca Gold' harvested mainly between September and December. The cultivation of 'Yaeli ' –a local selection of L. salignum has been reduced the recent years.

Leucospermum

Still a minor crop (unjustified, in our opinion) in Israel, as well as worldwide. The markets in the Northern spring are oversupplied with this product, the competition is tough and the prices are low. Cultivar assortment in Israel is small and we still don't have the newly developed superior cultivars in Hawaii and elsewhere. The main cultivars being grown in Israel are: few locally selected pattersoni, 'High Gold 'and an Israeli cross patersoni X conocarpodendron named 'Patercone'. There is also some production of 'Tango', 'Vlem', 'Spider' and 'Scarlet Ribbon'.

Protea

There has been some movement in the production of plants belonging to the genus Protea. In early years we had few plantations of P. obtusifolia. However, Live spend of this species is not sufficiently long, vegetative propagation is somewhat difficult and the cultivars we selected or introduced were not sufficiently good. Recently there is an increase of planting of P. 'Pink Ice' and there are few good field of this cultivar. We aim

to develop the proficiency of cultivating 'Pink Ice' to the level we have in 'Safari Sunset'. Flowering of ‘Pink Ice’ starts in Israel in August and we are researching ways to postpone it in a month or two. We are still limited in the varieties we grow and still facing difficulties in the introduction of more and better cultivars.

Grevillea

We grow about 50 hectares of Grevilleas. Grevilleas are grown for the production of cut flowers, cut foliage as well as pot plants. The main cultivar under production is ‘Spiderman’, a selection of G .whitiana. In the last few years the assortment of cultivars has been increased. More and more Grevilleas are grown as grafted plants to overcome nematodes and other soil born problems. Much research has been done in the last few years on the development of post harvest methods.

Banksia

Most species of Banksia grow well in Israel. Until recently we had about 10 hectares of Banksias, mostly. B. ashbyii. The profitability of this crop had difficulties, and about 3 years ago the development of successful post harvest treatments made it possible to ship Banksias by boat and thus improve its profitability. However, we were informed recently that the laborious work involve in preparing for surface shipping reduces again the ability of this crop to survive in the flower market.

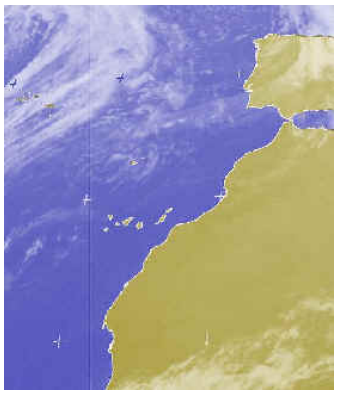
Spain – Canary Islands

By Lennart Loven

We like to thank the organization committee of this magnificent IPA meeting for the opportunity to be here, everything well done with the right proportions of adventure and professional topics. We must also give thanks some public institutions such as ICEX and PROEXCA, because without their support it would have been impossible not only to participate in this event, but also in most of our international promotional activities or technical advice and business as in this case.

