INDEPENDENT
PLANT BREEDER’S
CONFERENCE

NOVEMBER 17–19, 2006

Orlando, Florida, USA

www.conference.ifas.ufl.edu/IPBC
On behalf of the University of Florida Environmental Horticulture Department, I am honored to welcome you to the Second Annual Independent Plant Breeder’s Conference in Orlando, Florida. After an excellent conference last year in Ft. Lauderdale, we hope that you will find this year’s event to be even more informative. This year, we have once again been able to bring together independent plant breeders together with some of the best breeding companies and plant introduction companies in the world.

The main goal of this conference has always been to help independent breeders bring their new varieties successfully to market as a means to continue to provide new plants to the consumer marketplace. We believe the forum offered in this conference provides a special mix of technical presentations, discussion and personal interactions that will promote better communication between the independent breeders who introduce new varieties and companies that market these types of plants.

The Independent Plant Breeder’s Conference would not be possible without the generous support of our industry sponsors. We are thrilled that these industry leaders share our vision and interest in providing great new plants for the public and we offer all of them our most sincere thanks – we are proud to have you as our partners.

We wish you all a great conference and many successes in the future as a result of having attended this conference.

Sincerely,

David G. Clark
Co-Organizer

Terril A. Nell
Co-Organizer
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Agenda

Friday, November 17, 2006

4:00pm – 7:00pm  Registration Open       [Executive Conference Room]
4:00pm – 7:00pm  Sponsors set-up Displays       [Marco & Amelia Rooms]

Saturday, November 18, 2006

7:30am – 5:00pm  Registration Open       [Executive Conference Room]
7:30am – 8:30am  Morning Refreshments       [Marco & Amelia Rooms]
7:30am – 5:00pm  Independent Plant Breeders may set-up photos       [Marco & Amelia Rooms]

GENERAL SESSION
   [Sanibel Room]

8:45am – 9:00am   Welcome

TECHNOLOGY: USING IT TO MAKE YOU, NOT BREAK YOU

9:00am – 9:40am  Engineering New Cultivars of Horticultural Plants for the 21st Century
   – Dr. Richard Craig, Penn State University

9:40am – 10:20am  A Year of Experience in Working with New Crop Introductions
   – Dr. Rick Schoellhorn, Proven Winners

10:20am – 10:40am  Break, light refreshments provided       [Marco & Amelia Rooms]

10:40am – 11:20am  Requirements and Criteria in Bedding Plants of the Professional
   Horticulture Industry – Ms. Heike Gronemann, Syngenta / S&G Flowers

11:20am – 12:00pm  A View of Technology from the Catbird's Seat – Dr. Dave Clark,
   University of Florida, Environmental Horticulture Department

12:00pm – 1:30pm  Lunch Provided       [Marco & Amelia Rooms]

SUCCESS: COME HEAR HOW THE PROS DO IT

1:30pm – 1:40pm  Introduction

1:40pm – 2:40pm  Keynote Address: From Breeder to Market...the Future for Breeders,
   Growers and Retailers in the Gardening/Horticultural Industry
   – Mr. Keith Kirsten, Keith Kirsten Horticulture International (Pty) Ltd
Saturday, November 18, 2006 (continued)

2:40pm – 3:20pm  **From Discovery to Market – What Should an Independent Breeder Realistically Expect?**  – *Mr. Ray French*, Floragem

3:20pm – 3:40pm  Break, light refreshments provided  [Marco & Amelia Rooms]

3:40pm – 4:30pm  **Meet Your Sponsors**

4:30pm – 5:00pm  Break, free time

5:00pm – 7:00pm  **Breeder Showcase & Reception**  [Marco & Amelia Rooms]

Sunday, November 19, 2006

7:30am – 8:15am  Registration Open  [Executive Conference Room]

7:30am – 8:15am  Morning Refreshments  [Marco & Amelia Rooms]

**GENERAL SESSION**

[Sanibel Room]

8:15am – 8:30am  **Introduction**

**THE BUSINESS OF BEAUTY: HOW TO MAKE ALL YOUR CROPS ’THORNLESS’**

8:30am – 9:10am  **Beyond Beginners Luck**  – *Ms. Cassy Bright*

9:10am – 9:50am  **Navigating the Plant Patenting Process**  – *Dr. C. Anne Whealy*, Proprietary Rights International

9:50am – 10:10am  Break

10:10am – 11:10am  Panel Discussion and Review

Panelists: Ms. Cassy Bright, Dr. Dave Clark, Dr. Richard Craig, Mr. Ray French, Ms. Heike Gronemann, Mr. Keith Kirsten, Dr. Rick Schoellhorn, Dr. C. Anne Whealy

