29.10.2025г.

Recension

on a competition for the academic position of "Professor" in

in the field of higher education for the needs of the Department of "Plant Production", Faculty of Agriculture at TU-Varna. 6. "Agrarian Sciences and Veterinary Medicine", in the professional field 6.1. "Plant Production", specialty "Soil Science",

announced in the State Gazette No. 60 of 25.07.2025
with candidate Assoc. Prof. Dr. Pavlina Naskova Atanasova
(academic position, scientific degree, full name)
Reviewer Prof. Dr. Ivan Dyankov Pachev
(academic position, scientific degree, full name)

1. General information and biographical data Assoc. Prof. Dr. Pavlina Naskova Atanasova was born on 28.05.1976. She is currently the Deputy Rector for "Administrative and Business Activities" (ADB) of the Technical University - Varna for the term 2023 2027. Management of economic and administrative activities at the Technical University - Varna. Director of the Directorate "International Activities and Foreign Students" during the period 2019 2022. Activities related to the internationalization of the university and the management of the education of foreign students From 2012 to the present. Works at the Technical University of Varna, engaged in teaching and research activities. From 1990 to 1995 she studied at the Third High School of Natural Sciences and Mathematics "Academician Metodiy Popov" in Varna. After 1995 until June 2000 she studied at the Technical University of Varna where she graduated in Ecology; Soil pollution and ecosystem protection; Agroecology; Water pollution and ecosystem protection; Industrial ecology; Transport ecology; Air pollution; Methods and tools for ecological expertise; Ecological monitoring; Human ecology; Protected natural areas and genetic protection; Ecological territorial organization; Ecological management; Treatment of solid household waste; Marine ecology; Ecology of animal husbandry; Modeling and management of ecosystems and the environment:
From 2012 to the present, he has been working at the Technical University of Varna, mainly in teaching and research activities. Assistant, PhD. He is a lecturer in the following disciplines: Bachelor students in the specialty "Agronomy": Botany - 1 part, Botany - 2 part, General microbiology, Ecology, Technologies for restoration of damaged soils, Landscape science and landscaping, Soil science, Bachelor students in the journal "Engineering Ecology": Soil pollution and purification technologies Master students in "Production of seed and planting material": Ecological safety of plant production, Chemical pollutants and control methods Master students in "Seed production and plant protection": Ecological safety of plant production, Chemical pollutants and control methods Master students in "Chemical mechanical engineering", discipline "Chemistry and technology of oil and gas" He is fluent in written and spoken English and Russian. He has computer skills - MS OFFICE FOR IBM (WORD, EXCEL, POWER POINT), INTERNET APPLICATIONS. He is a member of expert groups in the NEAA (National Agency for Assessment and Accreditation) and participates in the accreditation of doctoral programs in higher education institutions and scientific organizations. He participates in over 20 projects. As a project manager for two. Participation in the preparation of documents for accreditation of the professional field 6.1 "Plant Production" of the specialty "Agronomy", TU-Varna as

well as in the preparation of documents for accreditation of the doctoral program in the field 6.1. "Plant Production".

2. General description of the submitted materials The candidate has submitted for review a total of 29 scientific papers, 2 books, textbooks and teaching aids and a list of 3 scientific research papers. A total of 34 scientific papers are accepted for review, which do not repeat those submitted for the acquisition of the ONS "Doctor", the scientific degree "Doctor of Sciences" and for holding previous academic positions. There are 21 cited scientific papers. He is the supervisor of 4 doctoral students, two of whom have defended their theses. Participation in national scientific and educational projects. Participation in international scientific and educational projects. Published university textbook and two teaching aids. The results by group of indicators are as follows: Group A – 50 points out of the required 50 points. Group B – 100 points out of the required 100 points. Group D – 329.85 points out of the required 200 points. Group E – 315 points out of the required 100 points. In total, by groups A+B+D+E out of the required 550, it fulfills 1014.85 points, i.e. it fulfills almost twice the scientometric requirements for occupying the academic position of "PROFESSOR".
3. General characteristics of the candidate's research and applied science activities. 1. MANAGEMENT OF HEAVY METAL POLLUTION OF NATURAL, AGRO AND URBOECOSYTEMS" - presents a general model for the management of heavy metal pollution of natural, agro and urban ecosystems. The relevance of the problem is determined by the growing role of the ecological approach in the development of the economy of the European Union and of our country as a part of it. The use of mathematical modeling is of paramount importance in solving problems related to environmental protection. 2. MODELING OF THE DYNAMICS OF ORGANIC SUBSTANCES AND HEAVY METALS IN SOIL" - considers problems related to processes in the soil, presenting mathematical solutions to specific problems related to: forecasting and management of the content of heavy metals in soil-plant systems, dynamics of organic substances in the soil horizons, experimental determination of the abundance of microbiological activity, analysis and criteria for assessing the factors influencing the abundance of soil microflora.

