



REVIEW

on the thesis for the educational and scientific degree "**Doctor**" in: field of higher education 6.0 Agraricultural Sciences and Veterinary Medicine, professional field 6.1 Crop Science, scientific specialty Fruit growing

Author of the thesis: Todor Donkov Donkov -

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Topic of the dissertation: Research of some varietal rootstock combinations for plums and apricots

Reviewer: Prof. Dr. Valentin Iliev Lichev, Agrariculturyal University, Plovdiv, field of higher education 6.0 Agraricultural Sciences and Veterinary Medicine, professional field 6.1 Crop Science, scientific specialty Fruit growing, appointed as a member of the scientific jury by order No. RD 16 – 777 / 23.06.2026 by the Rector of the Agricultural University-Plovdiv

1. Brief introduction of the candidate.

Todor Donkov was born on 24.02.1996. During the period 2011-2015 he completed secondary education at the "Professor Nikola Marinov" Secondary School in Targovishte. He completed higher education with a bachelor's degree in 2020 at the Agricultural University in Plovdiv, specialty "General Agronomy". He obtained a master's degree in 2021 also at the Agricultural University, specialty of "Fruit Growing - Production and Management of Production". From 2022 to now, he has been a doctoral student in fruit growing at the Agricultural University.

Todor Donkov began his work experience in 2022 at the "Organic Certification Agency" Ltd., Varna, holding the position of "inspector" and

performing expertise on documents in the certification process of farmers.

In 2025, colleague Donkov was appointed as an assistant professor in the Department of "Viticulture and Fruit Growing" at the Agricultural University, Plovdiv, which position he currently holds.

Colleague Donkov uses English at a good level, as well as Word, Excel, Internet, etc.

2. Relevance of the problem.

Testing newly introduced rootstocks in fruit species is a permanent task for many scientific teams around the world, including that of the Department of Fruit Growing at the Agricultural University in Plovdiv. Bearing in mind that Bulgaria lacks sufficiently detailed information about the newly introduced rootstocks Wavit and Ishtara in plum, and also the fact that the rootstocks GF 677 and GXN 15 (Garnem) in apricot have not been tested in our country, I believe that the topic of the dissertation work (which presents results of testing precisely these rootstocks) is particularly relevant in view of the trends in the development of the mentioned crops in our country.

3. Aim, tasks, hypotheses and research methods.

The aim of the study is to obtain detailed information in the nursery and plantation about the Wavit and Ishtara rootstocks in plum, as well as information about the GF 677 and GXN 15 (Garnem) rootstocks in combination with an interstock in apricot and under the specific soil and climatic conditions of Southern Bulgaria.

In order to achieve the aim, the following tasks have been set for resolution:

1. To study the growth characteristics of the Wavit and Ishtara rootstocks in the production of plum trees of three modern varieties in a nursery.

2. To study the growth characteristics of the GF 677 and GXN 15 (Garnem) rootstocks in the production of apricot trees with a Stanley interstock in a nursery.

3. To establish the influence of the Wavit and Ishtara rootstocks on the growth, reproductive and other characteristics of 3 modern plum varieties in a plantation.

4. To determine the influence of rootstocks GF 677 and GXN 15 (Garnem) in combination with interstock Stanley on the growth, reproductive and other characteristics of apricot trees of the Hargrand variety in a plantation.

4. Illustration and presentation of the results obtained.

The thesis is written on 148 typewritten pages and is illustrated with 36 figures, 28 tables and 7 photos.

When reporting the individual indicators, the generally accepted methodology for studying plant resources in fruit growing was used. The experiments were methodologically correctly set out and carried out. The PhD student is familiar with scientific terminology and uses it correctly. The data obtained were statistically processed through variance analysis, which allows reliable and well-founded conclusions to be made.

5. Discussion of the results and used literature.

The structure of the thesis work meets the requirements for the educational and scientific degree of "Doctor". In connection with the literature review and discussion of the experimental results, the prepared very extensive literature reference, including a total of 342 sources, of which 21 in Cyrillic and 321 in Latin, makes a pleasant impression. This shows that the Phd student is very well informed about the problem.

The PhD student is fluent in scientific terminology and uses it correctly. The data obtained as a result of the research are very well analyzed.