11:10am – 11:30am  Conference Wrap up
Speaker Handouts

Listed in order of presentation.
SECRET FOR THE DEVELOPMENT OF SUCCESSFUL CULTIVARS

Independent Plant Breeder’s Conference - 2006
Richard Craig

INTRODUCTION: FROM GARDEN PEAS TO THE DOUBLE HELIX

SECRETS:

VISION OF AESTHETIC AND PRODUCTION TRAITS

VARIABILITY- FINDING THE GENES

TECHNOLOGY-ASSEMBLING THE GENES

SELECTION PRESSURE-DESIGNING THE SYSTEM

EVALUATION-DOCUMENTING SUCCESS

COMMERCIALIZATION

NAMING and INTELLECTUAL PROPERTY PROTECTION
CLEAN STOCK and PROPAGATION
MARKETING and DISTRIBUTION

THE STORY OF REGAL PELARGONIUMS

IMPROVED PRODUCTION SYSTEM
IMPROVED FLORAL LONGEVITY
DEVELOPMENT OF GARDEN PERFORMANCE
A Year of Experience in New Crop Introductions
Five key points you really need to know to get your hybrids to market

<table>
<thead>
<tr>
<th>Time</th>
<th>Process</th>
<th>Costs</th>
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<tbody>
<tr>
<td>3-7 yrs</td>
<td>Breeder finds or develops a new crop</td>
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<td>1-3 yrs</td>
<td>Company trials the crop</td>
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<td>1-2 yrs</td>
<td>Tissue Culture</td>
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<td>1-2 yrs</td>
<td>Thermotherapy virus clean</td>
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<td>3-7 yrs</td>
<td>Decision to release – Patent Costs</td>
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<td>Stock build up</td>
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<td>1-2 yrs</td>
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<td>1-2 yrs</td>
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<td>1 yr</td>
<td>3rd Yr Marketing</td>
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<tr>
<td>1 yr</td>
<td>Competitors emerge</td>
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<tr>
<td>3-5 yrs</td>
<td>Where are you now?</td>
<td>??</td>
</tr>
<tr>
<td>5-10 yrs</td>
<td>Totals</td>
<td>$6,000-$20,000</td>
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Point #1: Hygiene pays
What you don’t know about tissue culture, plant viruses, and bacteria could cost you years of waiting. An infected plant takes at least 2 years longer to get to market than a clean plant. 2 years of additional costs and labor. How can you protect yourself? Learn virus free plant management: [http://ohioline.osu.edu/hyg-fact/3000/3065.html](http://ohioline.osu.edu/hyg-fact/3000/3065.html)

Point #2: What are you competing against?
Market Share: Are you providing a new Petunia or a new crop? If there are already a hundred plants of the same type as yours on the market, you can expect it to be 100 times harder to make the same profit.

Other Breeders: How many people are doing what you do? For commodity crops; big breeding companies may have teams working on the same crop. What are your chances of success with fewer resources? What’s your edge? How is your crop different from all the others? If you don’t know, it takes longer for the company you work with to trial and prove any improvements.

How can you learn more? On patents: [http://www.rai.worldwide.com](http://www.rai.worldwide.com)
On similar plants being patented: [http://www.uspto.gov/](http://www.uspto.gov/)

Point #3: Just how “Out There” are you?
What is your personality like? If you hate this stuff…hire a breeder’s agent to work with marketing your plants. Find someone who can make it easy for you to understand the entire process and let you focus on the part you like…the plants.

What are you breeding? Wild is good, new and different is easier to find a market for; but if the industry can’t grow it, they won’t buy it. Look what is popular: Petunia, Pelargonium, and Coleus… Is what you are breeding this easy to produce? It doesn’t have to be, but easier crops move through the systems faster.

Where does your plant do well? Is it tropical? Does it require a freeze to flower? Will it only grow indoors? How long does it take to flower? There is an outlet for all of these plants, but the more you know the better your search for a market will be.

Point #4: Money and Time
What it costs to bring your plant to market? Even on the cheapest scenario it takes at least $6,000.00 for a company to release your plant. For most plants working through an average company system, it is closer to $10,000, and in some cases might go as high as $20,000. That is what the company spends; most of this will be invisible to you, the breeder; unless you are cost sharing in some way with the company releasing your plant.

How long it takes to bring your plant to market? In today’s world of high tech horticulture, it is no longer enough to just take cuttings and grow. Most companies have 1-2 years trialing, 1-2 years virus cleaning and stock production, 1 year limited release, then full release and then a year until you may get your 1st royalty check. So plan on about 6 years, depending on who is paying for the costs.

