

Scientific opinion



Of the PhD thesis for acquiring the educational and scientific degree 'Doctor' in the doctoral programme 'Fruit Growing', Professional field 6.1. 'Plant growing'

Author of the PhD thesis: Georgi Ivanov Govedarov, PhD student in self –study at Fruit growing department of Agricultural University – Plovdiv

Reviewer: Prof. Dr. Valentina Boncheva Bozhkova from the Fruit Growing Institute – Plovdiv, Professional field 6.1. 'Plant growing' Scientific speciality 'Breeding and Seed production of cultivated plants', member of the Scientific Jury by ordinance № РД -16-1374 от 13.12.2019 of the Rector of the Agricultural University - Plovdiv

1. Actuality of the PhD thesis

Fruit plant propagation material is an important part of modern fruit growing. Improvements in technology for its production are current and economically significant. The topic of dissertation work is in this direction and this makes it relevant and its results applicable in practice.

2. Aim, tasks, research methods

The purpose of the study is not formulated in the thesis. From the title and the statement, it is clear that the purpose of the studies is to explore the possibility of accelerating the production of pear and quince trees on 4 rootstocks. The main tasks related to this are:

1. Studies in mother plantation for rootstocks;
2. Study of rootstocks in a nursery;
3. Study of varietal rootstock combinations in a nursery for production in a traditional and accelerated manner;
4. Preparing of mother plantation of quince cultivars for budsticks.

The study included quince rootstocks: Provence quince, MA, VA 29 and B 12 budded with pear- pear cultivars 'Cure' and 'Passe Crassane' and quince - Asenitsa, Triumph, Hemus. A sufficient number of indicators are included in the methodological aspect to enable the tasks to be achieved. Data were statistically processed.

3. Literature, visualization and presentation of the results

The PhD thesis is written on 113 typescript pages.. The structure of the dissertation follows the requirements for educational and scientific degree 'Doctor'.

The literature review lists 135 titles, 36 of which are in Cyrillic and 99 in Latin. The literature review well reflects the research of the authors cited. It covers 25 pages. The results of the experimental work are presented on 56 pages, which include 25 figures and 29 tables. The tables and figures are well structured and clearly arranged throughout the text. They reflect reported results and dependencies obtained. Presented data are statistically processed. The text is written in good scientific style and the results are presented accurately and clearly.

4. Discussion of the results

The Results and Discussion section includes data from studies carried out in a queen production unit and in a first and second year nursery for traditional production. Data on the accelerated method of tree production make it possible to determine the time of planting the

rootstocks, the time of their budding, as well as the method of preparation of the mother trees of quince cultivars. The results obtained from the two production methods are based on applied statistical processing and are very well interpreted.

As a result of the conducted studies, 13 conclusions were formulated.

5. **Evaluation of the contributions of the PhD thesis**

Based on the received data, 4 contributions of original character, 3 of confirmatory and 3 of scientifically applied character were formulated. The main ones are:

- The duration of soldering of grafted pear and quince buds in the traditional and accelerated production method has been established.

- The dynamics of the development of grafted pear and quince buds in traditional and accelerated tree production are presented in the dynamics. - Quince has been found to be the most suitable method for producing budding grafted buds (leaf-bearing buds), as well as the time to make it.

-It has been found that by applying high agricultural technology, standard pear and quince trees can be produced in a one-year-old nursery.

- In the case of accelerated production, it has been found in the Plovdiv area that for better development of the rootstocks in the one-year-old nursery, they must be planted in the period 15.11-15.12.

- The period 15.07 - 15.08. is suitable for defoliation of quince tree branches (60-100 cm) suitable for budsticks. After 15.08. the fruit buds of the shoots exceed the number of leaf buds.

6. **Critical notes, questions and recommendations**

1. On pages 11 and 23 the OH rootstock is written in lowercase h. It should be capitalized as is the original name of the rootstock.

2. On page 17, the grafting method is once described as a chip, other times under the English name chip budding. Once the Bulgarian term has been adopted, so must it go throughout the text of the dissertation.

3. Page. 26. In the 'Material and Methods' section says that a mother plantation has been created, but it is not explained by which rootstocks. This is further made clear in the text, but it is necessary to mention first in this section.

4. On page 27 is used the term hairy. The plants are known to have no hair and therefore the term is pubescence, as properly used later in the PhD thesis.

5. Table 1 is entitled Vegetation characteristics of the rootstocks under study, probably vegetative you mean.

6. Only averaged data are presented throughout the thesis. No data are available by year to track their variation during the studies. Thus, the influence of climatic factors cannot be taken into account and some scientific information is lost.

7. There is no photo material that would better illustrate the results.

8. **Evaluation of the Author's abstract and the publications on the thesis**

The Author's abstract is designed as required. It is within 32 pages and fully reflects the structure and content of the dissertation. In connection with the dissertation, the PhD student has published 4 articles, in three of which he is an independent author, thus meets the minimum national requirements.

Conclusion

Based on the various research methods learned and applied by the PhD student, the correctly performed experiments and the conclusions drawn, I believe that the presented dissertation meets the requirements of the Law for Development of Academic Staff in the Republic of Bulgaria and Agricultural University Regulations for its application, which gives me reason to evaluate it POSITIVE. I will vote positively for awarding the Doctoral degree to Georgi Ivanov Govedarov in professional degree 6.1. Crop Production, Doctoral Program in Fruit Growing.

I allow myself to offer the venerable Scientific Jury to vote positive too.

06.01.2020
Plovdiv

Signature: 
(Prof, Dr. V.Bozhkova)