6. Contributions of the thesis work.

The main contributions are as follows:

Scientific and applied-scientific contributions of an original nature

- As a result of the study, detailed information was obtained for the first time in Bulgaria on the influence of the rootstocks GF 677 and GXN15 (Garnem) with the Stanley interstock on the development of the apricot variety Hargrand trees in a nursery and plantation.

- For the first time in Bulgaria, detailed information was obtained on the influence of the rootstocks GF 677 and GXN15 (Garnem) with the Stanley intermediate on the course of the flowering phenophase of the apricot variety Hargrand.

Scientific-applied contributions

- The rootstocks Wavit and Ishtara have good compatibility with the plum varieties Chachanska lepotica, Stanley and Yoyo.

- The rootstocks GF 677 and GXN 15 (Garnem) with the interstock Stanley in combination with the apricot variety Hargrand, as well as the rootstocks Wavit and Ishtara in combination with the plum varieties Chachanska lepotica, Stanley and Yoyo do not produce shoots, unlike the seed wild plum, traditionally used in practice for plums and apricots.

- It has been established that the rootstocks GF 677 and GXN 15 (Garnem) with Stanley interstock induce higher fertility on the apricot variety Hargrand, compared to the trees used in our country on a seed wild plum rootstock without an internode.

- The experimental results obtained provide grounds to recommend the rootstocks GF 677 and GXN 15 (Garnem) with Stanley interstock for the production of apricot fruits, as a good alternative compared to the seed wild plum rootstock, commonly used in our practice.

Confirmatory contributions

- The rootstocks Wavit and Ishtara induce weak growth of the plum varieties Chachanska Lepotica, Stanley and Yoyo.
- Regardless of the rootstock used, the flowering of the Yoyo variety begins and ends two to three days earlier compared to the trees of the Chachanska Lepotica and Stanley varieties.

6. Critical notes and questions.

- On page 50 in table 3 it is presented that the interception of the grafted buds in all three plum varieties on the Wavit rootstock is 79-80%, and in the other two varieties it is over 90%. What is the reason for the relatively lower interception rate in the Wavit rootstock?
- The dissertation includes 4 separate experiments, each of which represents a study of certain rootstock-variety combinations in a nursery or in a permanent place. Since there are several experiments, their summary should be with the concept of "studies" and thus the title of the thesis could be formulated more precisely as "Studies", and not as it is written only as "Study".
- Along this line, with a recommendation for précising, are my following notes. In this regard, in the section "Materials and Methods" it is written that the seed rootstock of the wild plum was used, and instead of it in the tables and figures in the section "Results and Discussion" two other names are indicated - Myrobalan or Myrobalan Seedling. It would be better to clarify in the section "Materials and Methods" that the seed progeny of Myrobalan is used as the seed rootstock, and in the following sections of the thesis to use only one of the three options mentioned.
- In the content of the thesis on page 2, only the main sections are listed - introduction, etc. Considering that the dissertation includes 4 separate experiments in a nursery and a plantation, it would be better if at least in the results and discussion section the individual experiments

were presented in separate subsections, which would improve the visualization and access to valuable information by curious students, colleagues and farmers.

Summarizing this section, I definitely claim that the notes and recommendations made, do not belittle the thesis work, which has many merits. The notes aim to help the PhD student increase his precision in presenting the results of his future research work.

7. Published articles and citations.

In connection with the thesis, the PhD student has published three scientific articles in peer-reviewed scientific journals.

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

8. Personal impressions of the doctoral student.

I know Todor Donkov in connection with his activities as a PhD student in the Department of Viticulture and Fruit Growing at the Agricultural University of Plovdiv. From the very beginning, he impressed me with his curiosity, ambition, work capacity and desire to improve himself. Based on my observations, I can assure you that colleague Donkov is a precise researcher, ethical and hardworking. He has the necessary preparation to solve complex tasks. He can definitely be relied on.

CONCLUSION:

Based on the various research methods learned and applied by the PhD student, the correctly conducted experiments, the generalizations and conclusions made, I believe that the presented thesis meets the requirements of the Law on Development of the Academic Staff of the Republic of Bulgaria and the Regulations on Agricultural University for its application, which gives me reason to evaluate it **POSITIVELY**.

I would like to propose that the esteemed Scientific Jury also vote

positively and award Todor Donkov Donkov the educational and scientific degree of "**doctor**" in the scientific specialty "Fruit Growing".

Date: 10.08.2026

Plovdiv

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