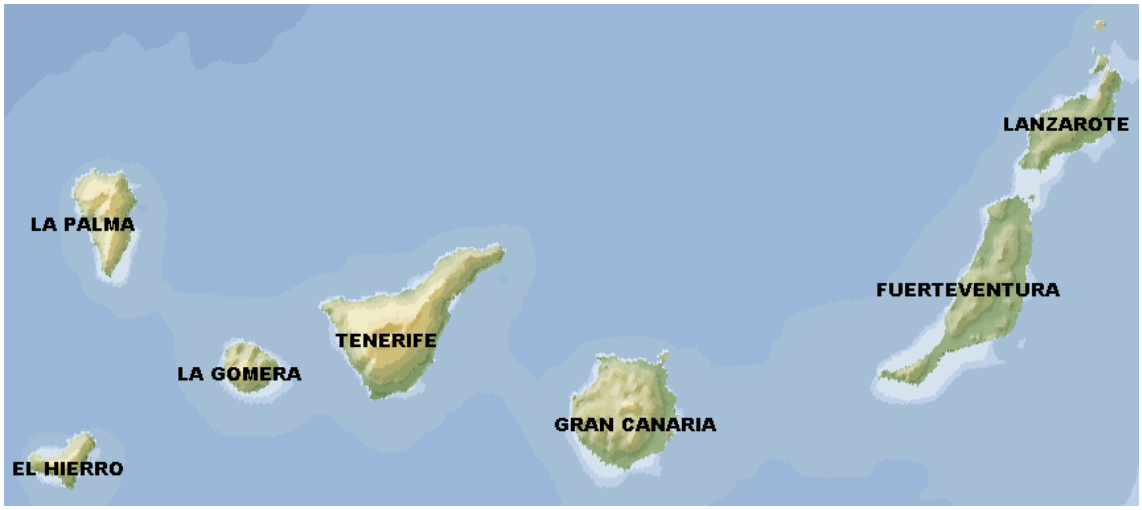
The cultivation of proteas in Spain and the Canaries

In continental Spain (Península) there are several plantations of Leucadendron distributed in areas of Huelva, Valencia and Catalonia, in total representing just over 20 ha of cultivation. Where there is truly a representation of this crop in Spain is in the Canary Islands with more than 60 ha in cultivation, spread over three islands, La Palma, Tenerife and Gran Canaria. On the island of Lanzarote there are small experimental plantations.



The Canary Islands are located in the northwest of Africa, between latitudes 27 ° 37 'and 29 ° 25' N and longitudes 13 ° 20 'and 18 ° 10' west of Greenwich. There are about 1000 kilometers from the Spanish coast and about 100 km. from the African coast. There are seven islands, from east to west

having the names Lanzarote, Fuerteventura, Gran Canaria, Tenerife, La Gomera, El Hierro and La Palma. We can see them in the following map of the archipelago.



Politically, the Canaries form an autonomous region of the Spanish state, with an area of 7,446 km2. Its origin is volcanic (highest peak, Mount Teide, on Tenerife, has a height of 3777 meters), its climate is subtropical and its population currently stands at two million permanent inhabitants. It is a unique tourist destination because of its beauty and its excellence climate. We receive about 12 million visitors per year.

As I have mentioned before, the islands that produce proteas are La Palma, Tenerife and Gran Canaria. More than 90% of the production is exported to Holland, with the remainder sold directly to Spain and local market within and between the islands. Last years campaign exported almost two million stems.

In Tenerife this crop began in 1975 at the Botanical Garden of La Orotava, in Puerto de la Cruz, through a programme of introducing those species most interesting commercially. However, it was not until 1982 when the first plantings were made in the field, and since 1985 intensified plantations in the north of the island, including coastal areas and places with an average altitude between 400 and 600 m above sea level; which led in 1989 to the selection of the most suitable species and varieties for different areas. In the coastal areas very few varieties tolerated the unfavourable soil conditions (high-conductivity, high content Na, and high temperatures), however in higher altitude areas most varieties grew and flourished perfectly; varieties like: Leucadendron discolor, Safari Sunset, Blush, Chameleon; Leucospermum Succession ll, Tango, High Gold, Veldfire, and Protea cynaroides, Magnifica, Pink Ice and Susara. In the nineties the cultivated area reached 25 has. of plantations lying between 500 and 800 m above sea level, but due to marketing problems this area has been reduced at present to an estimate of 20 ha.

On the Island of La Palma the cultivation was introduced in the late nineties, through strong support of the Cabildo (Island Council) of La Palma with good technical advice and training to farmers, and promoted the partnership through the Cooperative: Proteas of La Palma, providing facilities for packaging, export and joint marketing of flowers. The area of cultivation has grown steadily in this island, reaching at present about 30 has. The main varieties cultivated are Leucospermum Succession II, Tango, Veldfire, High Gold, Scarlet Ribbon and Patersonii; Protea cynaroides, Magnifica, Pink Ice and Susara; and Leucadendron Long Tom, Chameleon and Inca Gold.

