

**СТАНОВИЩЕ**

относно научната дейност на кандидата **Янелина Руменова Начева**, доц. д-р, за заемане на академичната длъжност **„Професор“** в област на висше образование **6. Аграрни науки и ветеринарна медицина**, професионално направление **6.1. Растениевъдство**, научна специалност **„Овощарство“**

**Член на научното жури:** доц. д-р **Галия Стоева Добревска**, катедра „Лозарство и овощарство“, Аграрен Университет – Пловдив, научна специалност „Овощарство“, определен за член на научното жури със заповед № РД05-160/22.07.2021г.

**I. Наукометрични показатели на представената научна продукция**

Доц. д-р Начева има обща публикационна продукция от 76 труда, като 2 от тях са във връзка с придобиване на ОНС „доктор“, а с 21 е участвала в конкурс за „доцент“. В настоящия конкурс за „професор“ доц. д-р Начева участва с 53 научни труда, които се групират по следния начин:

1. Публикации в научни издания, реферирани и индексирани в световноизвестни база данни с научна информация – 11 броя;
2. Статии и доклади, публикувани в научни издания, реферирани и индексирани в световноизвестни бази данни с научна информация – 14 броя;
3. Статии и доклади, публикувани в нереферирани списания с научно рецензиране или публикувани в редактирани колективни томове – 27 броя;
4. Публикувана глава от книга – 1 брой.

От тях с IF 1,60 – 1 брой и с SJR – 3 броя с обща сума – 0,56.

Личното участие на доц. д-р Начева в посочените по-горе 52 научни статии е както следва: 1 е самостоятелна, в 13 е първи автор, в 21 е втори, а в 17 – трети и следващ автор. В посочената глава от книга е самостоятелен автор.

От представените научни статии на кандидата 8 (15,4%) са отпечатани в чуждестранни списания, 10 (19,2%) са публикувани в български издания и 34 (65,4%) са докладвани на международни симпозиуми и конференции, проведени у нас и в чужбина.

Доц. д-р Начева участва като съавтор в книгата „Ябълка“, където е самостоятелен автор на една глава – „Биотехнологични подходи при размножаването и селекцията на ябълка“.

## II. Основни направления в изследователската дейност на кандидата и най-важни научни приноси

Основната научноизследователска дейност на доц. д-р Начева е свързана с експериментиране и оптимизиране на различни условия на *in vitro* култивирането на овощни, декоративни и лечебни видове. Проучван е газообменът с околната среда и свързаните с това ефективност на фотосинтеза, транспирация и натрупване на по-голяма биомаса. Анализирани са ефективност на светодиодното осветление и ефективността му върху *in vitro* култивирането. Работено е с различни въглехидратни източници в хранителната среда. Цялата тази изследователска дейност е в полза на изучаване на генетичните ресурси и опазване на биоразнообразието на редица овощни и декоративни образци, които се поддържат в *in vitro* генбанката на научната лаборатория по растителни биотехнологии на Институт по овощарство – Пловдив.

Доц. д-р Начева участва и в експеримент, при който за първи път е установено, че методът за присаждане „Топъл калус“ може успешно да бъде прилаган при вегетативно размножаване на ценни декоративни форми.

Част от изследователската ѝ работа е посветена на установяване на оптимални параметри за съчетаване на *in vitro* техники с термотерапия и хемотерапия за елиминирание на някои икономически важни вируси при ябълката, както и разработване на моделна система с *in vitro* и *ex vitro* растения за проследяване влиянието на почвени хербициди върху растежа на овощни видове и подложки. Разработени са методи за дезинфекция чрез самостоятелно или комбинирано въздействие със сребърен нитрат, хлорхексидин диглюконат и/или калциев хипохлорит. Разработена е моделна система за третиране на *in vitro* тъкани със студена атмосферна плазма, а също - за първи път в България са адаптирани методи за анализ на хлорофилната флуоресценция при *in vitro* и *ex vitro* условия.

Много от методичната част на експериментите (заради получените отлични резултати) може със сигурност да се прилага в производството. Такива са: установените оптимални параметри за вкореняване на *in vitro* микрорезници от декоративни, използване на биоторове и биостимулатори с естествен произход при адаптация на крушови подложки, обогатяване на хранителни разтвори при адаптация на черешови подложки, предсеитбено третиране на семена от декоративни видове с растежни регулатори за по-добрата им кълняемост, обогатяване на почвени субстрати с торове с контролирано освобождаване при *in vitro* размножени декоративни.

