

REVIEW

2019.12.01
2020.01.05
12.01 20

On Ph.D. thesis about acquired the educational and scientific degree "**Doctor**" in: field of higher education 6.Agricultural sciences and veterinary medicine. Professional field 6.1. Crop science, scientific specialty Fruit-growing

Author of the thesis: Georgi Ivanov Govedarov, Ph.D. student of self-study in the Department of Fruit growing at the Agricultural University-Plovdiv

Thesis title: Opportunities for accelerated production of pear and quince trees on various quince rootstocks.

Reviewer: Prof. Dr. Valentin Iliev Lichev, Agrarian University - Plovdiv, Higher Education Area 6. Agricultural Sciences and Veterinary Medicine, Professional Scope 6.1. Crop Science, Scientific Speciality 04.01.15 Fruit growing, appointed as a member of the Scientific Jury with Ordinance No. № RD 16-1374 / 13.12.2019 of the Rector of Agricultural University-Plovdiv

I. Short presentation of the candidate.

Georgi Ivanov Govedorov has graduated the secondary education at the Mathematical High School "Ivan Vazov" in Dobrich. He graduated from the Agrarian University of Plovdiv with a degree in General agronomy in 1984. In the same year, he started working as an agronomist, head of the Seed Production Division of cucumbers of the Sandra variety at the Greenhouse enterprise, the town of Rakovski. Subsequently, he is still a university teaching staff - assistant, senior assistant and chief assistant at the Department of Fruit Growing at the Agricultural University in Plovdiv. Has a good level of skills in English and Russian languages, both written and spoken. He has very good organizational skills. In 1993, as an assistant, he was the head of a student brigade in the village of Izbegli, Plovdiv.

II. The actuality of the problem.

Modern, intensive fruit production has increased demands on the quality of the planting material. At the same time, many scientific teams around the world are striving to improve the efficiency of fruit tree production in the nursery. I have in mind that the proposed for reviewing scientific work treated precisely the issues of quantity and quality of quince and pear trees, and economic efficiency in their production in the

nursery, I think that the topic of the thesis is particularly relevant.

III. Aim and tasks of the study.

After the PhD student, in his preliminary observations, found that quince rootstocks restarted their active juice movement in the spring earlier than the rootstock for other fruit species, he aimed to produce for one year a quality quince and pear trees grafted on quince rootstocks applied the traditional grafting method - T-section. The trees produced by conventional technology for 2 years are used for comparison.

In connection with this, the main tasks to be implemented include:

1. Establishing the possibility of producing quality quince rootstocks in the nursery for vegetative rootstock, more suitable for accelerated tree production.

2. Studies in the nursery concerning the accelerated method of production of pear and quince varieties grafted on quince rootstocks by T-section oculate on awake bud.

3. Researches in the quince nursery for vegetative rootstock to produce cuttings with the maximum number of leaves and highly reduced number of fruit buds.

IV. Visualization and presentation of the obtained results.

The thesis is written on 113 standard typescript pages.

The work of the Ph.D. student is illustrated, containing 24 figures and 29 tables.

The common methods have been used in accounting for the individual indicators. Methodologically, the study meets to standard.

Almost all the data presented are under statistically processing using the method of analysis of variance, which allows making reliable and reasoned conclusions.

V. Discussion of the results and the literature used.

The structure of the thesis fulfills the requirements for the educational and scientific degree of "Doctor". In connection with the literature review and discussion of the experimental results, a sufficiently rich literary review was prepared, included a total of 135 sources, 36 of which are in Cyrillic and 99 in Latin. This indicates that the author has become thoroughly acquainted with the problems existing in the production of grafted trees, and has subsequently suggested possibilities for solving them. The PhD student is fluent in the scientific terminology and uses it correctly. The data has been properly analyzed.

VI. Contributions to the thesis.

The main contributions are as follows:

Original Scientific contributions

1. The duration for interception of grafted pear and quince buds in the traditional and accelerated production method has been established.
2. The development of grafted pear and quince buds in traditional and accelerated tree production is presented in the dynamics.
3. In the quince has been found the most suitable method for producing of suited for grafting awake buds (leaf-bearing buds), as well as the time to make it.
4. It has been established that by applying high agro-technology, the standard pear and quince trees can be produced in a yearling nursery.

Scientific and applied contributions

1. It has been found that the quince rootstocks restarted their active juice movement in spring earlier than rootstocks for other fruit species.
2. In the case of accelerated production, it has been established that, for better interception of the rootstocks at the yearling nursery, they must be planted in the period 15.11-15.12.
3. It was found that the thickness of the rootstocks reached in the bearing (fractions 4-7 and 7-12 mm) does not significantly affect their development in the nursery, since before grafting they increase in thickness and are suitable for its implementation.
4. It is proved that the period 15.07 - 15.08. is best suited for the defoliation of cuttings at quince. During this time the cuttings have the maximum number of leaf and greatly reduced the number of fruit buds, which makes them most suitable for accelerated production of trees.
5. It has been established that in the quince nursery for vegetative rootstock for the production of cuttings, the strong (rejuvenating) winter pruning, as well as the defoliation of skeletal branches or the whole tree, are not suitable for obtaining quality grafts for accelerated tree production.

A confirmatory contributions

1. In the nursery, for vegetative rootstock, the quince rootstocks develop shoots sufficiently suitable for planting in the nursery.
2. The grafted of the same species components are better interception by this one from different species.
3. In the nursery, the trees Popska pear variety have stronger growth than the these Pas Krasan variety.

VII. Critical notes and questions.

1. The illustration would be better if, along with the tables and

figures, the photos of the experimental plants in the different departments of the nursery were attached.

2. My question to the PhD student is related to the accelerated way of producing pear and quince trees, namely - to what extent and in what cases can he find a place in nursery practice?

3. Having in mind that the result of the research has created a new technology for accelerated production of pear and quince trees on quince rootstocks, I recommend the author to patent this innovation.

VII. Published scientific articles.

In connection with the thesis of my colleague Govedarov has published four articles in scientific journals - one in a team in the Journal of Mountain Agriculture on the Balkans and three in the Agricultural Sciences. As a result, the PhD student meets the minimum national requirements and can continue to participate in the procedure for the thesis defense.

The abstract presented objectively the structure and content of the dissertation.

VIII. Personal impressions of the PhD student.

I have known my colleague Govedarov ever since he started working as a lecturer in the Department of Fruit Growing. He subsequently established himself as a qualified teacher and precision researcher. There is an authority among students and teaching staff. It is also highly sought after by the farmers, mainly in connection with the pruning of fruit trees.

CONCLUSION:

Based on the various studied and applied methods of research, the correctly performed experiments, the summaries and the conclusions made, the dissertation submitted meets the requirements of the Law for the development of the academic staff in the Republic of Bulgaria and the Agricultural University. Regulations for its application, which gives me a reason to rate it **POSITIVE**. The notes and recommendations made do not belittle from the dissertation, which has many merits. I allow myself to offer the honorable Scientific Jury also to vote positively and to award George Ivanov Govedarov the educational and scientific degree of "Doctor" in the scientific specialty "Fruit growing"

27.12.2019
Plovdiv

Reviewer:
(Prof. Dr. V. Lichev)