   The publications presented can be divided into group G-7 and group G-8.
   As in G-7, there are 21 publications and two official notes certifying that the articles were accepted but not printed. The articles were published mainly in Journal of Mountain Agriculture on the Balkans, Plant Science, Analele Universităţii din Craiova, Journal of Microbiology, Biotchnologye and Food Science, Scientific Papers. Series A. Agronomy, Scientific Papers. Series B, Horticulture, Soil Science, Agrochemistry and Ecology, Agricultural Science and Technology. Of the scientific papers submitted by the candidate for review, he is the sole and first author of 12, second author of 9, and third and fourth author of 2. The influence of fertilization methods on the productivity and quality of winter common wheat was studied. The grain yield (GY) and its structural elements were determined. It has been established that fertilization has a strong influence on the productivity and grain quality of winter common wheat (both alone and in combination with growing conditions). The method of fertilization has an influence on the productivity of winter common wheat - foliar fertilization during the spring vegetation (in the tillering and reed formation phases) increases grain yield as a result of an increase in each of the productivity components. The method of fertilization does not have a significant influence on the quality indicators of winter common wheat, with the exception of the hectoliter mass, the values of which are proven to be higher with soil fertilization. The two studied Bulgarian varieties, Sladuna and Nikodim, differ from each other in their effectiveness in relation to the method of fertilization in the spring.

In the case of short-term monoculture (for a period of three years), the independent effect of the conditions of the year is most pronounced on the formation of grain yield, with the applied fertilization having the greatest impact on the protein content in wheat grain. The combination of meteorological conditions during the first two years of the study was more favorable and wheat formed higher productivity. Lower amounts of precipitation, their uneven distribution and higher temperatures during the vegetation period of the third studied year led to a decrease in the formed grain yield. The combined application of soil fertilization and foliar feeding during the spring vegetation is most favorable for the formation of maximum productivity and high protein content in wheat. When fertilizing wheat, the biogenicity of the soil increases most strongly with normal soil fertilization with urea and ammonium nitrate and foliar application of Zn and Bacillus subtilis. The biogenicity of the studied soils is higher when growing corn, pioneer hybrid compared to corn, hybrid "Method". In the fertilizer variants of corn, pioneer hybrid, the highest biogenicity of the soil is when fertilizing with ammonium nitrate and foliar application of Zn, Bacillus subtilis and Neem, and the lowest only when fertilizing with ammonium nitrate. In the fertilizer variants with corn, pioneer hybrid, the highest biogenicity of the soil is when fertilizing with ammonium nitrate and foliar application of Zn, Bacillus subtilis and Neem, and the lowest only when fertilizing with ammonium nitrate. The studied enzyme activities increase with fertilization, more clearly expressed for cellulase compared to catalase, with the values for wheat and corn being close. (7.1; 7.6; 7.9; 7.22;)

