



## INTRODUCTION OF MODERN INTENSIVE ORCHARDS IN ARMENIA

Armenian fruit producers continue using the traditional methods of tree growing and orchard management, though most of European countries have already shifted to new intensive orchard plantations with trees grafted on dwarf rootstocks.

Local farmers have to struggle against unfavorable weather conditions, diseases, irrigation problems, etc., while growing fruits. Agriculture is quite a risky industry and each technology that helps decreasing the level of riskiness of fruit growers is improving farmers' livelihood. Intensive orchards require more initial investments, though they are going to pay back much faster than the conventional fruit orchards.



The majority of professional fruit growers in Europe produce fruits in intensive fruit orchards, which allow changing the tree varieties without many losses within a short period of time. Meanwhile in Armenia the changing of tree variety takes at least 5-7 years and requires a lot of investments in this period without any return. This fact does not allow adjusting the fruit production according to rapidly changing market needs.

During Soviet times some attempts were made to establish intensive orchards in various regions of Armenia. However, most of the knowledge gained from that experience was lost.

Nowadays, the situation with fruit growing is urging to shift to more advanced techniques, since farmers have to compete with international markets. Fruit prices are growing from year to year, and in the same time cannot be predicted due to high vulnerability of local fruit growers and inability to resist weather disasters, diseases and competition with foreign farmers.

In order to demonstrate the advantages of intensive orchards CARD introduced new varieties of apple, pear and plum trees to farmers in three regions of Armenia. In particular, dwarf rootstock trees of "Granny Smith" apples, "Conference" pears, "Victoria" and "Cacacks" plum trees were introduced to Farmer Cooperatives in Armavir, Ararat and Vayots Dzor regions. In total 600 apple, 600 pear and 400 plum trees were imported from the Netherlands and Italy and were provided to Farmer cooperatives, which unite eight communities in the mentioned marzes.

The following criteria were used to choose the cooperatives: availability of good quality soil and land plots, permanent irrigation opportunity, safety related issues, farmer's willingness and

real ability to contribute all the necessary material (excluding wire) as well as experience and knowledge in orchard management and tree growing.

The intensive orchards require installations of concrete supports to make wire system and wooden poles for each tree, since the trees need to be tied to poles for rigidity.

CARD provided the trees and wires to the cooperatives, while farmers invested in concrete and wooden poles as well as undertook the construction work and other related minor expenses. In some of the plots the farmers invested in drip irrigation system as well. CARD provided cover supernets for two plots to protect the orchards from hail, birds, and spring frosts.

The orchards need effective pollinators, which usually are honeybees. However, during blossoming time when the weather is not sunny honeybees do not leave the hives and flowers remain without pollination. For that reason CARD provided the farmers with bumblebee families in hives. The bumblebees pollinate the trees even when the weather is not good for honeybees to fly; besides they are bigger and furrer than honeybees, which helps them to pollinate the flowers even if the pollen is wet.

Apple and pear varieties introduced by the project are new to Armenia. Granny Smith apples are mainly imported and Conference pears do not exist in the local market. Prices for the presented varieties remain constantly high throughout the year, irrespective of the harvest of the current agricultural year. Such price stability will return high profits to the farmers and improve their livelihood.

One of the most important parts of the project is considered to be the high quality advisory services for establishing modern orchards in Armenia meeting the European standards.

To support farmers technically CARD applied to its partner from the Netherlands, PUM Dutch Senior Experts organization. CARD has been collaborating with PUM for a few years and has good experience in working with this organization.



PUM sent its volunteer expert in trees and orchard management Mr. Antoon Andela to Armenia. First the expert remotely consulted the farmers via CARD on the tree planting, making of the wire system with concrete and wooden poles and tying up the trees. After the arrival together with the CARD specialist the expert visited all the plots with new orchards, corrected the mistakes in planting and demonstrated the pruning, grafting and tying techniques to the farmers.

## CARD HOSTS UTAH UNIVERSITY STUDENTS

It already becomes a good tradition for CARD Foundation to host students from Utah State University in CARD premises. This year a group of students from Utah State University Huntsman School of Business visited Armenia. On June 14 they had a meeting with CARD Director Gagik Sardaryan and other staff members.

