OPINION

on the materials for participation in the competition for occupation of the academic position "Associate Professor", field of higher education 6. Agrarian Sciences and Veterinary Medicine, Professional field 6.1. Plant growing, scientific specialty "Vegetable growing", in the discipline "Vegetable growing", announced by the University of Forestry, SG. 32/03.04.2020, procedure code AGR-AsP-0320-38.

Applicants to the competition are:

1. Ch. Assist. Prof. Milena Yordanova, PhD

Prepared by: Rumen Ignatov Tomov, PhD, Professor in professional field 6.2 Plant protection from the University of Forestry

1. Brief biographical data of the applicant

Ch. Assistant Professor Milena Yordanova, PhD, graduated from the Higher Agricultural Institute (now the Agricultural University), Plovdiv in 1992 and became an agronomist-vine-gardener, Master's degree. In 1998 he acquired a second Master's degree "Journalist" at Sofia University "St. Kliment Ohridski". In 2009 he obtained a scientific and educational degree "Doctor" at the University of Forestry, defending a dissertation on "Biological studies of the effects of the use of mulch in the cultivation of broccoli - *Brassica oleracea* var. *italic* Plenck".

She began her career in 1999 as an Assistant at the Faculty of Agriculture, University of Forestry. During the period 2003-2007 he was a senior assistant, and from 2007 until now he is Chief Assistant at the Faculty of Agronomy of the University of Forestry. She has 20 years and six months of work experience at the University of Forestry.

During the period 2005-2020 she improved her qualification through her participation in 16 courses as follows: Rain Bird Academy training session for professional irrigation systems = Irrigation systems - Level 1; Geoff Lawton's Permaculture Design Course; Methodology of research, preparation, participation and project management; Development of curricula, plans and programs related to the Credit Accumulation and Transfer System; Use of modern methods for teaching through ICT; WEB technologies. E-learning methods and systems; Statistical software for processing and analysis of data from social, economic, bio- and medical research - SPSS; Fundamentals of information technology. Test processing systems, spreadsheets, presentations and business graphics; Methodology of academic training; Communication skills and teamwork; English language - upgrading level; Training for work and maintenance of an e-learning platform Blackboard LearnTM; Project development and applying for the EU funds; Organic Agriculture; farming practices and intentions in plant production; English language, III and IV level, Headway system.

Ch. Assistant Professor Dr. Milena Yordanova has participated in 12 research and educational projects. He is the author of 37 scientific articles, 2 teaching aids and 1 textbook. The scientific results published in 6 of her articles are reflected in the scientific literature with 15 citations.

2. Compliance of the submitted documents and materials of the applicant with the required ones in accordance with the Rules for RDAS at the University of Forestry (UF).

The submitted documents and materials of Ch. Assistant Professor Dr. Milena Yordanova are in compliance with the requirements of the RDAS Rules of the University of Forestry. The submitted materials exceed the minimum required points by groups of indicators for occupation of the academic position "associate professor" for Professional field (PF) 6.1. Plant growing. Ch. Assistant Professor Dr. Yordanova completed 787,12 points with a required 400.

3. Assessment of the applicant's educational activity

From 1999 to the present Ch. Assistant Professor Milena Yordanova, PhD, is a lecturer in the field of Vegetable Production at the University of Forestry. She is the author of 6 curricula and holder 6 disciplines taught to students of Bachelor's and Master's degrees as follows: (1) for Bachelor's degree Agronomy and Plant protection - "Vegetable production", "Mushroom production", "Greenhouse production", "Rare vegetable crops", " Introduction to Organic Agriculture ", Master's Degree, Perennials and Horticulture" Technologies in Vegetable Production ".

Ch. Assistant Professor Dr. Milena Yordanova is a co-author of the textbook "Irrigation regime of agricultural crops." She is a co-author of two textbooks, which are valuable teaching aids for both students and professionals in the practice "Entrepreneur's Handbook in Organic Farming. Chapter 4. "Vegetable crops in organic farming" and "Recovery of biodegradable waste by composting".

She was a supervisor of 13 successfully defended diploma paper of graduates. She has participated in the project "Student Internships - Phase 1" as an academic mentor to 6 students.