The influence of the mineral fertilizer YARA on the biomass, productivity and quality indicators of winter wheat grain was studied. The experiment was conducted with three fertilization options. Pre-sowing application was carried out with Yara Mila Triple (16% N, 16% P2O5, 16% K2O) and double nitrogen feeding with Yara Vera Amidas (40% N, 14% SO3) and Yara Bela Sulfan (24% N, 15% SO3, 11% CaO). Higher productivity, hectoliter weight and protein content in the grains were established in the harvest from field I (the highest dose of nitrogen fertilization), which confirms the leading role of the macroelement as a yield factor. (7.14) A fertilizer experiment was conducted with the mineral fertilizers Yara Mila Triple (16% N, 16% P2O5, 16% K2O), Yara Vera Amidas (40% N, 14% SO3) and Yara Bella Sulfan (24% N, 15% SO3, 11% CaO). The Avenue variety of common winter wheat was used. The fertilizer products used increased the biogenicity of the soils and the rearrangement of individual groups of microorganisms in the composition of the general microflora - by reducing the amount of non-spore-forming bacteria at the expense of the development of bacilli, actinomycetes and micromycetes. The increase in mineral nitrogen compounds in the soil during the maturity phase to some extent inhibited the development of microorganisms, but not their mineralization activity.

An analysis of the antibacterial activity of plant extracts of basil and thyme against Escherichia coli was carried out for their subsequent application in agricultural practice as additives for decontamination and deodorization of compost-like mixtures. Plant extracts from roots, stems, leaves and whole plants of basil and thyme were obtained by various methods: decoction, tincture, medicinal vinegar, medicinal wine and medicinal oil. An agar-diffusion method was used to determine the antimicrobial activity of the extracts against Escherichia coli. In conclusion, it can be said that the analyzed essential oil cultures can be applied for decontamination (against Escherichia coli) and deodorization of compost-like mixtures. The use of basil and thyme extracts decontaminated composts from E. coli content after repeated 4-month application. (7.2)

The positive antimicrobial activity against the pathogenic microorganism E. coli was reported for all variants of coriander extracts, differing for individual parts of the

plant and individual extract variants. Root and whole plant extracts showed higher antimicrobial activity compared to leaf and stem extracts. (7.11)

During the organic cultivation of coriander in greenhouse conditions, soil microbiological and agrochemical indicators were analyzed, as the main indicators of good plant development, studied for antimicrobial activity against E. coli, by testing different variants of plant extracts (decoction, tincture, medicinal wine, medicinal vinegar, medicinal oil). The results of the agrochemical analysis showed that coriander had no significant effect on the dynamics of macronutrients in the soil, while the biogenicity and activity of the enzymes cellulase and catalase increased in soils with coriander culture compared to the control without vegetation. Positive antimicrobial activity against pathogenic microorganisms E. coli was reported for all variants of coriander extracts, differing between individual parts of the plant and individual variants of extracts. (7.12)

The conditions for the production of extractive solutions against pathogenic microorganisms with different plant species and extraction technologies were studied. The object of the study were extracts and oils obtained from different fractions (roots, leaves, stems, whole plant) of six plant species (mint, lavender, thyme, oregano, basil, coriander) using different solvents (water, ethanol, vinegar, wine, olive oil), grown in greenhouse conditions, and statistical processing of the obtained 360 databases for their antimicrobial activity against Escherichia coli. The results of the conducted complex studies are a good basis for the introduction of practically applicable technologies for the production of extractive solutions with high antimicrobial activity against Escherichia coli. (7.17)

The foundations have been laid for the compilation of models for studying the antimicrobial properties of essential oil crops with a view to developing technologies for combating pathogenic microflora. Plant extract solutions of coriander, mint, lavender, basil, thyme and oregano have been studied against the pathogenic microorganisms: Salmoella enterica, Listeria manocytogenes, Escherichia Coli, Staphylococcus aureus and Clostridium perfringens, with therapeutic effect. (7.19)

The influence of individual plant parts on the growth of tomatoes and cucumbers was monitored. The strongest positive effect on tomatoes was observed when using a decoction of mint stems, in which the root length reached 7.5 cm, and the biomass of the root - 0.150 g. In cucumbers, the strongest effect was observed with a decoction of basil roots, in which the root length reached 10.8 cm, and the above-ground part - 13.2 cm. Tinctures of mint, basil, oregano and coriander also have a positive effect on the growth of tomatoes and cucumbers. When applying medicinal wine of mint stems to tomatoes, a root length of 8.4 cm and a biomass of 0.018 g was recorded. In cucumbers, after applying an extract of medicinal wine with mint leaves, the root length was measured - 10.6 cm and biomass 0.089 g. Medicinal vinegar also has a positive effect on growth performance. Oil filtrates of oregano, basil and coriander improve growth performance. Extracts of essential oil crops have a positive allelopathic effect on the growth of tomatoes and cucumbers. (7.20)

