

## GEFF Tajikistan Radio Interview #4: Innovative apricot drying

### *Moderator:*

Hello our dear listeners! This is Subhon Jalilov and I'm glad to be on air with you again. You are listening to Radio Vatan. This is our bi-weekly radio interview session with experts on agri-value chains. As always, we discuss the benefits of green technologies and seek their opinions on how Tajik farmers and agribusinesses can adopt these innovative technologies and improve their climate resilience. I would like to highlight that a 'value-chain' in agriculture identifies the set of activities that brings a basic agricultural product from production in the field to final consumption, where additional value is added to the product at each stage. Our topic for today is the innovative apricot drying.

I would like to remind you, that the program has a Question and Answer session. Direct your questions to the experts via phone at 2231106, or simply use Direct Messaging on our Facebook page - @radiovatan. Our invited experts will be glad to answer your questions.

Our today's guests are Mr. Usmonkul Boturov, GEFF Tajikistan Deputy Team Leader and Mr. Orifdzhon Mansurov, Chairman of the Dekhkan farm "Khimoyatbonu" and agricultural consultant of the Sarob Cooperative at the Konibodom region, who has practical experience in the innovative drying of apricots and has been actively using this technology for many years. Welcome, dear guests, it is a pleasure to have you both on the program today. Mr. Boturov could you please remind us briefly about GEFF Tajikistan objectives.

### *GEFF Tajikistan expert:*

Thank you. The Green Economy Financing Facility Tajikistan was officially launched in November 2019 as 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. Since, the credit line was activated with its first GEFF Partner Financial Institution, the total of \$1 million has been disbursed to nearly 200 beneficiaries. One core feature of the GEFF program is how we support agricultural value chain development through sharing of technical knowledge and outreach activities.

According to the Food and Agriculture Organization of the United Nations (FAO), 70 countries are engaged in the production of apricots in the world in 2017. During this period, the volume of apricot production in the world amounted to 4.257 million tons per year. Main producers of apricot in the world are Turkey, with a production volume of 985.000 tons, Uzbekistan – 532.565 tons, Iran – 239.712 tons, Italy – 266.372 tons and Algeria 256.890. The Republic of Tajikistan ranks among the top 10 countries in terms of the volume of apricot production in the world. In good years, Tajikistan able to produce about 70,000 tons of dried apricots annually.

Apricot growing is one of the largest horticultural industries in our country. Tajiks have been cultivating apricots since ancient times. Our apricots are mainly grown in both the Sughd and Khatlon regions. In Tajikistan, the total area of apricot plantations is more than 55.000 hectares, of which close to 80% is located in the Sughd region. According to the state program for the development of the horticulture and viticulture industry for the period of 2016-2020, new apricot orchards in Tajikistan with an area of more than 16.000 hectares were planned.

It is gratifying to see that new apricot orchards with drip irrigation technology are being created in rainfed lands, newly developed lands and on the hill slopes every year. Also, our farmers started to create intensive apricot orchards with dwarf rootstocks. It should be noted that Asht, Isfara, Kanibadam, B. Gafurov, Aini and Gornaya Matcha are favourable regions for the production of dried fruits.

### *Moderator:*

Thank you. Mr. Mansurov, please tell us more about your experience in the cultivation of apricots. What technological processes take place during innovative apricot drying and what are its advantages compared to traditional drying?

***Invited Expert:***

Sure, first of all thank you very much for inviting me to the program. According to the ripening period, apricot varieties are divided into three groups: early ripening, mid-ripening and late-ripening varieties. Early ripening varieties are suitable for fresh consumption and fresh export. Examples of such varieties include Makhtobi, Tukhmaki urdak (Shalakh), Savri and Luchak. The other two groups are universal, it means, they are suitable for fresh consumption, canning and drying. For the production of canned food - making juice and various jams, it is recommended to use varieties like Hasaki, Ahrori and other.