4. Assessment of the applicant's scientific, applied and publication activities
4.1. Participation in scientific, applied and educational projects

Ch. Assistant Professor Milena Yordanova, PhD, has participated in 10 national research project in which she was a member of the research team. One of the projects was funded by the International Institute of Plant Nutrition, one by the National Scientific fund of Bulgaria, and seven of the projects were funded by the Scientific Sector of the University of forestry.

4.2. Characteristics of published scientific results

Ch. Assistant Professor Milena Yordanova, PhD, participated in the competition with 38 published works, as follows: Habilitation work - monograph - 1; Articles and reports published in scientific journals, referenced and indexed in world-famous databases with scientific information - 11; Articles and reports published in non-referenced journals with scientific review or published in edited collective volumes - 23;

Published university textbook or textbook used in the school network - 1; Published university textbook or textbook used in the school network - 2.

The scientific publications are 34 and have been published in 14 scientific journals, nine of which are foreign. Eleven of the publications are in peer-reviewed journals and 19 publications are in a foreign language.

4.3. Reflection of the applicant's scientific activity in the cientific literature (Citation)

The scientific results of Ch. Assistant Professor Milena Yordanova, PhD, have received a response at home and abroad. A total of 14 citations of 6 of her works are detected, as follows: in refereed journals - 12, in refereed collections of reports - 2. Citation in publications in peer-reviewed journals proves the high quality of the works of Ch. Assistant Professor Yordanova.

4.4. Contributions to the applicant's work (scientific, scientific-applied, applied)

The **scientific contributions** of Ch. Assistant Professor Milena Yordanova, PhD are indisputable and can be summarized in the following 3 areas: (1) New opportunities for vegetable growing, (2) study of mulching materials and (3) Composting of vegetable waste.

1. New opportunities for growing vegetables

The scientific results of Ch. Assistant Professor Milena Yordanova, PhD in this field are published in 9 publications (№№ 7.2, 8.3, 8.5, 8.6, 8.9, 8.12, 8.14, 8.16, 8.23). The main contributions are: (1) The resistance of over 12 different varieties of lettuce to biotic and abiotic factors has been established and corrections have been proposed for their cultivation; (2) The efficiency of the use of different soil herbicides in growing vegetables has been established; (3) The possibility for development of the roof gardening in the urban environment of Sofia and the importance of the vegetable species for this direction are analyzed; (4) The state of the Organic agriculture and the problems of the organic vegetable production, emerging at the beginning of the 20th century, are analyzed.

2. Study of mulching materials

The scientific results of Ch. Assistant Professor Milena Yordanova, PhD in this field are published in 4 issues. publications (№№ 7.8, 8.10, 8.13, 8.18). The main contributions are: (1) It has been established that the use of a mix of three species of fresh, green, unseeded weed species as mulching materials very well suppresses the development of weeds, like other organic mulches, but also reduces the yield, probably due to allelopathic effect of one of the weed species and (2) The importance of seven different organic mulching materials for maintaining moderate soil temperature and protecting the soil from overheating has been proven.

3 Composting of vegetable waste

The scientific results of Ch. Assistant Professor Milena Yordanova, PhD in this field have been published in one publication (№3.1). The main contributions are: (1) A hypothesis has been formulated regarding the possibility for aerobic composting of vegetable waste generated in an urban environment and different scenarios have been developed, depending on the conditions in which they are generated (type of waste, season, mixing possibilities); (2) As a result of a complex study of vegetable waste generated under different conditions in an urban environment, different dynamics of the measured parameters in the different compostable materials has been established, but the final composts have chemical and physical indicators meeting the standards; (3) When studying the influence of the various factors on the duration of the active composting phase, the interaction between them and the strength of their impact, it was found that the factors with the strongest influence (alone and in combination) are: the C / N ratio in the starting materials, the volume of the compost pile and the reaching of optimal temperatures in the thermophilic phase; (4) It has been established that the factor with the strongest influence on the final C / N ratio of the

finished compost is the C / N ratio in the starting materials. It has been proven that its influence is amplified in combination with each of the factors: volume of the compost heap, reaching optimal temperatures in the thermophilic phase, the frequency of reversal and the duration of the active period.

