

Name of the faculty/ institute/ center

Faculty of Agricultural Sciences and Biosystems Engineering

Projects received by the Shota Rustaveli National Science Foundation grant

Appendix 1

Nº	Name of the grant	Project Coordinator	Project start and end years	Amount	Status completed/in progress	Grant code
1	Wild adolescent vine (<i>Vitis vinifera</i> L.) in Georgia: search, description, characterization and establishing connections with other representatives of the gene pool	Supervisor: Davit Maghradze Doctoral student: Maya Kikvadze	2022	20,100.00 Lari	Completed	PHDF-21-2832
2	"Determining the optimal modes of irrigation of agricultural crops taking into account the characteristics of soils"	M. Lomishvili	2015-2018	20.000 Lari	Completed	NºDO/82/10-170/14
3	Protection of the environment from global pollution and grain innovative biotechnology to increase the yield of crops development and management	Nana Bakradze Performers: Lia Amiranashvili, Natia Sukhishvili, Tamuna Modebadze	2020-2021	250.000 Lari	Completed	CARYS 19-573

Abstracts :

1. Project-concrete result

Objective: description and characterization of 8 wild adolescent forms of grapevine found in the territory of Georgia and preserved in the collection plantation of the Scientific Research

Center Jighaura (which have more characteristic features of cultivated grapevines) using ampelographic, eno-carpological, phenology, phytopathology and modern methods of viticulture, based on the international OIV and Bioversity International methods; their comparison with the cultivated forms of the vine; Selection of better forms for selective programs. Scientific novelty: for the first time, the wild adolescent forms of the European vine (*V. vinifera* L.) found in Georgia in 2002-2013 with similar signs to the cultivated varieties were studied;

1) their ampelographic description was performed according to OIV descriptors and compared with cultivated varieties and invasive species;

2) the phenological phases of development in 2020-2022 were studied;

3) Forms were

assessed for resistance to powdery mildew

4) the eno-carpological indicators of the forms were studied, thus determining their economic importance;

5) experimental wines of wild adolescent forms were produced, the potential of wines was evaluated according to their biochemical indicators and organoleptic characteristics;

According to tasters, Delis 01 has potential in the category of sparkling wine, and Naghomari 01 in the category of red dry wine.

6) the eco-geographical aspects of the distribution of young vines in the wild were generalized, including physical-geographical conditions, vertical distribution from sea level, relief exposures;

7) the potential productivity of research forms and the Ravazi index were determined;

8) For the first time, wild adolescent forms were used in the selection program

Practical value

1. The scientific literature about wild adolescent vine was enriched with new data - 7 articles were published.

2. 8 samples of young wild vine were characterized by ampelographic and ampelometric method.

3. A photographic database of wild adolescent vines was collected.

4. Ampelographic cards of wild adolescent vine forms were made.

5. Herbariums of wild adolescent vine forms were made.

6. Forms with high resistance to powdery mildew were selected.

7. During the hybridization in the selection program, wild teenage vines were used as one of the parents.

8. An optimal method of reproduction of wild adolescent forms was developed.

9. The potential of wines from wild adolescent vine forms was evaluated.

10. Seedlings of wild adolescent forms were planted in the collection of Shumi wine company.

11. Information about the forms of wild adolescent vines was placed in the international catalog

2. Project-concrete result

Determining the optimal modes of irrigation of agricultural crops, taking into account the characteristics of the soil-grounds quote The main goal of the work is to determine the optimal modes of irrigation of agricultural crops, taking into account the characteristics of the soil. The recommendations of the optimal irrigation regime developed within the framework of the dissertation, taking into account the natural and climatic conditions of Georgia, soil properties and the water requirements of various agricultural crops, will significantly contribute to the development of the agro-sector of Georgia and, in particular, to the improvement of irrigated agriculture.

3. Project-concrete result

Abstract

In order to increase the yield of crops and protect the environment from global pollution, an innovative biogrotechnology of wheat production has been developed; The positive effect of wheat seed pre-sowing two-step treatment (with laser irradiation and *Azospirillum Brasiliense* suspension) on wheat germination, growth and development under greenhouse and field conditions has been established. pre-sowing treatment of wheat grains with laser and with laser in combination with *Azospirillum brasiliense* increases the yield by 18-35% and reduces the risk of crop fungal disease as well. This, in turn, ensures an increase in the supply of food to the population for a healthy life and the fight against hunger.