

CURRENT STATE IN SERICULTURE OF GEORGIA - PROBLEMS AND STRATEGY OF DEVELOPMENT

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Introduction

Sericulture is one of the oldest branches of agriculture in Georgia, It was always considered as the source of strengthening of economics of the country, rational application of labor resources and monetary incomes and the object of permanent care. High quality Georgian silk enjoyed great authority at the world market. Big Silk Road transected territory of Georgia. Silk cocoon, grain, fabric and other products were exported.

In 1850, in Torino and in 1862 at the International Exposition of London Georgian silk was awarded the medals. In 1998 fabric made of silk of mulberry silkworm of Georgian breeds (Mziuri 1 and Mziuri 2) received the highest quality award of Europe – platinum star.

In 50-ies of the last century the following enterprises worked to render their services to sericulture.

- 5 thread dying-winding factories of 450-500 ton raw silk thread production capacity;
- 2 silk-knitting groups of enterprises of 4,5-5,0 million meter natural silk fabric capacity;
- 6 grainage factories of 4,5-5,9 ton grain production capacity;
- 2 mulberry state nursery economies, of 1 million grafted sapling capacity
- 2 sericulture selection stations of annual capacity of 80,0 kg super elite grain production.

Today, sericulture, as the significant branch of national economy is destructed and is to be formed anew.. In the 60-ies of the twentieth century Georgia produced 4,5-5,0 ton industrial grain, 4,0-4,4 thousand ton raw silk thread and 4,5-5,0 million linear meter natural silk fabric. Income gained from realization of live cocoon equalled to 21,0-21,5 million dollars. 100-120 thousand families were employed in sericulture, while in silk industry – 5-6 thousand persons. Powerful intellectual resources and solid capital investments were concentrated in this branch of economy. Unfortunately it was namely at this stage that mulberry micoplasma disease – “leaf curl” was spread in Georgia and destructed more than 15 million mulberry trees, which together with other reasons, resulted in final fall of the branch; 15-16 thousand working places were lost.

In future, alongside with retaining strategic directions of sericulture development (nutritive/fodder base strengthening, production of grain, cocoon, raw thread and fabric) the following should be developed:

- Production of grain of local highly productive mulberry silkworm breeds (Mziuri-1, Mziuri-2, Digmuri-1 and Digmuri-2) for export,
- Revival of natural silk primitive trade by the use of colored cocoon breeds existing in collection.
- Strengthening of nutrition base should be realized mainly by planting unit mulberry plants, by scion/bud grafting in the crown of non-quality plants, within the frames of possibility, by planting of low intensive plantations;
- To facilitate production of mulberry planting material it is necessary to organize small size thermal sites at the expense of warm waters (springs) existing in the country and rearing saplings with their own root. Time needed for growth of standard saplings by the use of this method decreases with three year, while the self-cost decreases 0 2,5-3,0-times.
- In connection with transition to market economy we consider that creation of sericulture amalgamations, cooperatives, economies and other organizational forms, deepening of integration, creation of joint ventures with foreign companies and resolution of problems connected with the above stated -will be most important.

Table 1. Indices of development of sericulture in Georgia

#		years							
		1964	1984	1990	2000	2005	2010	2011	2012
1.	Mulberry plantation (thousand ha)	8.5	9.2	10.0	0.4	0.2	-	-	-
2.	Unit plants (mln plants)	7.2	6.5	8.0	4.0	3.5	-	-	-
3.	Sapling production (thousand plants)	7200	3450	2660	6.0	7.0	1.0	1.0	1.2
4.	Production of breed and hybrid grain (thousand kg.)	3.8	2.4	1.7	0.2	-	-	-	-
5.	Number of cocoon producing farmers (man)	120.3	119	100	3.6	-	0.1	-	-
6.	Quantity of produced cocoon (t)	4382	1998	1557	9.2	-	1.1	-	-
7.	Raw silk production (t)	450	382	268	-	-	-	-	-
8.	Production of silk fabrics (mln linear meter)	5.0	3.0	3.2	-	-	-	-	-
9.	Live cocoon yield per gram grain (kg)	1.9	2.0	1.9	1.4	-	3.2	-	-

STARTING CONDITIONS FOR REHABILITATION

Current situation in sericulture is extremely heavy in Georgia.

- Demand on natural silk is increasing in the world. China loses its monopolistic role, which creates favorable condition for silk production in alternate countries;
- Great love to the branch, desire to restore fodder base, local specialists, experienced sericulture specialists, enthusiasts and researchers to restore sericulture still exist in the country.
- Revival of the branch will contribute to mass employment of rural population, increase of incomes, improvement of family budget, slowing of migration processes and others.
- Natural conditions of Georgia, ancient history in silk production, most important and valued silk gloss inherent to Georgian silk; alongside with raw silk produced in Georgia that completely yields to factory treatment – fabric making are advantages.

Preference in silk cocoon production will be granted to “family” production of cocoon, and gradually progressive methods and technologies of feeding will be inculcated.