The composition of the microflora and the antibacterial effect against Escherichia coli of plant extracts from different parts of Lavandula angustifolia and with different solvents were determined to determine options to be used as microbial additives for enrichment with beneficial microflora, decontamination and deodorization of compost contaminated with E. coli. The antibacterial effect against Esherichia coli for three tested strains (NMIMCC 3397 (WDCM 00012; ATCC 8739), NMIMCC 3398 T (WDCM 00090; ATCC 11775), NMIMCC 8905 (ATCC 35218)) is similar for individual plant parts and the same for whole plant variants. Lavender extracts, a medicinal vinegar variant (individual plant parts and whole plant), as well as a whole plant decoction variant, show stronger antibacterial activity against Escherichia coli. The tested extracts from the lavender plant (best decoction variant, whole plant) can be applied as microbial additives, disinfectants against Escherichia coli and compost deodorizers. (7.3)

Additionally, microbiological and enzymatic activity of laterite soils from Abia State, Nigeria was studied. In the conditions of tropical monsoon climate and low supply of basic nutrients (nitrogen, phosphorus, potassium), the biogenicity of the studied soils from Abia State, Nigeria, is relatively good for the successful development of agricultural crops typical of the region. The biogenicity of the soil samples in the upper soil layer is highest at Abriba and Igoeke, and the lowest at Agubi Ogbarali, with the amount of microorganisms decreasing in the depth of the soil. For the lower soil layers, the biogenicity is highest at Uzuakoli, followed by Ohafia, and the lowest amount of microorganisms is at AGA Umuaweji..(7.21) The allelopathic effect of extracts from essential oil plants on the germination of cucumber was studied. Different parts of the plants affect the germination of cucumber seeds in different ways. The highest percentage (100%) of seed germination was recorded for the oregano plant in all variants of plant extracts, followed by coriander (in medicinal vinegar) and basil (in medicinal wine). For the other extracts, the strongest influence on the germination percentage was exerted by the individual parts of the plant alone or in combinations with leaves, stems and roots. (7.16)

Not the least important in the work of the candidate Assoc. Prof. Naskova are the issues of protecting the environment and the urban environment from pollution. One of the main environmental problems of the existence and development of modern cities is the recycling of domestic and industrial wastewater. Wastewater sludge accumulates on the territory of the treatment plant, which is a multicomponent mixture of organomineral substances. The main directives and regulations related to the use of sludge in agriculture in the European Union and Bulgaria are presented. Data on sludge used in agriculture in European countries are presented. The benefits and risks of introducing sludge into the soil and their impact on soil microflora are analyzed. (7.13)

Modeling a system for disinfection and utilization of sludge from a wastewater treatment plant requires a study for the presence of pathogenic and non-pathogenic microflora. Disinfection can be carried out by applying lime treatment (10%, 20%, 30% lime) with two types of plant matter – lavender (Lavandula) and basil (Ocimum). The results obtained after the treatment of the sludge regarding the amount of microflora in them were studied for the presence of a correlation between the concentration of the lime solution and the amount of microorganisms. The results obtained show a strong correlation between the studied quantities. This gives grounds to search for a mathematical model to describe the amount of microflora in the sludge. For this purpose, additional factors – temperature, humidity and pH – were added. Regression equations for the different disinfection methods are presented. The results give grounds to claim that most of them can be successfully used to determine the amount of microflora in the studied sludges with known data on the concentration of the solution, temperature, humidity and pH. (7.10)

The migrations of cadmium in the soil and its transport in the plant-animal-human food chain have been traced. Some of its negative effects on the human body and symptoms of poisoning have been described. (7.17)

