

Entrepreneurs

Plant Biotechnology

Trees in a test tube

The small innovative company for in vitro propagation of plants Bio tree has a strong weapon against the deforestation in Europe and for reaching sustainable biodiversity.

Small green shoots are developing just like mushrooms in jars at the Bio tree laboratory for in vitro propagation of plants. Most of them are sleeping in dark and waiting for big customers for fast growing trees like paulownia that reach 20m at height and 40cm in diameter in 8-10 years, and for the Goji berry known as the fruit of longevity. For three months from 1000 plants could be reached 60 thousands and for two more up to a million, something impossible with any conventional technology. The knowhow for the technology is intellectual property of the company and the biggest value developed from the young innovative company. "For the past year Bio tree sold more than 200 000 plants, this is the biggest quantity in Bulgaria for in vitro Paulownia and Goji berry" - explains one of the owners and manager of the company Teodora Georgieva.

The paulownia species, known as the tree of life in the east, are highly graded new products at the world timber market. They possess valuable characteristics for development of high productive alternative agriculture, for industrial production of pellets, biomass, biofuels, timber goods for the pharmacy, forestry, landslips and for ornamental purposes. The hybrid cultivars are grown in different climate areas with temperatures from -20 up to +40⁰C.

This product is the basis of effective foreign trade network, developed by Bio tree with representations in more than 10 European countries. For three years the company reached 26 markets and a serious economic growth with a turnover of 1mln leva for 2015.

Teodora Georgieva and her partners in the company Dimitar Hrusafov, Husein Kulov, joined by Mohamed Halid and Fatme Iliaz (master in international law from the NY State University) enter in the biotechnology business without any experience. Georgieva is an economist by profession, which led her own company for consulting and management of investment projects. At her office occasionally come scientists, searching for ways to transfer their technologies into production. Once a professor from the field of in vitro propagation of paulownia visited in search for financing of her idea for laboratory. Teodora make the connection with her clients from Weiss profil (one of the leading Bulgarian companies for production of PVC profiles). The owners Mr. Hrusafov and Mr. Kulov are people opened to new things with new vision for making business. Without any hesitation they made some space in the factory for the laboratory and invest in the idea. Georgieva lives with the idea that after the formalities with the company registration she will continue on her way with the consulting business. But the professor doesn't have any experience in developing a laboratory or leading a business. Georgieva decides that it's not the time to leave the project since she supported it so far. The company starts with 300 000 leva company loan.

The inexperienced team starts to develop business based on the experimental method. The management starts looking for market of the in vitro plants where the customers to acclimatize the

plants by themselves till the moment for planting. All of the clients prefer plants ready for planting. The problem was partly solved with the purchase of one small greenhouse to adapt the in vitro plants for normal conditions. In the beginning there is lots of wastage. The technology for acclimatization of plants grown in laboratory requires a time to be developed.

The company works on this issue together with Sofia University, Plovdiv agricultural university, Agrobioinstitute Sofia and The "Nikola Poushkarov". All of them are interested in Paulownia as production culture. The Institute of Soil Science provides to the company a glass greenhouse and an old building. The company invests 400 000 leva in renovation and modernization of a neat building with laboratory inside and 3700 m² greenhouse.

The young team of researchers is devoted to develop cultivars that are adapted to the European climate. They developed their own trade mark. The first specimens of the new product are presented at the AGRA fair in 2011. The products attract the attention of a Serbian company A&S Union from Subotica. They order the first 5000 plants and consecutively increase the orders together with the development of technology for planting and growing Paulownia for timber. Their plantations become a model for such plantation and attract other Balkan entrepreneurs. A&S Union becomes a representative company for Serbia, Slovenia and Croatia. The clients are mainly small farmers. At the same time in Serbia other Bulgarian companies enter the market selling plants with the name of Bio tree. It looks like the exclusivity of A&S Union is violated. "It was hard to convince the Serbians that we do not sell there even through third companies. We simply do not sell plants to any Bulgarian company in this moment. Those plants were not our cultivars, they were paulownia branded as Bio tree production" explains Georgieva.