**III. Значимост на получените резултати** (цитируемост и разпознаваемост на кандидата в научните среди)

В резултат на проведената изследователска работа и публикуваните материали са установени 71 цитирания, като от тях: 19 - в научни издания, реферирани и индексирани в световноизвестни база данни с научна информация; 15 - в монографии и колективни томове с научно рецензиране; 37 – в нереперирани списания с научно рецензиране.

**IV. Инициативност и умения за ръководене на научни изследвания. Допълнителни дейности** (експертна дейност, участие в редакционни колегии, преподавателска активност, обучения и специализации и др.)

Доц. д-р Начева има участия в 22 национални и 5 международни, както и ръководството на 4 международни научни проекта. Освен това тя е извела лекционен курс по „Растителни биотехнологии“, практически занятия по „Цветарство“ и „Биохимия“ в АУ - Пловдив със студенти от бакалавърска степен. Била е научен ръководител на 3 дипломанти и в съвместно ръководство има защитили 2 докторанти към АУ – Пловдив. Била е председател на общото събрание на учените, член на организационен комитет на международен форум, участвала е в научни и експертни съвети към ССА, била е председател на Научния съвет на ИО – Пловдив, била е член на научно жури в няколко конкурса за ОНС „Доктор“ и академични длъжности, изготвила е 1 рецензия в реферирано и 2 в нереперирани издания.

**V. Критични бележки, въпроси и препоръки към кандидата**

Нямам критични бележки, въпроси и препоръки към кандидата.

## **ЗАКЛЮЧЕНИЕ**

Представените за участие в конкурса документи показват, че научноизследователската, научноприложната и публикационна дейност на доц. д-р Начева отговаря на изискванията на ЗРАСРБ и Правилника за условията и реда за придобиване на научни степени и за заемане на академични длъжности в ССА.

Това ми дава основание да оценя положително цялостната дейност на кандидата и да предложа доц. д-р Начева да се назначи на академичната длъжност „Професор“ в област на висше образование 6. Аграрни науки и ветеринарна медицина, професионално

направление 6.1. Растениевъдство, научна специалност „Овощарство“ в научен отдел Селекция, генетични ресурси и биотехнологии на Институт по Овощарство – Пловдив.

Дата: 10.09.2021 г.

**ИЗГОТВИЛ СТАНОВИЩЕТО: .....**

(доц. д-р Галя Добревска)

## FORMAL OPINION

on the research activity of the candidate Lilyana Rumenova Nacheva, Assoc. Prof. PhD., for holding the academic position "Professor" in the field of higher education 6. Agricultural Sciences and Veterinary Medicine, professional field 6.1. Plant growing, scientific specialty "Fruit growing".

**Member of the scientific jury:** Associated Professor PhD Galya Stoeva Dobrevska, Department of Viticulture and Fruit Growing at the Agricultural University, Plovdiv; major "Fruit Growing", appointed as a member of the scientific jury based on issued order # RD-05-160/22.07.2021

### **I. Scientometric indicators of the provided academic output**

Assoc. Prof. PhD Nacheva has a total of 76 published studies, 2 of which have been developed in relation to the obtaining of her PhD degree, while other 21 have been used for the competition associated with the title of Associated Professor. In the current competition for the title "Professor", Assoc. Prof. PhD Nacheva participates with 53 publications, which are classified as follows:

1. Publications in scientific journals, referenced and indexed in a world-famous database with scientific information - 11 papers;
2. Articles and reports published in scientific journals, referenced and indexed in world-famous databases with scientific information - 14 papers;
3. Articles and reports published in non-refereed journals with scientific review or published in edited collective volumes - 27 papers;
4. Published chapter of a book - 1 issue

Among them, 1 has impact factor above 1.60, whereas 3 studies have scientific journal ranking. The total sum is 0.56.

The personal participation of Assoc. Prof. PhD Nacheva in the above-mentioned 52 scientific articles is as follows: in 1 paper she is an independent author, in 13 she is the first

author, in 21 she is the second, and in 17 she is the third and subsequent author. In the mentioned chapter of the book, she is an independent author.

Among the submitted scientific articles of the candidate, 8 (15.4%) are published in foreign journals, 10 (19.2%) are published in Bulgarian issues and 34 (65.4%) are reported at international symposia and conferences held in Bulgaria and abroad.

Assoc. Prof. PhD Nacheva participates as a co-author in the book "Apple" where she is an independent author of one chapter - "Biotechnological approaches in the reproduction and selection of apples."