Another important problem that concerns the researcher Assoc. Prof. Naskova is the recycling and disposal of urban waste, which is a major problem in modern urban reality. The composting process is considered to be a cost-effective and environmentally friendly method for processing organic residues and is one of the ways to achieve these goals. The decay of materials during composting follows the general biochemical pathways of any other decomposition process. In the composting processes and in the finished compost, the main share in the composition of the total microflora is occupied by non-spore-forming bacteria and bacilli, which are most actively involved in the initial stages of degradation of organic substances. The proportion of actinomycetes and micromycetes, which are generally more active in the final stages of decomposition of organic matter, is smaller.

The amount of actinomycetes increases with increasing temperature in the composting phases. The biogenicity of the compost depends on the type of biodegradable agricultural waste used. (7.4)

Another important problem that Assoc. Prof. Naskova is interested in is the statistical

evaluation of the results of agrochemical soil studies. Results of agrochemical soil analyses of six studied plant species (coriander, mint, basil, thyme, lavender, oregano) are presented for six indicators (humidity, pH, NH4, NO3, P2O5, K2O) under two types of conditions - greenhouse and vegetation cell. In order to study the hypotheses of statistical distinguishableness or indistinguishableness of data obtained from soil samples with vegetation grown in two different environments: a greenhouse and a vegetation cell and the formation of observation vectors with high information value by rejecting the weakly informative or disturbing species or indicators. The hypotheses of uniformity of the indicators from the group of the studied and rejection of the disturbing control indicators and verification of hypotheses of equality of two mathematical expectations were tested. The implementations of the algorithm for each of the tests performed are presented. The achieved confidence probability is over 95%, which is a good prerequisite for using the statistical estimates of the indicators in quality control of the studied plant species in their application for medical purposes. (7.5)

Increasing crop productivity, effective and limited use of fertilizers, plant protection products, as well as increasing the resistance and adaptation of plants to adverse agroclimatic conditions and anthropogenic impacts are of particular importance for agriculture. Microbiological approaches and techniques based on the use of the potential of soil microorganisms, as well as the biological mechanisms of interaction between the components of plant-microbial systems, are of particular importance for solving these problems. The development considers various types of rhizosphere microorganisms and their functions in the agrobiological outpost. (7.8)

Summing up the scientific and applied research of this group, I believe that they have served as the basis for the creation and analysis of multifactor models describing the dynamics of fertilization, microbiological and enzymatic activity of soils in various urbanized, agro and natural ecosystems.

The overall score for group 7 – 258.75

The articles from group 8 are published in Technical University Varna – Yearbook, Proceedings of the Union of Scientists in Bulgaria – Varna Branch. The influence of fresh sludge from a sewage treatment plant was studied, with quicklime concentrations: 10%, 20% and 30% for a 40-day composting period. Lowering the pH during the study period leads to the re-development of pathogenic microflora. At the same time, creating an alkaline environment leads to a decrease in the amount of beneficial microorganisms. Reducing moisture and drying the sludge during the study period show a weaker effect on the dynamics of the microflora compared to the effect of increasing the pH. Planting lavender and basil alone in the sewage treatment plant sludge samples has a beneficial effect (slightly better in the lavender variants) for increasing the amount of non-pathogenic microbes and reducing the frequency of pathogen occurrence. The effect increases with increasing plant development period. Publication G-8.6

The importance of green spaces in urban areas is examined in various aspects of their impact on the quality of the urban environment. The challenges associated with the construction and maintenance of green infrastructure are indicated, and they are analyzed through the prism

of modern trends in urban development. Possibilities for ensuring systematic monitoring and management of green plantations in urban areas are examined based on modern technological solutions that ensure reliability and sustainability in their creation and maintenance. Publication G-8.7

A study was conducted in the search for herbal medicines that possess certain antimicrobial activity. Extracts and oils obtained from different plant fractions of oregano (roots, leaves, stems, whole plant) and with the help of various solvents (water, ethanol, vinegar, wine, olive oil), grown in a vegetation cell and under greenhouse conditions, were studied. It was found that the antibacterial activity against Escherichia coli is the same as the studied plant fractions. The studied oregano extracts can be used for decontamination of compost and other substrates in which Escherichia coli is found. To determine dependencies and trends among the experimental data, mathematical statistics tools were used. Publication G-8.1

