

PROGRAM
47th ANNUAL CONFERENCE
INTERNATIONAL DWARF FRUIT TREE ASSOCIATION
MARCH 1-4, 2004, BOLZANO, SOUTH TYROL, ITALY

Monday, March 1, 2004

8:00 All day orchard, research station and warehouse tour.

Tuesday, March 2, 2004 (8:20 a.m. to noon)

Ken Hall, IDFTA President, Moderator

8:15 **Welcome to the South Tyrolean Fruit Industry**, Matthias Josef Gamper, Chairman of the Organization of South Tyrolean Fruit Growing Cooperatives

8:20 **Opening Remarks**, Ken Hall, IDFTA President

8:25 **Program Announcements**, Dr. Bruce Barritt, IDFTA Education Director

8:30 **Serious Economic Crises in the South Tyrolean Apple Industry Lead to Progressive Changes in Planting Systems and Varieties**

Dr. Hermann Oberhofer, Lana, Italy, and Dr. Walther Waldner, Senior Extension Horticulturist, South Tyrolean Advisory Service for Fruit- and Wine-growing, Lana, Italy

Part 1: The Introduction of High Density Plantations in the South Tyrolean Apple Growing Industry (H. Oberhofer)

At the end of the 1960s the South Tyrolean apple industry suddenly fell into an economic crisis. Due to the overproduction of apples in Europe, fruit prices on the grower level were for years far below production costs. The economic situation in the apple growing area was particularly dramatic because of the obsolete planting system. With the radical change of the rootstock, planting density, pruning technique and also with the help of some other favorable circumstances, the apple industry finally managed to become competitive and successful.

Part 2: Crises in the Global Apple Market Influence Variety Assortment, Planting Systems and Tree Training in the South Tyrol (W. Waldner)

Various crises in the worldwide apple market have significantly influenced the variety assortment and affected the apple orchard renewal rate in the South Tyrol. Also discussed will be the effect of economic circumstances on the number of trees/ha and tree training.

APPLIED APPLE TREE PHYSIOLOGY

9:15 **ROBERT F. CARLSON DISTINGUISHED LECTURE**

Principles of Apple Tree Physiology—Tools for Tree Management

Professor Luca Corelli, University of Bologna, Italy

An overview will be presented of the physiological principles underlying the choice of orchard design, pruning and training strategy; crop load management and its relationships to nutrition and water management; fruit growth monitoring and real-time forecasting fruit size at harvest. Understanding the response of trees and fruit to sunlight and the response of trees and fruit to pruning and limb positioning is critical for successful orchard management to achieve high yields of high fruit quality.

10:00 Break

10:20 **Characteristics of the Ideal Nursery Tree and Its Advantages in the Orchard**

Harald Weis, Extension Horticulturist, South Tyrolean Advisory Service for Fruit- and Wine-growing, Kaltern, Italy

The ideal nursery tree demands little training work by the grower and rapidly reaches the production phase. The young tree must be free of virus and fungal diseases as well as mechanical damage. The nursery tree must have all the characteristic features of the variety and it must be stable. The latter aspect is especially important in these fast-moving times when varieties and strains are constantly changing.

10:45 **Apple Fruit Thinning Alternatives in Northern Italy**

Dr. Alberto Dorigoni, Researcher, Research Station, San Michele, Italy

The standard thinning practice in Trentino has been refined considerably in the last decade. Trial results of traditional and new chemical thinning in northern Italy of the main apple cultivars will be presented. The role of the environment on thinning response will be stressed. Attention will be focused on 6-benzyladenine, a relatively new thinner for Europe, and its selectivity regarding bloom intensity and the flower quality (king/laterals). Data about fruit drop evolution after thinning and ethylene in fruitlets will also be discussed.

11:10 **Achieving a Balance of Growth and Cropping—Practical Considerations of How to Obtain a Calm Tree**

Josef Österreicher, Extension Horticulturist, South Tyrolean Advisory Service for Fruit- and Wine-growing, Lana, Italy

Optimal nursery trees are the basic requirement to achieve full production and calm apple trees within a short period. During the “build-up stage” we try to prune as little as possible in order to create tree volume for the future production while avoiding undesirable growth

stimulation. Only branches which are too vigorous, too upright or overlapping will be removed. In the case of excessive tree vigor, it is necessary to tie down useful but steep side branches. In order to achieve regularly bearing trees, hand and chemical thinning is necessary from the second leaf onward.