In Gran Canaria growing Proteas began in the mid-nineties. The area of cultivation is about 10 ha. The holdings are mainly in the north of the island. The main varieties cultivated in this island are Protea cynaroides, Susara and Pink Ice; Leucospermum Pattersoni, Veldfire, Sunrise, High Gold, Succession II and Scarlet Ribbon; and Leucadendron discolor, Blush, Inca Gold , Chameleon and Tom Long.

Hans greeted us the other day with a BUENOS DIAS, saying that Spanish was one of the major languages spoken at this meeting. Maybe it is not, but we can agree that we are the loudest group, especially in the after hours.

Thank you very much for your attention.

Start planning for IPA and IPWG 2010

28th International Horticultural Congress
14th International Protea Association Conference
10th International Protea Working Group Symposium
Lisboa, Portugal, 22-27 August 2010 www.ihc2010.org

Call for abstracts
10th IPWG Protea Research Symposium
31 December 2009, Tentative deadline for abstract submission
Convener, Maria Jose Leandro, maria.leandro@florаunited.com,
and mleandro938@gmail.com

Research Funding Awarded by the IPA in 2008

K. Bezuidenhout – Fusarium Wilt of Proteaceae in Southern Africa: USD 4,000

L. Hoffman & K. Bezuidenhout - Post harvest control of *Botrytis cinerea* in selected *Leucospermum* and *Leucadendron* species: USD 2,000

Abstracts of progress reports and final reports will appear in future issues of PNI

New Cultivar Registrations

International Protea Registry
Director: Joan Sadie, joans@nda.agric.za
Web site: www.nda.agric.za/docs/Protea2000/contents2000.htm

Australian Cultivar Registration Authority
iaind@anbg.gov.au

New Books on Proteaceae

Proteaceous Ornamentals: Banksia, Leucadendron, Leucospermum, and Protea
Scripta Horticulturae No. 5, ISHS,
Sedgley, Criley, Coetzee, Littlejohn, Ben-Jaacov and Silber, 2007.

Proceedings of the Seventh International Protea Research Symposium
Melbourne, Victoria, Australia
Acta Horticulturae 716
Gerber and Leonhardt, 2006.

Protea Feature Article in a Trade Journal

Protea growers, Chile, *up-and-coming*
By Ben Gill
FloraCulture International, Sept. 2008

More Protea Web Sites of Interest

Arnelia, Proteaceae, www.arnelia.co.za
Proteaflora, www.protea.com.au (The Bookshop)
Resendiz Brothers Protea Growers, www.resendizbrothers.com
Silverhill Seeds and books, www.silverhillseeds.co.za
Timber Press, www.timberpress.com

Protea Associations Around the World; Officers and Contacts

International Protea Association (IPA)

Chair.	Rua Petty, California, USA, rua@rjtranch.com
Vice-chair	Audrey Gerber, Melbourne, Australia, audgerber@gmail.com
Web site	www.ipa-protea.org

International Protea Working Group (IPWG), a research committee of the International Society for Horticultural Science (ISHS)

Chair	Ken Leonhardt, Hawaii, USA, leonhard@hawaii.edu
Vice-chair	Audrey Gerber, Melbourne, Australia, audgerber@gmail.com
Sect	Lynn Hoffman, Stellenbosch, South Africa, ewh@sun.ac.za

South African Protea Producers and Exporters (SAPPEX)

Chair	Peter Dorrington, sappex@dfpt.co.za
Sect	ipa@dfpt.co.za
Web site	www.sappex.org.za

Hawaii Protea Growers Corporation

IPA Rep	Tony Bayaoa

California Protea Association (CPA)