In a field experiment in the experimental field of TU-Varna, the influence of foliar fertilizers on the productivity and quality of Dekalb corn hybrids was monitored. Combined soil and foliar fertilization leads to increased productivity, with the highest values being obtained with the variant ammonium nitrate (dose 12 kg/da) + 250 ml/da NPK 2.5 SO3 with a composition of 3.0 N; 1.5 P; 10 K; 2.5 SO3 + 250 ml/da SO3 10% Zn, 3% N (sulfides with zinc and nitrogen). Publication D-8.2

The consideration of hydroponic systems is dictated by the need for rational use of natural resources in every aspect of food production, which requires the creation of production models through which to fix the main elements affecting environmental protection. The schemes and operation of the following hydroponic systems are considered - wick system, ebb and flow, thin film technology, water culture, aeroponics, drip hydroponics, aquaponics. Publication G-8.3

Providing the population with high-quality environmentally friendly food products requires sustainable economic development of agriculture. By implementing modern and contemporary scientific achievements. The article examines the advantages, disadvantages and types of vertical systems used in agriculture. Vertical farming is a new practice for food production, which aims to meet the food needs of the growing population of the Earth. Vertical farms allow to obtain quality production on a small area. Publication G-8.4

The article focuses on the methodology for integrating risk management in the occurrence of fires in natural and urban ecosystems. This methodology is essential due to the growing importance of environmental protection. The study includes an algorithm that covers methods for assessing the risk of fires in natural and urban ecosystems, the theoretical foundations of risk management and their implementation in practice. Publication G-8.5

An engineering analysis has been carried out showing the scale, causes and consequences of pipeline accidents leading to pollution of the atmosphere, soil and water, as well as changes in the Earth's climate and the chemical composition of the oceans. The analysis shows the influence of physical factors (operation time, diameter and wall thickness of the pipeline, strength of materials) and environmental factors, as well as their relationship with cause-and-effect factors. On this basis, the consequences of the incidents in terms of the number of accidents, injuries, deaths and total economic losses are shown. Publication G-8.6

The total number of points from group G-8 is 329.85 out of the required 200 points

4. Assessment of the candidate's pedagogical preparation and activity. Presents a curriculum for the discipline "Chemical Pollutants and Methods and Control"; Curriculum for the discipline "Chemistry and Technology of Oil and Gas";
Curriculum for "General Microbiology"; Curriculum for "Ecology";
Curriculum for "Ecological Safety of Plant Production";
Curriculum for "Botany 1 and 2 Parts" Assoc. Prof. Dr. Pavlina Naskova developed and conducted lectures and exercises on Botany 1 and 2 Parts, General Microbiology, Ecology, Technology of Damaged Soils and Landscape Science and Greening for students from various courses.
The students studying for the Master's degree program were given laboratory exercises on "Chemical Pollutants and Control Methods" and "Ecological Safety of Plant Production". Which show the breadth of the candidate's teaching work.

According to Appendix 4a. with a required score of 230 points, the candidate presented 489.22 points, which exceeds the requirements twice. She is the supervisor of five graduate students. Assoc. Prof. Naskova is the supervisor of four doctoral students and two doctoral students.

Participation in 6 mobility programs under the Erasmus+ program Participation and leadership of 8 internal projects funded specifically by the state budget.

5. Main scientific and applied scientific contributions.

A. Scientific contributions consisting in proving with new and improved means new and significantly important aspects of existing scientific areas, problems and hypotheses, and proposing on this basis new methods for research, forecasting and management of processes in soil ecosystems.