During the PowerPoint presentation Mr. Sardaryan introduced them the main activities of the organization, the projects implemented with the assistance of USDA, and how CARD is utilizing US tax-payers generous contribution to develop agriculture in Armenia. Also CARD demonstrated one of its initiatives - the introduction of U.S. companies to Armenia – among them John Deere, NESCO, World Wide Sires, Abbot&Cobb, Sealed Air, US Plastic etc. - the current state of agriculture and business environment of Armenia and other interesting issues related to the field.

The presentation was followed by Q&A. In order to have a better vision of the situation in Armenia, the students posed very profound questions demanding exhaustive answers. They were mostly interested in the problems that Armenian cheese producers, greenhouse owners and other entrepreneurs face, as well as the risks and challenges of business environment, export of products and other issues.

After the meeting, the team visited Black Ox dairy farm, where they had tour in milk processing unit and cattle barn. The farm owner presented them their activities in terms of Artificial Insemination, Cattle genetics improvement, cattle housing in open air barn, etc..



After the students' visit to Armenia Director of International Programs Jon M. Huntsman School of Business Vijay R. Kannan said the following, "The richness of the experience you shared is as always a huge factor in the success of our time in Yerevan. The visit to the Black Ox Dairy was also excellent and provided an outstanding learning opportunity, as well as a chance for the students to see the value of international partnerships. The hospitality that was extended to us there also gave the group a unique and much appreciated taste of rural life."

## CHR HANSEN EXPERT INTRODUCES ADVANCED TECHNOLOGIES OF DAIRY PRODUCTION TO ARMENIAN PRODUCERS



Chr. Hansen technologist-consultant for CIS countries Mindaugas Visgaitis (Vilnius, Litva) visited Armenia on June 4-11, 2011 to provide consultancy and trainings to Armenian dairy food producers within the frames of cooperation with CARD.

Together with CARD specialist working visits were paid to *Ashtarak Kat*, *Marianna*, *Chanakh* and *Igit* dairy plants, where in-plant trainings were conducted to improve the quality of fermented products, and to find solutions to the production of sour cream, yogurt, matsun, tan and curds. The expert presented to the Armenian producers the experience of CIS states in producing dairy food. Since the dairy production technology is almost identical in post-Soviet

countries, their achievements can be adopted by local producers to improve the quality of dairy products.

Besides, the above-mentioned plants, the specialists visited the plants of regional big cheese producers, such as *Dustr Melania* (Tashir community of Lori region), *Ashotsk Cheese plant* (Ashotsk community of Shirak region).

On June 9, the training "Use of Chr. Hansen Ingredients in Production of Fermented Products and Cheese" was held in CARD premises. The participants were 20 specialists from 16 dairy production plants.

Chr. Hansen is a global supplier of bioscience based ingredients to the food, health and animal feed industries, with leading positions in the market. They produce cultures and dairy enzymes, probiotics and natural colors. Chr. Hansen's research and development activities focus on building up world-class knowledge around technological core competences: finding and developing microorganisms for the global food and health industries.

Fermentation is a central discipline in the development of production processes for all culture and enzyme products in Chr. Hansen. An in-depth knowledge of fermentation is a key success factor in all stages of process development - from the initial design of a new product to the safe and robust implementation in global production facilities.

## COLORS CAN VISUALLY TRANSFORM GARDENS

Colors invoke emotion. Cool colors of blue, green, and violet are peaceful and make an area seem cooler and larger. Blue is the color of distance and can help create the illusion of depth in a small garden. Soft purples and blues can make your garden feel larger because those plants seem farther away. Warm colors of orange, red and yellow

grab attention creating a focal point in the garden. They also make large areas appear smaller. Brighter colors function well as accents. In a small garden, color can be used in gradation to create the illusion of space. A great way to achieve this is to have, for instance, bold blue flowers at one end that fade into a lighter blue at the other end of the garden.

Supported by



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