Point #5: It is NOT a get rich quick scheme.
The old feeling was that a plant finder could get rich quick, hey, anything is possible, but the average independent plant breeder with a few successes in likely getting enough money to pay his greenhouse heating bills, maybe subsidizing some travel or vacation. It can be more, but you increase your chances of making more if you pay attention to hygiene in your breeding programs, understanding what is on the market, understanding your own strengths & weaknesses, and having a realistic outlook on the time and money involved in the process.

Most of all, my advice is to get out and meet other plant breeders, hear their stories, learn from their experiences and when you make a choice on what company you want to work with, make that choice based on your ability to trust them to do the best they can for you and your hybrids. Be realistic, be informed, and be patient.

Dr. Rick Schoellhorn, Director of New Products
7421 NW 176th Street, Alachua, Florida 32615
Phone: (386) 462-5826; FAX: (386) 462-5826; Email: rick@provenwinners.com
Plant Breeders Conference 2006
Requirements and criteria in bedding plants of the professional horticultural industry
by Heike Gronemann

Requirements and criteria in bedding plants of the professional horticultural industry

- Meaningful criteria will lead to a unique product that will sell and is producible.
- Identification of requirements on products help defining the criteria.
- Analyses for of potential markets and customers help defining requirements and criteria.

Requirements and criteria in bedding plants of the professional horticultural industry

Criteria are different:

- Per product
- Per species & sub species

- Unique per product or product series

Requirements and criteria in bedding plants of the professional horticultural industry

Criteria are worked out and agreed upon by:

- Product managers of the potential markets
- Breeders

- Identify production method and involve responsible department

- Unique per product or product series

Requirements and criteria in bedding plants of the professional horticultural industry

Criteria are supporting business flow:

- Creating deadlines for business flows
- Defining work groups
- Allowing cost estimations
- Planning business

Criteria are key to success
A View of Technology from the Catbird’s Seat:  How Independent Breeders Can Take Advantage of New Technologies in Plant Breeding and Genetics

David Clark  
University of Florida  
Environmental Horticulture Department

The origin of plant breeding traces back about 10,000 years to the domestication of plants, and their adaptations for use in modern day agriculture. Plant breeding started in regions of the world where plants suitable for domestication grew locally in the wild, then subsequently grew in practice as man began exploring the far reaches of this planet around 500 years ago and introducing new plants into new environments. During this process, naturally occurring variants were selected that were higher yielding, and early farmers collected seeds or vegetative organs for growing next season’s crop. Since that time, both conscious and unconscious selection by farmers and plant enthusiasts has resulted in land races of plants that have been locally adapted to the conditions imposed by man and the physical environment. Although progress in crop improvement with this approach to breeding has been shown to be steady over several years, it is now known to be very slow compared to a more scientific approach to plant breeding.

With the rediscovery of Mendel’s work just over a century ago came a solid scientific foundation for modern plant breeding. Concepts such as interspecific hybridizations, male sterility, incompatibility, breeding for resistance to pathogens and insects, mutation breeding, and production of hybrid varieties were all developed based on new knowledge about the nature of heredity and the possibility to predictably create novel genetic combinations of traits by crossing. With Watson & Crick’s discovery of the structure of the DNA molecule in 1953, the fields of genetics, physics, biochemistry and physiology were subsequently merged to spark the beginnings of the fields of molecular biology and biotechnology. Since that time, the development of concepts and techniques in plant tissue and cell culture, DNA cloning, electronics and robotics have all proven vital for providing new tools for plant breeders to use to make advances in the crops of interest. With the dawn of the ‘information age’ now past, we find ourselves with a tremendous amount of valuable information about all of these technologies that is widely available on a digital screen at the click of a button. ‘How much of all this information is actually useful?’ is certainly a question that is up for debate, but there is no doubt that the people making the biggest advances with introducing new varieties are those who have a simple base knowledge in fundamental plant breeding and genetics with a keen eye open for new tools that apply to their particular crops of interest.

Many new technologies are out there in the marketplace – how do you discern which ones are most useful for helping you make advances in your crop? How do you determine when the cost of a new technology is worth your investment? How do you determine when you have an idea for a technology that is ‘an idea before its time’? Knowing the answers to these questions will help you formulate better decisions and make faster gains in your breeding program.
From Breeder to Market...the Future for Breeders, Growers and Retailers in the Gardening/Horticultural Industry
Keith Kirsten, Keith Kirsten Horticulture International (Pty) Ltd

South Africa – Since the early 17th century, the plants of the Cape of Good Hope have stimulated the European imagination. At first, only a trickle arrived, mainly brought home by explorers and sailors who paused there on their way to the East, and the Cape soon became an unofficial place for vital fresh water supplies.

