

GEFF Tajikistan Radio Interview #2: Intensive Orchards

Moderator

Hello everyone. This is Subhon Jalilov, and for those who have just joined us, you are listening to the “Agriculture Talks” radio interview program with experts on agriculture and agri value chains, who will share their views on how farmers and agribusinesses can adopt modern technology solutions, that can enhance competitiveness of Tajik agri sector. Today we are talking about intensive orchards.

I would like to remind that this program has a separate part for the Q&A session. You can call 2231106 and ask any question or send them via our Facebook page @radiovatan. Our invited experts will be here to answer you.

Today’s guest is an agronomist and an expert from Vahdat, Mr. Khursandi Safaraliev. He has practical experience in intensive orchards and has been actively using this technology for years. Also, we have Mr. Usmonkul Boturov, GEFF Tajikistan Deputy Team Leader accompanying us in this series. I would like to welcome both guests. Today’s conversation will cover the benefits of investing in intensive orchards, common challenges faced by local farmers and possible practical solutions. We would like to briefly introduce the key objectives and activities of the GEFF program. Mr. Boturov, please.

GEFF Tajikistan expert

Thanks a lot, it is nice to be here in the studio again. The Green Economy Financing Facility Tajikistan is a product of the European Bank for Reconstruction and Development, working in cooperation with the European Union, the Green Climate Fund and the Republic of Korea. The Facility operates through Participating Financial Institutions in Tajikistan, supporting its green economy transition with \$25 million of financing for energy and resource efficiency investments. GEFF Tajikistan supports various innovative green technologies with special focus on agricultural sector. In partnership with the European Union, GEFF Tajikistan offers investment incentives for farmers and businesses investing in modern and efficient equipment and technologies.

To support agricultural value chains during this Covid-19 outbreak, GEFF Tajikistan has launched a series of podcasts and radio interviews targeted at capacity building for our beneficiaries. The aim is to promote green technologies and practices that are suitable for the Tajik context. Smallholders and entrepreneurs willing to improve their food security and create income-generating opportunities can adopt these practices and technologies. Today’s discussion is about intensive orchards.

Moderator

Thanks. Mr. Boturov, and let’s continue with our invited expert on intensive orchards Mr. Khursandi Safaraliev. Could you please introduce yourself and share with us what is actually an intensive orchard and its advantages in comparison with traditional ones?

Invited expert

Yes, with pleasure. My name is Khursandi Safaraliev, I am from the Vahdat region and have been engaged in farming from 2011. I grow apples, plums and mulberry on 2 hectares of land in Vahdat. I have experience with intensive orchards for 8 years now. With the advancement of science and technology in the field of horticulture, many innovations are being introduced. One such innovation is the creation of intensive orchards using a variety of rootstock combinations. Over the past decade, intensive orchards

have been constructed in various regions in the Republic of Tajikistan. The profitability of intensive orchards is high and includes the following advantages:

- ✓ the small size of trees allows us to place more trees per unit area and obtain a high yield;
- ✓ seedlings on dwarf rootstocks begin to bear fruit early;
- ✓ with regards to dwarf trees, it is easy to carry out agro-technical work between rows and treat with pesticides;
- ✓ light manual labour of pruning, shaping and harvesting (due to the low height of the trees);
- ✓ nutrients are mainly used for fruit formation (not for sprouting branches);
- ✓ the fruits of such orchards are of high quality, large in size and beautiful in appearance.

Intensive orchards on dwarf rootstocks are very cost-effective, but need support, because the root system of seedlings that are grafted on dwarf rootstocks are fragile and most of it is on the ground and often causes the trees to tilt during large yields or strong wind and rain. Supporting concrete poles and wires also require a large financial contribution. It takes about USD 18,000- USD 20,000 to establish 1 hectare of an orchard on dwarf vegetative stocks, and not every farmer can plant such an orchard. Notwithstanding intensive orchards require large initial investments.