Pres	Chuck Stone, cwstonejr@aol.com
Sect	Richard Nagel
IPA Rep	Ben Gill, ben@californiaproteamgmt.com
Web site	www.californiaprotea.org
Contact	proteainfo@californiaprotea.org

Growers and Exporters of Flowers and Plants from the Canary Islands (ASOCAN)

Pres/Chairman	Lennart Loven, lloven@terra.es
Manager	Antonio Lopez, antoniolopez@asocan.net
Web site	www.asocan.net

Wildflowers Australia

Pres	Alison George, galeforce@pacific.net
Sect	Russell Dawe, innobiz@vicnet.net.au
IPA Rep	Barbara Patterson, secretary@madcota.org.au

New Zealand Protea and Flora Growers Association (NZPFGA)

Pres	Gavin Jeffcoat, hunterflora@slingshot.co.nz
Sect.	Kay Garvey, terry.kay@hnpl.ne
IPA Rep	Geoff Jewell, geoff@tehoro-protea.co.nz

Zimbabwe Protea Association

Chair	Toby Micklethwait, 241218@ecoweb.co.zw
Sect	C. Price, komawara@zol.co.zw
IPA Rep	Conrad Archer, conrad@zimflower.co.zw

International Horticultural Events Taking Place

November 5 to 7, 2008, **Kenya**
Hortec, Nairobi
melvin@hpp.nl; www.hpp.nl
T: (31) 20-662-2482, F: (31) 20-675-2326

November 7 to 8, 2008, **USA**
Grower Talks Sustainability Conference, Frisco, Texas
www.ballpublishing.com/conferences

November 20 to 22, 2008, **Vietnam**
Floral Expo Vietnam
Ho Chi Minh City

T: (31) 20-662-2482, F: (31) 20-675-2326
melvin@hpp.nl; www.hpp.nl

November 27 to 30, 2008, **Turkey**
Growtech Eurasia, Antalya
info@growtecheurasia.com; www.growtecheurasia.com

December 1 to 3, 2008, **China**
IPM China, Foshan City, Guangdong Province
xiang.zhi@messe-essen.de; www.ipm-china.com
T: (49) 201-724-4727, F: (49) 201-724-4513

December 7 to 8, 2008, **Thailand**
ISHS Horticultural Economics Symposium 'Sustainability in Horticulture' and Research Training and Extension symposium
Pang Suan Kaew Hotel, Chiang Mai
www.muresk.curtin.edu.au/conference/ishsem
www.muresk.curtin.edu.au/conference/ishset

January 14 to 15, 2009, **Israel**
19th Agro Mashov Exhibition
Tel Aviv
haim@mashov.net; www.mashov.net
T: (972) 8-627-3838, F: (972) 8-623-0950

January 14 to 16, 2009, **USA**
Mid-American Horticultural Trade Show
McCormick Place, Chicago, Illinois
mail@midaml.org; www.midam.org
T: (1) 847-526-2010

January 15 to 17, 2009, **USA**
Tropical Plant Industry Exhibition (TPIE)
Ft. Lauderdale, Florida
info@tpie.org; www.tpie.org
T: (1) 407-295-7994, F: (1) 407-295-1619

January 29 to February 1, 2009, **Germany**
IPM Essen, Essen
www.ipm-messe.de
T: (49) 201-7244-0, F: (49) 201-7244-248

February 4 to 8, 2009, **Ecuador**
The Quito Orchid Expo, Itchimbia Cultural Center
zzz@uio.satnet.net; www.quitoorchidexpo2009.org
T: (5) 932-289-5331

February 6 to 16, 2009, **Philippines**
Flora Filipina Expo
Quezon City Hall Grounds, Manila
www.philippineorchidsocietyph.org
T: (632) 929-4425, (632) 426-7581

February 10 to 12, 2009, **Ukraine**
Agriculture and Horticulture Exhibition, Kiev
info@bto-exhibitions.nl; www.bto-exhibitions.nl
T: (31) 55-534-1140, (31) 55-534-0168

