International Fruit Tree Association Study Tour to Italy

Win Cowgill
Rutgers University, New Jersey Agricultural Experiment Station

One hundred and fifty fruit growers, extension workers, researchers, and industry workers answered the call of IFTA to travel and study with Dr. Terence Robinson to Italy in November, 2014.

Our goal was to study apple production in one of the most concentrated fruit growing areas of the World, the South Tyrol region. With 18,400 hectares (more than 45,000 acres) of production, South Tyrol is the largest apple production area in Italy as well as in the entire European Union (EU). Over 5,000 farmers produce apples in this unique contiguous region, nestled in two, long, narrow valleys with mountains on both sides.

We all met in Venice, Saturday night November 15 and had a warm welcoming dinner. After decompressing from one and one half days of international travel by touring the magnificent city of Venice, we departed Monday for an apple nursery tour hosted by GRIBA tree nursery in Isola della Scala (south of Vernona) (http://www.griba.it).

The secret to the outstanding apple production in terms of yield and quality is the starting unit, the nursery tree. In visiting one of GRIBA's nursery fields, we all saw first hand the quality of the apple trees, almost ready to be dug for planting in 2015. We spent over two hours in the GRIBA nursery learning and asking questions.

Producing High Quality Feathered Apple Trees at GRIBA's Nursery

Attention to detail is the key to Griba's outstanding tree quality. We spent two hours learning the ins and outs of their system from Gunther Mahlknecht. Of course in just 2 hours it is just an overview, but never the less here are some highlights.

Gunther Mahlknecht, Dirctor of Griba, showed us how they grow some of the finest apple trees in the world. In the photo below Gunter shows us the extremely high quality 1 year old Delicious cv. RedVelox apple tree on M.9 NAKBT337 rootstock. Note the large number of long good size feathers in the photos.

Overview of Golden Delicious Nursery Stock

- Cultivar Golden Delicious Klon B Lb.
- Rootstock M.9 NAKBT337 (95% of their production, no Geneva stocks-Farmers demand M.9).
- One year trees in the nursery (not Knip boom trees).

- Blue label indicates trees are certified virus free.
- Rootstocks are bench grafted in February, Planted March. If you look closely you can see the approximately 2 inch piece of bench graft at the top of the rootstock.
- Stock planted approximately 3' by 1' in the nursery (closer spacing than in the USA).
- Herbicides are applied every 15-20 days with shielded booms, first application has pendilmethalin (Prowl H20)+ post emergent burn down herbicide with subsequent post emergent burndown applications. In the US, Gramoxone would be recommended for burndown with a shielded boom.
- •Fireblight is strictly controlled. If found in the nursery the entire crop is required to be destroyed.
- Fifty percent of apple nursery production are produced as 2-year-old Knip Boom trees, and 50% are 1-year-old trees.

IFTA growers crowd around the nursery stock to learn from Gunther Mahlknecht how they produce their trees. IFTA members are never shy in peppering our hosts with questions!

Nursery Production Techniques

- Pest control is done weekly.
- Purchases hail insurance on nursery.
- Trees are defoliated utilizing copper and sulfur combinations and copper EDTA.
- Crop rotation is an issue, as there is no fumigation

At our GRIBA Nursery stop, Kurt Werth (black hat), our local host and tour organizer, introduced Gunther (right of Kurt) to the IFTA group. You can see the 250,000 apple nursery block in the background.

Overview Photo of Golden Delicious Nursery Stock at GRIBA Nursery, note the 15 plus feathers on these trees.

A perfect golden delicious tree/ on M.9 NAKBT337- branched at GRIBA nursery- Tues November 18. This would be graded a 7+Tree with seven feathers over 30 cm long, well spaced good angles.

Three different cultivar tree samples of the highest quality apple nursery trees, grade 1st Quality 7+ Extra, at the GRIBA Nursery display at the INTERPOMA Trade Show in Bolzano, November 14, 2014.

permitted in Italy. Trees must therefore always be grown on virgin ground. New locations are located on rented land.

Characteristics of GRIBA Apple NurseryTrees

- Uniform Standards for nursery tree quality are in place (note that European orchardists have demanded higher quality trees for 20 years, much longer than their US counterparts).
- The goal is the grade of, 1st Quality 7 + Extra, this grade equals a one year tree > than 18 mm trunk size with seven feathers over 30 cm in length plus additional feathers or a 2-year Knip Boom Tree > than 20 mm with seven feathers over 30 cm in length plus additional feathers.
- These trees all appeared to be well over 6' tall in the nursery (we were looking at 1 year old trees not 2 year old Knip Boom trees as shown in the accompanying photos).

How Do they Get those Feathered Trees?

The secret is to make multiple applications of 6-BA (6-benzyladenine) to the growing tips in the nursery throughout the growing season. First application is at 60 CM, the standard height for first feathers. Subsequent applications are made throughout the growing season (3-5) to produce the highly feathered trees. Authors Note: we have been working with Maxcel (6-BA) and Promalin (6BA +GA_{4+7}) in the USA for the past 4 years in the nursery industry to branch trees and figure out its use (see *Horticultural News* Volume 94 Number 3 or *Fruit Notes* Volume 79 Number 3). In 2013, a branching was added to the label for Maxcel and already was on the Promalin label in the US for apple and cherry trees.

IFTA Study Tour To Italy to Be Continued in the 2015 spring issue. Topics will include grower visits, research station visit, and INTERPOMA, the Largest Fruit Trade Show in the World!

Credit for all photos: Win Cowgill.

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