The productivity of such orchards range from 60 to 100 tons and more per hectare for dwarf trees. Planting of seedlings on dwarf rootstocks is carried out within close distance. The planting pattern between trees can be from 0.9 m to 1.2 m, and between rows - from 3 to 4 m, taking into account the use of agrotechnical measures with agricultural machinery. That is, according to the following planting pattern you can plant seedlings on dwarf rootstocks.

Choosing the right location is an important task. The northern slopes are ideal for intensive orchards, as the sunlight is more abundant and warmer and the trees are less exposed to the winter cold. The southern slopes are colder and in spring, the bees pollinate tree flowers poorly due to the lack of heat and high humidity. Steep slopes are also not suitable for setting up such orchards.

Moderator

Thanks Mr Safaraliev. The investment cost seems rather high and do not seem affordable to the average farmer. Please advise on the financial performance or indicators for such a technology.

Invited expert

As was mentioned above, it would cost USD 18,000- USD 20,000 for 1 hectare of intensive orchard. For apple orchard, considering price of one kilogram of apples of an average of \$ 0.50 and the average yield of 5 tons from second year and 50 tons from sixth year, the payback period is 5 years. Another type of intensive orchard for medium-sized vegetative rootstocks has a lower investment and could be an alternative option. Intensive orchards on medium-sized vegetative rootstocks do not need support as the root system of such trees is more powerful and can support itself without additional aid. With such planting, about USD 8,000 per HA is required. Fruit trees on medium-sized rootstocks are also profitable.

The productivity of such orchards ranges from 40 to 70 tons and more per hectare for semi-dwarf trees. The planting scheme for seedlings on medium-sized rootstocks would be 4 x 3 m, 4 x 4 m and 4 x 5. At present, setting up intensive orchards on medium-sized stocks is cheaper than setting up intensive orchards on dwarf stocks. The main expense for setting up an intensive orchard is the purchase of seedlings. Imported seedlings are quite expensive.

The use of drip irrigation is a must for intensive orchards. The total amount of irrigation required during the growing season ranges from 600 to 800 cubic meters per hectare or more. The small size of the trees allows us to plant more trees per hectare and get a good harvest. In other words, we can plant 2500-3000 seedlings per hectare, and these trees are able to start harvesting in the second year already and farmers can harvest 60-100 tons in the 5th and 6th years. If a tree produces an average of 30 kg, 2500 seedlings will yield 75 tons, that is, the yield per hectare will reach 75 tons, and if there are 3000 seedlings, yield would be around 100 tons.

GEFF Tajikistan expert

Yes, definitely. To add on, most Tajik fruit producers still continue using the traditional methods of tree growing and orchard management, though there are several successful cases that have shifted to new intensive orchard plantations with dwarf or semi-dwarf trees. Intensive orchards require more initial investments, though they are going to pay back much faster than the conventional fruit orchards. Nowadays, there is a shift to more advanced techniques, since farmers have to compete with international markets. Fruit prices are growing from year to year, and at the same time yields cannot be predicted due to the high vulnerability of local fruit growers and the inability to resist weather disasters, diseases and competition with foreign farmers.

Moderator

Thank you very much, these are really useful tips for consideration. So, it is time to answer the questions that we already received from listeners.

Q&A session

GEFF Tajikistan expert

That was a very interesting discussion today on intensive orchards, I believe interested parties will find it very interesting and useful. If you have comments or questions regarding the technology we discussed today or about the GEFF Tajikistan project in general, please call 93 4339001 or visit our Facebook page.

Moderator

And now, we are at the end of discussion, it was a great pleasure to talk to you and we hope our listeners acquired some knowledge on the intensive orchards. Thanks a lot for your time. I would like to express my gratitude to the GEFF Tajikistan team for sharing experiences and supporting modern, resource efficiency technologies in Tajikistan. The upcoming session will be announced soon in our news. Thank you for your attention.