Young, ambitious and very energetic businessman arrived from Skopje, after visiting A&S Union plantations. Without any experience in agriculture he forms a team of agronomists and develops a strategy for selling plants with a consecutive buyout of the production. The Macedonian company Bioplant even outruns the A&S Union that season with 40 000 ordered plants at the first year.

Bio tree reaches good sales also in Croatia together with a company specialized in renewable energy "Solarni projekti", which plant paulownia for biomass production.

Last year the company reaches its first big deal for 80 000 plants in a single order. The customer is Italian entrepreneur who used to buy Paulownia from leading Spanish companies. He heard about the quality of the products and also was attracted by the lower than the other European companies price (40% less), still higher than other Bulgarian competitors. That summer the Italians order additional 50 000 plants, but it is difficult for the laboratory to produce this amount for this short time. "For us it was shocking to enter new market with large volumes and different requirements, but we managed that along with the other work" says Georgieva. She tries to convince the new client to follow the well-established technology for growing Paulownia (well prepared soil and little irrigation daily for the very young plants).

Most of the problems for the growers come from interpretations or not following the good practices for growing the planting material during the first months. The company policy is to support actively the growers to overcome such problems. "We consider that the problem, even created by the grower, should not reflect to its business and finally down the chain our company to accumulate negatives. That is why we compensate his losses with new plants" says Georgieva. According to her

the fact that someone possesses agriculture land is not a guaranty for successful business. Business plan and analyses are always needed. The investment for one hectare is about 10 000 euro for Goji berry and 10 000-30 000 for paulownia.

Bio tree is the first company to present Goji berry plants at the European market and the first in the world to commercially propagate it in vitro. Everything starts with a single plant brought in the lab by Romanian partner who explains that the plant Goji is the future. Year and a half later the company selects own cultivars with distinctive superior characteristics that are planted on over 20 ha in Bulgaria. The patent cultivar JB1 delivers high yields on the first year of planting. The company expects the patents of one more Goji cultivar (JB2) and three Paulownia cultivars (Bellissia, Oxi and Paulemia). Usually the interest in Bio tree products comes from people with innovative businesses. The search for raspberries, blackberries, blueberries and rootstocks for fruit trees provokes the company to form a new section in the company portfolio.

Georgieva is well aware that she can't count only on new products, blocked by the legislation (the funds for rural development support plantations from paulownia, but the Forestry agency refuses to include the new species among those approved for afforestation before the long testing period for invasiveness of the species). In 2015 in mass production are included more than 10 cultivars of rootstocks and berries. The company expects that this type of agriculture will move forward the sector in the next years. The possible brake could be only the chaotic market that doesn't allow good planning. The interest in certain product is high when is financed by European funds, but if the result doesn't meet the expectations the attention usually falls on another. "Last year everybody planted pumpkins, because the people from the Ministry of agriculture said so. Now is the year of the berries. Because of these trends we maintain a large genetic bank of species and cultivars." says Georgieva.

According to her the sector "plant biotechnology" has enormous potential for market development especially in vitro propagated plants, which are with guaranteed quality and are disease-free. The technology provides tool for deciding many serious problems like deforestation and decreasing biodiversity in Europe. It is time for Georgieva to change the passive trade policy based on limitations, regarding higher productivity with the active work to attract new clients. All this is a slow process. The participation in fairs in Romania, Turkey and The Netherlands, shows a little lack of authority to enter such forums with confidence. "We are still searching for our place. We are not presented on typical agriculture fair; most likely you can find us on renewable energy sources fair, where the top priority was photovoltaic systems, wind generators. The biomass become priority last year" says Georgieva.

Despite the ascending trend of the company, the owners don't have the ambitions to create a massive business to compete with the biggest in the sector, but rather to maintain their company specially focused on innovative production with future.