The main organizational form for silk cocoon production will be cooperatives, amalgamations and other unions created at various levels.

In 1945-2012, in Georgia as a result of selection activity 31 mulberry breeds were revealed and 19 of those breeds were inculcated in industry.

Genetic resources of mulberry silkworm are of two kinds:

- Old breeds, withdrawn from industry (there were up to 170, remained 73), which are kept at the Kutaisi Zonal Experimental Station.
- Newly zoned perspective breeds, which are protected and kept at the Institute (till starting the enterprise).

MAJOR PROBLEMS AND RECOMMENDATIONS

At current stage this branch is brought to the level that its revival without application of protectionist policy, investment attraction and starting of joint companies will not be managed. We can consider also the fact that in the post-soviet states, in connection with transmission to market economy, sericulture suffered most.

Taking into consideration the real situation that was created in sericulture the “Conception of Development of Sericulture in Georgia – 2012-2025” was developed, in which the main directions (strategy) of sericulture development, criteria and expected results are analyzed thoroughly.

The main goal of the conception is stage-wise restoration of historical traditions of sericulture:

- At the first stage – rehabilitation of the branch, restoration of forgotten traditions of primitive trade, creation of small joint companies, preparation of conditions for grain production on the basis of highly productive local breeds of mulberry silkworm (Mziuri 1, Mziuri 2, Digmuri 1, Digmuri 2) etc.
- Final product will be raw silk thread and handicraft wares.
- At the second stage – restoration of the branch, increase of cocoon production, perfection of processing capacities, and regulation of other problems. Export of grain, fabrics, ready product.

REHABILITATION OF SERICULTURE IN GEORGIA – REHABILITATION STRATEGY AND EXPECTED RESULTS

At the current stage restoration of the ruined fodder base and revival of the branch asks for new approaches. Therefore, considering the present day reality we have to define directions of strengthening of both the fodder base as well as cocoon production-procession.

At the first stage mainly unit (linear) plants will be planted at the expense of grafted and selected hybrid saplings, considering their further grafting with quality buds. Special attention will be paid to grafting of the existing low grade plants in the crown, with high grade bud.

Within the frames of possibility small size intense plantations will be organized.

Specific attention will be paid to multipurpose application of unique properties of mulberry plant. Production of saplings of recommended mulberry varieties in farm economies is considered and production of self-root saplings on small size (from 100 to 1000 m²) thermal sites organized on naturally warm sources (springs).

At the first stage annually 180-200 thousand saplings (hybrids) will be produced, while at the second stage 140-150 thousand saplings. In 2020 total number of mulberry trees will reach 9-10 million plants, which will enable to feed 50-55 thousand box worm and produce 2,5 -3,0 thousand ton cocoon. On the second stage it will be increased up to 4,0-4,5 thousand ton. Only spring feeding will be performed in order to decrease harmfulness of mulberry disease “leaf curl”.

At the first stage annually at about 70-80 thousand farmers will participate in silk cocoon production, while at the second stage –more than 100 thousand.

DEVELOPMENT STRATEGY

Now the revival of the branch is considered within the frames of the state interests. There is a conception of development and the work is in progress on investment programs (in regional specter), where the main aspects of the branch development and main indices of economic efficiency are given.

. Integration with the countries of the region is available in many spheres of science together with practical activity.

With the scientific point of view, according to our opinion, cooperation with the countries of the region will be interesting:

- For spreading-generalization of very interesting results of completed works in the study of mulberry anatomy.
- For generalization of approved methods of prevention of mulberry disease “leaf curl”.
- At the Agrarian University of Georgia it is planned to study genotype and phenotype properties of silkworm breeds of Georgian origin and their labeling by molecular-biological methods (genetic passport system);
- At the current stage, with the view of practical activity, the integrated activity will be profitable:
 - For restoration of bases of live cocoon production and initial treatment;
 - In 2013-2017 joint ventures can be created:
 - On the basis of still preserved grainage factories, which mainly produced grain of local high-productive breeds.

INFORMATION ABOUT WORK IMPLEMENTED AFTER BACSA 5th INTERNATIONAL CONFERENCE (Bucharest , 2011)

Today scientific activity is extremely limited at the Institute of Sericulture, but preservation of unique silkworm breeds and collection is somehow managed. Definite works are carried out also in moriculture.

Scientific research work became especially difficult when Agrarian University passed into private ownership (2010). Therefore it is necessary to isolate the Institute from Agrarian University and subordinate it to the Ministry of Agriculture or Academy of Agrarian Sciences. Selection activity and costs for care and preservation of collection of mulberry varieties and silkworm breeds should be funded by the state.

Lately, desire to revive sericulture was shown by the society

Proceeding from the above stated we can state that if we will not hinder the branch artificially, Georgian silk will regain its old fame.

Georgian Silk



Machine for leaf removal from branches



Mulberry leaf cutting machine



Leaf cut for various instar Silkworm



Shelf for removal of bedding, with inclined bottom



Georgian mulberry silkworm breeds



Georgian silk cocoon