1. Using the mathematical tools of multivariate probabilistic analysis, mass service systems and the adoption of optimal solutions, an imitation model of the movement of organic substances and heavy metals in soils of characteristic areas and conditions has been developed. Publication C.3, D.6

2. A general model for the management of heavy metal aerosol pollution in natural agro- and urban ecosystems has been developed. A theoretical novelty in the compilation of the model is the unification of experimental methods for direct measurement of the content of the studied indicator (lead, cadmium and others) with probabilistic statistical approaches for pattern recognition in a general model for the assessment and forecasting of open or closed ecosystems. Publication C.3, D.6.

3. A comprehensive approach and toolset have been developed for assessment, forecasting and management of various processes in ecosystems and agriculture Publications C.3, D.6, D.7.1, D.7.7, D.8.1, D.8.6.

4. A comprehensive approach, general model and technologies for the production of extractive solutions with different raw materials, technological and production conditions have been developed Publications D.7.2, D.7.3, D.7.11, D.7.12, D.7.16., D.7.18, D.7.19, D.7.20.

5. A complete model for digitalization in agriculture has been developed, representing a platform of experiments, agro and bio analyses, software for statistical processing, hypothesis testing, recognition and forecasting of the state of soil ecosystems. Publications C.3, D.6, D.7.1, D.7.5, D.7.7, D.8.1.

B. Applied scientific contributions

B'. Applied scientific contributions, implemented in the monograph submitted for participation in the competition and in the book based on the defended dissertation work:

1. Developed and implemented models for the distribution of the amount of heavy metals by soil horizons.

2. Developed and implemented models for statistical analysis of the distribution of heavy metals depending on the distance to the source of pollution.

3. Experimental assessment of the distribution of factors determining the dynamics of organic matter in the soil by horizons.

4. Methodology and criteria for assessing the factors influencing the abundance of soil microflora by dispersion analysis

5. Determining the degree of influence of physicochemical factors on the abundance of the total microflora by correlation and regression analysis

6. Determining and predicting soil microbiological activity by statistical algorithms for recognition by indirect signs. Publication B.3

B Scientifically applied contributions, reduced to proving new and confirmatory facts based on known or improved Methods and methodologies in the works submitted for review

1. Study of the effect of different types of fertilization on the productivity and quality of wheat and corn. Works: D.7.1. D.7.6, D.7.9, D.7.14, D.7.15, D.7.22, D.8.2, E.22.1.

2. Development and implementation of local models for obtaining extracts from essential oil crops for the purpose of their application for decontamination and deodorization of compost-like mixtures. Works: D.7.2, D.7.3, D.7.5, D.7.11, D.7.12, D.8.1.

3. Research and conditions for the production of extractive solutions against pathogenic microorganisms from various plant species and extraction technologies for their use in medical applications: Papers: D.7.18, D.7.19

4. Research on the allelopathic effect of extracts from essential oil crops on plant manifestations in vegetable crops. Papers: D.7.16, D.7.20

5. Microbiological approaches and techniques in the development of models of productivity and quality, based on the use of the potential of soil microorganisms and biological mechanisms.

6. Treatment, processing and use in agriculture of sludge from sewage treatment plants. Papers: D.7.10, D.7.13, D.8.6

7. Assessment and management of the ecological risk of fires, heavy metal impurities in the soil and the development of eco-catastrophes. Papers: C.3, D.6, D.7.13, D.7.17, D.8.5, D.8.6, D.8.8

8. Models for assessing the influence of plant and technological factors on the antibacterial activity of extracts against probable pathogens. Papers: D.7.2, D.7.3, D.7.4, D.7.5, D.7.10, D.7.11, D.7.12, D.7.13.

9. Use of modern technologies in agriculture and environmental protection. Papers: D.8.3, D.8.4, D.8.7

C. Applied contributions, reduced to providing opportunities for using the obtained results in scientific research and agricultural practice:

1. As a result of the conducted theoretical, experimental and systematic studies, local models have been obtained and provided for use as possible components of a future

fertility model in specific conditions. The models or parts of them have been obtained in all applied works of a scientific-applied nature, and their generalized and systematic form is presented in the monograph on pages 115-117. Papers: C.3, D.6

2. Databases of experimental agrochemical and microbiological analyses, and databases of recognition of the state of agro and urbogenic soils depending on the distance from the source of pollution at different depths, which can be used in electronic form or on paper, have been obtained. Papers: C.3, D.6

D. Educational and methodological contributions

1. Combining basic knowledge of soil science with current environmental problems, such as soil pollution and technologies for their purification. Presentation of purification technologies and methods for assessing soil condition applicable in practice and in the educational process. Papers E.22.1.