11:35 **The Best Pruning Methods and Times to Regulate Tree Growth and Enhance Fruit Quality**

Josef Vigl, Physiologist and Horticulturist, Research Center for Agriculture and Forestry Laimburg, Ora, Italy

The results of 3 years of pruning trials on the cultivars Granny Smith and Fuji are shown and general conclusions are made. The main objective in the trial on Granny Smith was to explore the best pruning periods in the year to correct the excessive vigor on the top of the trees, while the influence on fruit quality due to sun exposure of different pruning methods applied in winter was investigated with Fuji.

12:00 Lunch

Tuesday, March 2, 2004 (1:30 to 5:00 p.m.)

Bennett Saunders, IDFTA Vice President, Moderator

1:30 **Irrigation Management**

Martin Thalheimer, Research Center for Agriculture and Forestry Laimburg, Ora, Italy

In contrast to other orchard management practices, irrigation is still being practiced more often according to growers' feelings rather than on the basis of objective parameters and precise strategies. Proper irrigation management not only leads to savings of precious resources such as water, energy and soil nutrients, but also constitutes a valuable tool for controlling tree vigor and optimizing fruit quality. This requires, however, a close monitoring of the water status of the orchard, an efficient irrigation system and appropriate technical skills of the grower.

1:55 **Guidelines for Apple Nutrition in the South Tyrol**

Dr. Wolfgang Drahorad, Extension Horticulturist, South Tyrolean Advisory Service for Fruit- and Wine-growing, Terlan, Italy

Soil-, leaf- and fruit analyses are of basic importance for guiding apple nutrition. Other interesting points are the needs and uptake of nutrients of fruit trees, considering yields, age of trees, planting density, soil type and management, irrigation, etc. The aim is to fertilize the orchards close to their nutritional needs, also with leaf fertilizer, to achieve good crops with high internal and external quality.

APPLE VARIETY TRENDS

2:20 **Factors to Consider in Apple Variety Commercialization**

Michael S. Weber, Fruit & Marketing, webfruit Ltd., Langenargen, Germany

In today's commercialization of apple varieties an increasing gap can be observed between trading of standard varieties and premium varieties. Also, new innovative varieties are evolving on the market. Questions to be answered: How innovative must a new product be to be regarded as successful? What role will communications play in the future? How and why do decision makers in the apple business act as they do? What role will quality play and what can we learn from improvements during the supply chain process? Factors to consider for strategic planning when choosing an apple variety will be highlighted.

2:45 **The Emergence of European Organizations for Acquisition and Testing of New Apple Varieties: SK-Südtirol as an Example**

Kurt Werth, Executive Director, Variety Innovation Consortium South Tyrol (SK Südtirol), South Tyrol, Italy

Around the globe there are about 60 apple breeding and evaluation programs. Since 2000 protection (Plant Breeders' Rights) through the Community Plant Variety Office (CPVO) has been applied for or granted for more than 100 new apple varieties. Worldwide two large nursery alliances (INN and AIGN) and many smaller alliances between breeding institutes and nursery groups have been formed. The South Tyrolean fruit industry has great interest in being involved in the development and introduction of new varieties. For this VOG and VIP, the two large producer organizations, have formed the SK Südtirol (Variety Innovation Consortium South Tyrol). The consortium has as its goal meeting the changing market requirements by developing a coordinated variety innovation strategy. For this SK Südtirol works closely with Research Station Laimburg and the extension service in making decisions for the whole apple industry. Other fruit growing areas in Europe are following the developments in South Tyrol.

3:10 Break

3:30 **Independent Evaluation of New Apple and Pear Varieties in Australia Including Club Varieties**

Garry Langford, National Coordinator, Australian Pome Fruit Improvement Program Ltd., Australia

With the rapid change to managed apple and pear varieties there is a clear need for growers to have access to independent performance information about new varieties in their area. This information is also necessary for new variety owners and managers, as they want to ensure that the variety is grown in areas where it performs to its specification. To facilitate this in Australia, the Australian Apple and Pear Growers Association established the Australian Pome Fruit Improvement Program Ltd. (APFIP) in 1997 to set up amongst other things a secure, efficient and independent regional evaluation network. APFIP now has 10 evaluation sites operating in commercial orchards in 8 separate regions of Australia.

4:05 **The Top Five New Apple Cultivars Recommended for Northern Europe**

Henk Kemp, Applied Plant Research (PPO), The Netherlands

A brief description of agricultural and horticultural research in The Netherlands will be presented, including the position of (applied) fruit research (PPO sector fruit). Pome fruit cultivar evaluation will be described. Selection criteria from the point of view of consumers and growers will be reported. The top five apple cultivars suitable for mid- and northwestern Europe will be given.