## **II. Main directions in the research activity of the candidate and most important scientific contributions**

The main research activity of Assoc. Prof. PhD Nacheva is related to experimentation and optimisation of different conditions of *in vitro* cultivation of fruit, ornamental and medicinal species. The gas exchange with the environment and the related efficiency of photosynthesis, transpiration and accumulation of larger biomass have also been studied and researched. The efficiency of LED lighting and its efficiency on *in vitro* cultivation was also assessed. Different carbohydrate sources in the nutrient environment have been used in the study. All this research is in favour of studying the genetic resources and conservation of biodiversity of a number of fruit and ornamental samples, which are maintained in the *in vitro* gene bank of the Scientific Laboratory of Plant Biotechnology of the Institute of Fruit Growing – Plovdiv.

Assoc. Prof. PhD Nacheva also participates in an experiment in which it is found for the first time that the method of grafting "Warm Callus" can be successfully applied in the vegetative reproduction of valuable decorative forms.

Part of her research is dedicated to establishing optimal parameters for combining *in vitro* techniques with thermotherapy and chemotherapy to eliminate some economically important viruses in the apple, as well as developing a model system with *in vitro* and *ex vitro* plants to monitor the impact of soil herbicides on the growth of fruit species and rootstocks. Methods for disinfection by single or combined treatment with silver nitrate, chlorhexidine digluconate and/or calcium hypochlorite have been developed. A model system for *in vitro* treatment of tissues with cold atmospheric plasma has been developed, and also - for the first

time in Bulgaria, methods for analysis of chlorophyll fluorescence under *in vitro* and *ex vitro* conditions have been adapted.

Many of the methodical part of the experiments (because of the excellent results obtained) can certainly be applied in production. Examples include: the established optimal parameters for rooting of *in vitro* micro-cutters from ornamental micro-cutters; the use of biofertilizers and biostimulators of natural origin in the adaptation of pear rootstocks; enrichment of nutrient solutions in the adaptation of cherry rootstocks; pre-sowing treatment of seeds of ornamental species with growth regulators aiming at their better germination; enrichment of soil substrates with controlled-release fertilizers in *in vitro* reproduced ornamentals.

### **III. Significance of the obtained results (citation and recognizability of the candidate in the scientific community)**

As a result of the conducted research and academic work, as well as the published materials, 71 citations have been made, of which: 19 - in scientific publications, referenced and indexed in a world-famous database with scientific information; 15 - in monographs and collective volumes with scientific review; 37 - in unrefereed journals with scientific review.

### **IV. Initiative and skills for conducting research. Additional activities (expert activity, participation in editorial boards, teaching activity, trainings and specializations, etc.)**

Assoc. Prof. PhD Nacheva has participated in 22 national and 5 international, as well as in the management of 4 international research projects. In addition to that, she has conducted a lecture course on "Plant Biotechnology", practical classes on "Floristry" and "Biochemistry" at the AU - Plovdiv with undergraduate students. She has been the scientific supervisor of 3 graduate students and in a joint management she supervised 2 doctoral students at the AU - Plovdiv. She was a chairman of the General Assembly of Scientists, a member of the organizing committee of an international forum, participated in scientific and expert councils at the AA, has been a chairman of the Scientific Council of IH – Plovdiv, was a member of a scientific jury in several competitions for PhD degrees and academic positions, has prepared 1 review in a refereed edition and 2 in non-refereed editions.

## V. Critical remarks, questions and recommendations to the candidate

I do not have any critical remarks, questions and recommendations to the candidate.

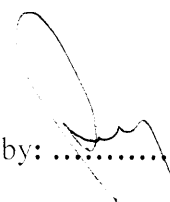
## CONCLUSION

The provided documents reveal that the research, applied science and published work of Assoc. Prof. PhD Nacheva is fully compatible with the requirements of LDASRB and the Code of terms and conditions for obtaining scientific degrees and for holding academic positions at AA.

This allows me to evaluate positively the overall activity of the candidate and to propose Assoc. Prof. PhD Nacheva to be appointed to the academic position "Professor" in the field of higher education 6. Agricultural Sciences and Veterinary Medicine, professional field 6.1. Plant growing, scientific specialty "Fruit growing" in the scientific department Selection, genetic resources and biotechnologies of the Institute of Fruit Growing - Plovdiv.

10.09.2021

The formal opinion is developed by: .....



(Assoc. Prof. PhD Galya Dobrevska)



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10.09.2021

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(Assoc. Prof. PhD Galya Dobrevska)