For producing dried apricots, we recommend using varieties like Boboi, Mirsanchali, Subkhoni, Kandak, Uchma, Isfarak, Khurmoi, Tochiboi, Nishoni, as well as local varieties of apricots from Zeravshan Valley: Koshifi, Shirpaivand, Niyozhi. In Central Asia, most varieties of apricot have been bred by folk breeders for several centuries using budding. As a result of the natural mutation of species, we have good varieties for drying, like the Kandaki Konibodom, Machalka and Ravot species. About 200 varieties of apricot have been identified by Tajik scientists. Depending on the type of product produced, technological processes of drying apricots are different.

As we know, during the primary processing, 3 types of dried apricots are mainly produced from fresh apricots –dried apricot, bargak and kaisa. Dried apricot is a fruit with a nut, bargak is a dried apricot without a nut cut in half, and kaisa is a dried apricot without a nut, which is squeezed through the top of the fruit during the drying process.

In general, the technological process of innovative and traditional drying is the same. The innovative method refers to the dryer equipment used. In previous years, apricot fruits were dried on the ground between the rows of a garden, on the roofs of houses, on reed mats, on cardboard and various fabrics, which affected the quality of dried fruits. The advantage of innovative drying of apricots is that fruits are not contaminated and not damaged by insects and are well covered during rain and winds.

In the process of drying, the following activities are carried out: harvesting, washing the fruits, laying out in boxes, laying in a fumigation chamber, fumigating with sulphur powder, spreading fruits on a dryer, squeezing seeds, drying, storage - sorting and packaging. Dried fruits should have an optimum moisture content of 25-30% before storage.

***Moderator:***

Could you please share with us on the following: What types of fruit dryers are used? What is the optimal timing of harvest? Also, what difficulties do farmers face during the harvest and in the process of drying apricots?

***Invited Expert:***

Currently, with the support and training of international organizations local consultants, several types of dryers have been adapted to our conditions. Examples of innovative solar dryers include: cabinet type, portable and non-portable tent type, collector-chamber type, that dries without sunlight, and non-portable greenhouse type dryers. These dryers use plastic-lidded trays and wooden pallets. Our farmers have gradually started to switch to these technologies. For small farms, we recommend cupboard and tent types and for large orchards, we recommend non-portable greenhouse types of fruit dryers.

Depending on the climate of the regions of Tajikistan, the timing of harvesting apricot for drying is different. To determine the optimal time to harvest apricots, farmers must pay attention to the physiological ripening of the fruit. That is, when the top of the fruit is softened, is when the more of 50% of the fruits is ripened. At that time the first harvest work begins. The apricot fruit is first picked from the top of the tree and then from the middle. The rest of the harvest from the lower parts of the tree is harvested after 5-6 days. The apricot drying season lasts 25-30 days, depending on the size of the garden. The early ripening varieties of apricot for export are harvested entirely by hand on plastic boxes.

During harvesting and drying, farmers face the following difficulties: Lack of seasonal workers in some areas, mainly due to labour migration and this year due to pandemic situation; Lack of practical experience in modern technologies; Lack of equipment, plastic trays, boxes and special fabrics; Lack of high-quality sulfur powder for fumigation; Lack of funds.

***Moderator:***

As I know, you have been to Turkey several times to study such experience. Tell us about the advanced apricot drying technologies of Turkish farmers.

***Invited Expert:***

To study the apricot growing industry in Turkey, I visited the Malatya region three times, which is the centre of apricot cultivation in Turkey. The total area of fruiting apricot orchards in Turkey is 130 thousand hectares. What is interesting to note, that the Turkish farmers themselves pay great attention to the techniques behind harvesting and drying apricot fruits. They pick 75% of the apricot harvest from the trees by hand using a special technique, and shake the rest on tarps. In the process of fumigation, a sulphur powder containing 99% of the active substance is used. As there are no strong winds and precipitation during the harvesting season, the quality of dried apricots in Turkey is very high.

***Moderator:***

Thank you! Now we have reached the Question and Answer session, we have received several questions from listeners on the discussed topic.

***Q&A session***

***Moderator:***

Now we are at the end of today's program. We hope you find it valuable and informative. Again, we thank you for participating in this important project and shared expert views. I am also thanking the GEFF Tajikistan team for sharing their experiences and supporting modern, resource efficient technologies in Tajikistan. The upcoming session will be in two weeks at the same time on Fruit (apricot) processing. Thank you for your attention.