- 4:35 **Experience with Fuji, Pink Lady, Sundowner and Other New Varieties in Warm Climate Conditions in South Tyrol, Italy**
Reinhold Stainer, Research Center for Agriculture and Forestry Laimburg, Ora, Italy
The climatic factors and their influence on adaptation and fruit quality of these varieties and other promising varieties will be discussed.
- 5:00 Adjourn
- 6:00 Buses depart from hotel for the Awards Banquet
- 7:00 IDFTA Awards Banquet, Raiffersen Sall (Community Center), Eppan
Master of Ceremonies, Kent Waliser
Dinner featuring South Tyrolean specialties (soup, salad, beef and turkey, vegetables, dessert and wine)
Entertainment by Schupplattler aus Girlan (Tyrolean dance) and Die fidelen Etschtaler (Tyrolean music)

Wednesday, March 3, 2004 (8:30 a.m. to noon)

Neal Manly, IDFTA Board Member, Moderator

- 8:30 **New Apple Varieties Diwa and Mairac from Switzerland**
Dr. Markus Kellerhals, Dr. Ernst Höhn, Dr. Lukas Bertschinger, Agroscope FAW Wädenswil, Switzerland, and Charly Rapillard, Agroscope RAC Changins, Switzerland
Diwa and Mairac are two new Swiss apple varieties. Diwa is a bright red apple originating from a cross of (Idared x Maigold) x Elstar made at the Federal Research Station Wädenswil (Agroscope FAW Wädenswil). It is slightly sweet and crisp. Mairac originates from a cross of Gala x Maigold made at the Federal Research Station Changins (Agroscope RAC Changins). Mairac is a subacid, crisp apple. Both varieties have good storage and shelf life. Comparative varietal information will be provided on fruit and tree performance and postharvest characteristics such as storage, shelf life and sensory performance.
- 8:50 **Experience in South Tyrol with New Apple Varieties Rubens®Civni, Pinova and Cameo**
Dr. Martin Thomann, Bernard Botzner and Dr. Paul Pernter, Extension Horticulturists, South Tyrolean Advisory Service for Fruit- and Wine-growing, Latsch and Neumarkt, Italy
Most Rubens and Cameo trees in the South Tyrol were planted in 2001. These new varieties were planted in second locations under different micro-climatic conditions. After two years' experience we will present the first results of our field observations. For Pinova we have gathered data for several years. More than 200,000 trees have been planted in the Vinschgau Valley in the last six years.
- 9:15 **Performance of Cameo, Honeycrisp and Ambrosia in North America**
Kent Waliser, General Manager, Sagemoor Farms, Pasco, WA, USA; Dennis Courtier, Pepin Heights Orchard, Lake City, MN, USA; and Jamie Kidston, Grower, Vernon, B.C. Canada
Growing, handling, storage and marketing of Honeycrisp in the U.S. and Canada will be discussed. (D. Courtier)
Cameo, the Washington State Experience: Cameo is a chance seedling found in Washington State, USA. Cameo has been in the marketplace for 10 years. Topics discussed will include current growing practices, storage and handling and market acceptance. The question "Is this a viable apple variety for growers in today's market?" will be answered. (K. Waliser)
Ambrosia is a chance seedling found in the Okanagan Valley of British Columbia. It has been widely planted in British Columbia in the past 10 years. Production is increasing rapidly, but it is only in the past 2 years that significant volumes have been available for marketing. Most of the production is marketed through one sales agency. Market acceptance has been very strong, and we look to a bright future for the variety. (J. Kidston)
- 9:50 **New Variety Trends in Australia and New Zealand**
Garry Langford, National Coordinator, Australian Pome Fruit Improvement Program Ltd., Australia
The varietal mix is always changing in any dynamic industry. The Australian industry has seen substantial change in the past few years with the move away from Red Delicious and the expansion of Pink Lady™. The New Zealand industry is also undergoing change with the introduction of new varieties from the HortResearch breeding program. The newest introduction Jazz™ is expected to make an impact in New Zealand and elsewhere in the world in the next few years. Both these industries have considerable investment in Gala and its various sports with production continuing to expand in Australia.
- 10:10 Break
- 10:30 **Sweet Cherry Growing in Europe—New Rootstocks, Training and Varieties**
Michael S. Weber, Fruit & Marketing, webfruit Ltd., Langenargen, Germany
Europe is currently changing from extensive, nonprotected, traditional sweet cherry orchards toward intensive plantings of about 500 to 1500 trees/ha on new dwarfing rootstocks with exciting new varieties. As a consequence these high value orchards are going to be protected against bird damage and rain in order to guarantee a reliable supply to domestic and international markets. A general overview of the changing sweet cherry industry in Europe will be presented. Experiences from commercial orchards as well as research stations will be presented about orchard design, training systems and variety selection.
- 11:10 **What's New in Sweet Cherry Production in North America—Varieties, Rootstocks and Training**
Dr. Greg Lang, Professor, Horticulture Department, Michigan State University, East Lansing, MI, USA
Sweet cherry acreage in the United States continues its significant and nearly decade-long expansion, driven by profitable fresh markets and significant advances in varieties, rootstocks and training methods. As this acreage matures and market competition increases, growers