The research of Ch. Assistant Professor Milena Yordanova, PhD, in the field of composting of vegetable waste and mulching materials also have indisputable **scientific and applied** contributions of great importance for the practice. The most significant of them are the following:

Composting: (1) Original data for the course of the composting process of leached vegetable waste have been obtained and an assessment of the final product has been made; (2) It has been proved that due to the different structure of the starting materials (density, weight, etc.), the determining factor for the correct course of the composting process is the volume and not the mass of the compost pile; (3) It has been established that in compost heaps with a C / N ratio in the initial mixture below the lower optimal limit (C / N<20), it is possible to carry out active composting in the mesophilic or thermophilic temperature range; (4) It has been shown that when composting in the mesophilic range, of waste with a low C / N<20 ratio, the final product - compost has good characteristics, but has a greater mass loss; (5) Different bioindicators have been established for establishing the phases of compost development and its transition to mature compost, as well as its influence on soil microorganisms depending on the method of application (№№ 7.3, 7.5, 7.6, 7.11, 8.7, 8.11).

Mulching materials: (1) The positive influence of organic soil coverings on the suppression of a number of weeds developing in the agrocenoses of different vegetable species grown as first crops (by planting in spring) and second crops by sowing and transplanting in summer has been proved.); (2) A tendency has been established for multiple exceeding of the yields during mulching of the plants, in comparison with the weeded areas, and almost identical yield with the dug-up ones; (3) The contribution in mulching the areas is reduction of the number of treatments and their reduction to a minimum; (4) It has been established that the soil cover and the products of its decomposition activate the development of microorganisms; (5) It has been established that, depending on the level of application, biochar can improve the water retention capacity, reduce the soil density and increase the soil pH; (6) It has been proven that the application of biochar in the soil also affects the physiological processes in plants - the content of chlorophyll and 3 of sugars increases, the flowering, yield and quality of production in different crops are affected (№№ 7.4, 8.1, 8.2, 8.22).

The research contributions of Ch. Assistant Professor Milena Yordanova, PhD, with an **applied character** are the recommendations made for the specialists from the practice, as follows: (1) The active composting should take place in a thermophilic phase, for the achievement of which it is necessary to observe the necessary volume for the course of the composting; (2) The use of compost from leached vegetable vegetable waste to be as a soil improver and not as an organic fertilizer; (3) The composting of vegetable waste generated by households shall be by reaching a thermophilic phase, so that the final product can be used in crop production; (4) Compost from vegetable waste generated in urban environment may be used in seedling production or for small areas; (5) The choice of the mulching coatings shall be made depending on their peculiarities, in accordance with the season, during which the vegetable species will be grown; (6) Seed-free soil coverings should be used in order to avoid secondary weeding; (7) In late field production of cabbage species in wet years to apply a reduced irrigation rate (№№3.1, 7.1, 7.8, 7.9, 8.8, 8.9, 8.10, 8.15, 8.17, 8.19).

5. Assessment of the applicant's personal contribution

The personal participation of Ch. Assistant Professor Milena Yordanova, PhD, in the conducted scientific and applied developments and the published materials is indisputable. Five of the publications are stand-alone (№№B 3.1, D 8.10, 8.15, 8.17, 8.23). She is a first author of 10 of the published materials (№№ D 7.1, 7.2, 7.5, 7.8, 8.8, 8.9, 8.13, 8.18, 8.21, 8.22), second author of 16 papers (№№ D7.3, 7.4, 7.6, 7.9, 7.10, 8.1, 8.2, 8.3, 8.4, 8.7, 8.11, 8.12, 8.14, 8.16, 8.19, 8.20), and the third and subsequent author of 4 papers (№№D7.7, 7.11, 8.5, 8.6). Most of the publications of Ch. Assistant Professor Milena Yordanova, PhD, are the result of her participation in research projects.

6. Critical notes and recommendations

I have no critical comments on the submissions

7. Personal impressions

Based on my professional contacts with Ch. Assistant Professor Dr. Milena Yordanova, I would define her as an extremely motivated and purposeful lecturer, researcher and expert in the field of vegetable production and organic farming.

8. Conclusion

I SUGGEST the candidate Ch. Assist. Prof. Milena Yordanova, PhD, to occupy the academic position of "Associate Professor" in the discipline "Vegetable growing" of Professional field 6.1. Plant growing.

Prepared by:

Prof. Rumen Tomov RhD

Opinion delivered on: 29/7/2020