The first European to record plants at the Cape was the Dutch doctor and missionary, Justus Heurnius (1587-1653). He prepared sketches and descriptions of a few plants found in the foothills of Table Mountain. These included *Stapelia variegata*, the carrion flower, and *Kniphofia uvaria*, the red hot poker.

Garden Design & Evolution – The Cape settlers followed the formal Dutch style of gardening which had evolved from the French, thus surrounding their properties with clipped hedges and dividing their gardens into formal beds. These gardens tended to be simple, while the houses and furnishings were on a grander scale. Topiary and parterres, however, were not as popular as in Europe. Even during Victorian times when English gardens were more elaborate, the Cape gardens were much less complicated, with beds of *Agapanthus* or hydrangeas growing underneath the oaks and pines. Colour was provided by flowering plants from all over the world. Circular and rectangular shapes were cut into lawns and filled with exotic perennials like cannas, dahlias, irises, or annuals such as salvias, petunias, penstemons or coleus, but elaborate garden design was rarely seen. In 1913 the National Botanic Garden at Kirstenbosch was established. This garden, situated on the eastern slopes of Table Mountain, endeavours to grow plants from all over South Africa and is rightly recognized as one of the most beautiful botanic gardens in the world. Some 4700 species of plants can be seen growing in its 500 hectares, but only 36 hectares have been cultivated.

Climatic Regions – The southernmost tip of Africa has a wide range of climates with vegetation ranging from lush subtropical areas with generally good rainfall, to Mediterranean-type climates, savanna or semi-desert. Roughly, the country can be divided into four climatic zones: the winter rainfall area of the southern Cape, the subtropical east coast and adjacent interior, the Highveld comprising most of the Transvaal and Orange Free State with hot summers, cold winters and irregular rainfall, and the more arid regions in the west. The winter-rainfall area of the southern and southwestern Cape is the home of South Africa’s *fynbos* (from the Afrikaans word for fine-leaved bushes). It describes the narrow-leaved plants which characterize much of the vegetation. This region is now recognized as supporting one of the most diverse and distinctive floras in the...
world, comprising over 8500 species of flowering plants. This makes it one of the world's richest florastic areas with 1300 species per 10,000km²/6214 miles² compared with about 400 species for its nearest rivals in the South American rainforest.

**Fit 4 million years into your next trip** - The amazing story of human origins is encapsulated in the fossil record of the Cradle of Humankind, situated outside Johannesburg, South Africa - a story of adventure, survival and the relentless drive of the human spirit. It is therefore no wonder that the Cradle of Humankind was declared a World Heritage Site in December, 1999. The world famous Sterkfontein caves boast a hominid exhibition and a fossil preparation laboratory.

**RETAIL, HORTICULTURAL & MARKETING BACKGROUND**

Our holding company is Keith Kirsten Horticulture International (KKHI) - an international plant breeding and marketing organization specializing in the identification, development, trialing, licensing, production and marketing of new and exciting plant varieties. KKHI is also the agent / head-licensee for Proven Winners (PWSA) in South Africa per agreement with Proven Winners Europe (PWEU) and at the same time represents other organizations such as Anthony Tesselaar International (ATTI), David Austin Roses and Swane’s Nurseries amongst others. We take indigenous and exotic plants from South Africa and introduce them abroad through the Proven Winners network and others and vice versa.

On behalf of our breeders, we provide a royalty administration service and assist with Plant Breeder's Rights and Trademark applications and renewals. In addition to the South African market, we promote our breeder's plants internationally, license and facilitate the export of plants and administer the export payments and royalties. We find various creative ways to bring plants to growers, retailers and the public's attention. You could call us modern-day plant hunters. Take for instance the exciting ‘Burgundy Iceberg Rose’ which KKHI picked up in Australia and released into the South African gardening scene in 2005; as well as the recently launched Agapanthus 'Double Diamond' and Agapanthus 'Amethyst' - both bred in South Africa.

A person who had a big influence on my life is Anthony Tesselaar in that what he has perfected in terms of leverage and the marketing system which I will be elaborating more in my presentation. This concept I've integrated well with even Proven Winners and their concept of PW Destinations as successfully marketed in the United States in particular and which we've just launched in South Africa. I will also be discussing aspects of the Bio-diversity bill especially in the UPOV countries.