planning new orchards must choose judiciously and knowledgeably from the expanded choices in plant materials as well as orchard management strategies. Marketing issues, from traditional to organic, also increasingly impact near- and long-term orchard decisions. The ongoing and future status of these topics will be reviewed and discussed.

11:50 Lunch

Wednesday, March 3, 2004 (1:30 to 4:30 p.m.)

Kent Waliser, IDFTA Board Member, Moderator

1:30 Orchard Innovation and New Varieties in Nagano, Japan

Takanobu Nakamura, Grower, Azumino Family Agri-Products Ltd., Nagano, Japan

Japanese apple growing is very unique and specialized compared with other countries. It is labor intensive. They are always looking for high quality such as large and beautifully colored apples. The new apple varieties Akibae, Shinano Sweet and Shinano Gold originated at Nagano and will be more popular in the near future. These apples are very good and may have the potential of being planted extensively in Japan.

1:55 Organic Apple Production in Europe

Dr. Markus Kelderer, Coordinator of the Fruit Section, Research Center for Agriculture and Forestry Laimburg, Ora, Italy

Organic apple growing is still a niche production in comparison to the conventional one, but in the last years it has had a consistent rate of increase. At present there are approximately 6000 ha of organic apple orchards in Europe. The most important organic apple producers are Italy, Germany and France. For weed control in the tree rows, new machines were developed; aphids are controlled with extracts from the neem tree and scab with lime sulfur scab-stop treatments. In regions with a drier climate, the same varieties are grown as in conventional orchards (e.g., South Tyrol). In regions with a wetter climate, growers try to work with scab-resistant varieties (e.g., Topaz). Presently the biggest challenge for organic apple growing is the required plant protection products. Since the market of biopesticides is still very small, there is little interest in the introduction of new products by the companies. Although the European Community works on the unification of registration of pesticides, there are still huge differences between countries.

2:55 Innovation and Service Provided by Cooperatives in the South Tyrolean Apple Industry

Gerhard Dichgans and Josef Wielander, VOG and VIP Associations of South Tyrolean Fruit Growing Cooperatives, Terlan, Italy

The cooperative movement in South Tyrol has been a leader in innovation and has adapted its services and varietal range to the changing demand of clients and markets. The first high density plantings on M.9 were planted 34 years ago and since then change has been continuous. In the last 5 years, over 30% of the orchards have been replanted to new, more commercial varieties such as Gala, Braeburn, Fuji and Pink Lady. Mergers between packing houses have been the basis for investing in state-of-the-art sorting and packing equipment. The associations of cooperation (VOG and VIP) feel ready to face the growing challenges of the future.

3:05 Break

3:25 Producing High Quality Apple Trees in the Nursery

Arie van den Berg, Operations Manager, Verbeek Nurseries, The Netherlands

The characteristics of high quality apple trees will be discussed. What special treatments are used in the nursery to make such trees? What is the advantage (benefit) for the modern fruit grower when he plants high quality apple trees?

4:00 Performance of New CG (Cornell-Geneva) Apple Rootstocks in Trials in the U.S.

Dr. Terence Robinson, Cornell University, Geneva, NY, USA

The Cornell-Geneva rootstock series was developed by Drs. Jim Cummins and Herb Aldwinckle over the last 30 years. Several rootstocks ranging in vigor from M.27 to MM.106 have been released in the U.S. and are under trial in other parts of the world, including 5 countries in Europe. The most promising rootstocks have fire blight resistance and tolerance to phytophthora root rot. National trials in the U.S. and in France over the last 10 years have indicated that several CG rootstocks have considerable promise.

4:30 Adjourn

Thursday, March 4, 2004

8:00 All day orchard, research station and warehouse tour.