2. Systematization and adaptation of specialized microbiological knowledge in an accessible form, consistent with the curricula and the level of students in the relevant specialty. Development of structured topics and practical classes that meet the modern requirements for training in microbiology in agricultural and biological specialties. Integration of modern methods for diagnosis, cultivation and identification of microorganisms, presented in a clear and applicable context. Creation of a logical and consistent methodology for laboratory exercises, facilitating the understanding of basic microbiological techniques and the development of practical skills in students. Introduction of control questions and tasks for self-training, which help consolidate knowledge and encourage independent thinking. Selection of a rich and updated illustrative base (diagrams, tables, images) that visualize complex microbiological processes and support their understanding. Papers E 23.1, E.23.2

6. Significance of contributions to science and practice.

The breadth, relevance and significance of the scientific research conducted, the contributions to agricultural science and in particular soil science such as the study of agrochemical, microbiological and enzymatic processes in urbanized and agrogenic soils, the study of the biogenicity of soils under different plant species, the microbiological development after natural disasters, the influence of various fertilizer products on wheat, vegetable crops and rapeseed, and last but not least the presentation of mathematical models, her active participation in national and international scientific forums and projects, the implementation activity, the participation in teaching activities with lectures, laboratory and seminar exercises, the personal qualities and the high professional and scientific experience of the candidate Assoc. Prof. Dr. Pavlina Naskova definitely have important contributions with which she enriches agricultural science.

7. Critical notes and recommendations.

- Rather, a recommendation for the candidate for his future work to include an experiment in which the sludge obtained from the treatment plants was subjected to processing by the red Californian worm. The resulting soil can be safely used as fertilizer in agricultural activities.

- Increasing the number of independent publications.

8. Personal impressions and opinion of the review.

My personal impressions of Assoc. Prof. Dr. Pavlina Naskova are very good, as Deputy Rector of TU - Varna she definitely has an important contribution to the management of economic, administrative activities at the Technical University. Director of the Directorate "International Activities and Foreign Students" in the period 2019

2022 Activities related to the internationalization of the university and the management of the training of foreign students, which requires good communication skills and experience.

CONCLUSION

The relevance and significance of the scientific research conducted, the development of structured topics and practical classes that meet the modern requirements for training in microbiology in agricultural and biological specialties. Integration of modern methods for diagnostics, cultivation and identification of microorganisms, presented in a clear and applicable context. Creation of a logical and consistent methodology for laboratory exercises, facilitating the understanding of basic microbiological techniques and the development of practical skills in students. Introduction of control questions and tasks for students' self-study.

The contributions to agricultural science and in particular soil science, such as the study of agrochemical, microbiological and enzymatic processes in urbanized and agrogenic soils, the study of the biogenicity of soils under different plant species, the microbiological development after natural disasters, the influence of different fertilizer products on wheat and rapeseed, last but not least the presentation of mathematical models and her active participation in national and international scientific forums and projects, the implementation activity, the participation in teaching activities with lectures, laboratory and seminar exercises, the personal qualities and the high professional and scientific experience of the candidate allow me to express a positive opinion about her scientific activity and I will vote for awarding the academic position of "PROFESSOR"

Based on the familiarization with the presented scientific works, their significance, the scientific, applied and applied contributions contained in them, I find it reasonable to propose to the esteemed Scientific Council at TU - Varna Assoc. Prof. Dr. Pavlina Naskova Atanasova to take the academic position "Professor" in the Department of "Plant Production" at the Technical University - Varna

Field of higher education 6. "Agrarian Sciences and Veterinary Medicine", in professional field 6.1. "Plant Production", specialty "Soil Science".

Заличена информация
по Регламент (ЕС)
2016/679

Date: 24.10.2025