**PROVEN WINNERS**

"A better garden starts with a better plant." This is the philosophy behind the Proven Winners network. Gardening has changed… it used to be that a garden was a piece of ground and gardeners were plant experts. These days, gardens also grow on porches, decks, patios, balconies and even in water and on rooftops. Gardeners are busy people who enjoy plants and nature but don't always have time to pamper them. Proven Winners was first started in Europe where a group of wholesale growers and breeders got together and decided to start a network. This network would serve as a forum where growers can share information on growing, breeders could stay in contact with growers to know what the market needs, but most of all to make sure that these growers grow only the latest and best in disease free, quality plants. The idea of only supplying the best to the public quickly spread over to America and Proven Winners has recently been established in Australia and South Africa. The South African growers are licensed to grow the best quality
disease free plants of trialed and tested varieties - guaranteed to perform in any garden. Only the most colorful, versatile disease-tolerant and easiest to grow varieties earn the Proven Winners label. And because Proven Winners plants are so healthy and vigorous, they provide a full season of beauty and will continue in seasons to come.

- **International environmental / gardening trends** and the way citizens of the world (particularly in the 1st world countries with a tradition of environmental integrity, upliftment and beautification) purchase plants. These international trends sincerely will be affecting what plants we look for and how we market them in each country. Whilst different countries have different trends, there is a tendency for many of these trends to be similar throughout the world. As people gravitate to larger cities, smaller living units; gated-secure environments and new lifestyles evolves with an ever increasing focus on leisure and fashion activities.

- **Marketing**
  The leverage marketing system is created through the demand and desires of the creative publicity obtained in various ways:
  - Quality Plants;
  - Innovative Plants;
  - In-store destinations;
  - Point-of-sale;
  - Training personnel (grower / retail);
  - Trade shows (public/retail and industry);
  - Grower education;
  - Strength of brands (brands & branding);

- **Media**
  - Television;
  - Gardening publications;
  - Lifestyle & Fashion publications;
  - Garden club / retail newsletters;
  - Media launches;
  - Creative & innovative partnerships;
  - Gardening books;
  - Website;
  - Lectures;
  - Publication editorial & advertorial;
  - Labels and Point-of-sale;
  - Garden Competitions;
  - Grower catalogues;
  - Gardening Calendars;
  - Combinations & solutions.
• **Statistics**
  
  o Various important & relevant statistics
  
  o The market according to John Stanley (International consultant)
    
    - Spoodles (0-5 yr olds) - This market is growing rapidly as can be seen by the amount of baby shops opening around the world;
    
    - Pester Power (5-15 yr olds) - These guys have the biggest influence on where the Jones generation does their shopping. You have to be kid friendly these days;
    
    - Generation Y (15-25 yr olds) - It was released this week that they are the biggest influencers on spending in the world now. They have their own money and they influence their parents.
    
    - Generation X or IKEA babies (25-35 yr olds) - Will spend 28% on home luxuries than the baby Boomers over the next 5 years;
    
    - Jones Generation (35-50 yr olds) - Want new but do not know what is new and therefore we need to tell them;
    
    - Baby Boomers (50-65 yr olds) - Where the gardeners and now the Do It For Me brigade hence the landscape gardener boom around the world;
    
    - Greying tigers (65 plus) - Buy on price and do not want the world to change;

In most western countries you work on the following market:

The above does not include children. In Japan for example, the reverse is true 6 million Japanese retire next year alone.
NAVIGATING THE PLANT PATENTING PROCESS
C. ANNE WHEALY, Ph.D.
Sunday, November 19, 2006

★ Types of Protection Available
  Contract Law
  Trademarks
  Utility Patents
  Plant Patents

★ The Process of Development
  Product Development Time Line
  Patent Time Clock
  U.S. Patent Law 102B
  Trialing Agreements
  Return on Your Investment

★ The Patent Application Process
  Patentability
  Patent Search
  The Applicant or Inventor
  Assignment of the Invention
  Parts of the Application
  Filing the Application
  Examination & Prosecution of the Application
  Issuance & Granting of the Patent
  Approximate Costs
★ Patent Rights
   Patent Term
   The Right to Exclude
   License Agreements
   Royalties & Enforcement

★ Avoiding Potential Problems
   When to File
   Proper Labeling & Notice of Protection
   Infringement: Consequences & Remedies

★ Plant Breeders Equity Act
   Grace Period
   Scope of Protection
   Indistinguishable Varieties
   Essentially-Derived Varieties

PROPRIETARY RIGHTS INTERNATIONAL
P.O. BOX 220, TOLAR, TEXAS USA 76476
Floor Plan of Orlando Airport Marriott