February 17 to 19, 2009, **France**
Salon du Vegetal, Angers
salon@bhr-vegetal.com; www.salonduvegetal.com
T: (33) 241-791-417, F: (33) 241-452-905

March 3 to 4, 2009, **Belgium**
Floral Spring Fair, Flanders Expo, Gent.
T: (32) 9-241-5091, F: (32) 9-241-5095
info@florall.b3e; www.floral.be

March 3 to 5, 2009, **United Arab Emirates**
IPM Dubai, Airport Expo Dubai
www.ipm-dubai.net

March 7 to 16, 2009, **Taiwan**
Taiwan International Orchid Show
www.tios.com.tw

March 10 to 12, 2009, **USA**
World Floral Expo, Miami, Florida
www.hpp.nl

March 19 to May 21, 2009, **The Netherlands**
Keukenhof Holland, Lisse
T: (31) 252-465-555, F: (31) 252-465-565
info@keukenhof.nl
www.keukenhof.nl

March 20 to 22, 2009, **Slovenia**
13th Flora Fair, Celje
T: (386) 3-54-33-000; F: (386) 3-54-19-164
info@ce-sejem.si
www.hpp.nl

March 25 to 27, 2009, **Ethiopia**
Hortiflora Ethiopia, Addis Ababa
melvin@hpp.nl; www.hpp.nl
T: (31) 20-662-2482, F: (31) 20-675-2326

March 27 to 30, **Portugal**
ExpoJardim, Batalha
info@exposalao.pt; www.exposalao.pt
T: (351) 244-769-480, F: (351) 244-767-489

March 28 to April 3, 2009, **USA**
California Pack Trials, California
www.ngb.org

April 1 to 4, 2009, **China**
The 11th Hortiflorexpo China, Intex Shanghai
intexcl@sh163.net; www.hortiflorexpo.com
T: (86) 21-6295-6677; F: (86) 21-6278-0038

April 1 to 3, 2009, **USA**
Wholesale Florist and Florist Supplier Assn. Ann. Convention & Expo
Hyatt Regency, Orlando, Florida
www.wffsa.lorg

April 1 to 3, 2009, **Ukraine**
4th International Exhibition for Flower Business, Horticulture, Nurseries, Landscape design & Floristry, Kiev
info@bto-exhibitions.nl; www.bto-exhibitions.nl

April 23 to May 10, 2009, **Korea**
International Horticulture
Goyang, Korea
www.flower.or.kr

April 27 to May 1, 2009, **The Netherlands**
European Pack Trials
www.fleuroselect.com

May 19 to 23, 2009, **United Kingdom**
Royal Horticulture Society, Chelsea Flower Show
www.rhs.org.uk

June 9 to 12, 2009, **The Netherlands**
Flower Trials of pot plants and bedding plants
Aalsmeer and Westland Region
www.flowertrials.nl

June 14 to 19, 2009, **Canada**
GreenSys 2009, Quebec City
International Symposium on High Technology for Greenhouse Systems
T: (1) 418-658-6755, F: (1) 418-658-8850
info@greensys2009.com, www.greensys2009.com

July 11 to 14, 2009, **USA**
Ohio Florist Association Short Course, Columbus, Ohio
T: (1) 614-487-1216, F: (1) 614-487-1216
ofa@ofa.org, www.ofa.org

August 26 to 29, 2009, **The Netherlands**
Plantarium, Boskoop
T: (31) 172-235-400, F: (31) 172-235-450
info@plantarium.nl, www.plantarium.nl

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www.ishs.org

The **ISHS**, dating from 1864 and formally constituted in 1959, has more than 7000 members representing some 150 countries. It is the world's leading independent organization of horticultural scientists and publishes Acta Horticulturae, Chronica Horticulturae, and Scripta Horticulturae.

College of Tropical Agriculture and Human Resources

UNIVERSITY OF HAWAI'I AT MĀNOA