

# Dr. Rodne Nastova

**full-time professor, scientific adviser**

## CONTACT

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**Address:**

Bul. Ilinden, 92-a, P.Fah 207,  
MK-1001 Skopje,  
Republic of Macedonia

**Phone:**

+389 77 808 784

**Email:**

[rodne\\_nastova@yahoo.com](mailto:rodne_nastova@yahoo.com)

Prof. Rodne Nastova, professor of fishery, was born on 22.07.1966 in Veles, Republic of Macedonia, where she finishes primary and secondary education (medical school).

In the academic year 1984/85 she enrolled at the Faculty of Natural Sciences and Mathematics in Skopje, in the Department of biology, in the area of biochemistry and physiology, where she graduated in 1989.

After graduation, she enrolls in the postgraduate studies at the Institute of Biology at the Faculty of Natural Sciences and Mathematics in Skopje, in the area of biochemistry and physiology.

On July 11, 1994, she defended the master thesis "*The influence of hyperthermia on theophylline biotransformation in rats*", and she obtained an academic **MA degree** in biological sciences.

From 01.11.1995 until today she works at the Institute for Animal Husbandry - Skopje, at first as a junior assistant in the discipline "*Nutrition and Fish Physiology*". On April 24, 1997, she was elected to a **Scientific Assistant** in the scientific field "nutrition and physiology of fish".

The doctoral dissertation entitled: "*Study of the ichthyofauna of the river Vardar in R. Macedonia as an indicator of its pollution*" was developed by the Institute for Animal Husbandry in the framework of the scientific research project "*Population research of fish from the river Vardar in the Republic of Macedonia*", and defended it on

December 17, 2004 in front of the Senior Attestation Commission in Sofia, R. Macedonia. Bulgaria, thus acquired the academic degree **Doctor of biological sciences**, specialty "*ecology of aquatic systems*"

On June 19, 2006, has been elected as **Scientific Assistant** (docent) at the Institute for Animal Husbandry - Skopje in the scientific field "Fisheries".

On December 3, 2008, has been elected for the scientific title **Senior Research Fellow** (Associate Professor) at the Institute for Animal Husbandry - Skopje in the scientific field "Fisheries".

On October 28, 2013, has been elected **Scientific Adviser** (full-time professor) at the Institute for Animal Husbandry - Skopje in the scientific field "Fisheries".

On 26.09.2016- 25.09.2023 Dr. Nastova was elected **Director** of the Institute for Animal Husbandry, and she has been performing this function to this day.

Dr. Nastova is a member of the Scientific Council and the Administration of PSI Institute for Animal Husbandry - Skopje, and from 2012 she is a member of the Commission for Science at the University "Ss. Cyril and Methodius" - Skopje.

Head of Fishery Department at Institute of Animal Science and Fishery – Skopje - From 2023 to 2025

During her entire professional engagement, Dr. Nastova has been involved in both the scientific research and the applicative work of the Institute, especially in the fields of ichthyology, hydrobiology and ecology of water systems from the aspect of pollution. She

participated in the realization of several scientific and research projects of national and international character.

2017 – 2018 North Macedonia Institute of Animal science –Financed by: Ministry of Agriculture, Forestry and Water Economy Leader of the team Project: Monitoring of water quality of reservoir Shum and hatchery Shum, toward conservation of nature and production of quality salmonids for stocking of open waters in the Republic of Macedonia – Project participant

2019 North Macedonia University “Ss. Cyril and Methodius”- Skopje Project participant, Project: Periodical probiotic feed addition in carp intensive cage culture

2022 North Macedonia Institute of Animal science, Project funded by MOEPP Project participant Fish expert Project: Meet “Vretenar”(Zingel balcanicus, Karaman 1937), the endemic and endangered fish in earth globe

She is the author of a number of scientific papers, published in renowned scientific journals in the country and abroad, or presented at appropriate scientific symposiums and congresses.

#### **PUBLISHED LABORS AND PUBLICATIONS:**

1. Nastova, R., (1994): The Influence of the Hyperthermal Environment on Theophylline Biotransformation in Rats. Master thesis, Skopje
2. Nastova-Gorgioska Rodne (1996): The Influence of the Hyperthermal Environment on Theophylline Absorption in Rats. First Congress of DBM, Ohrid.
3. Nastova-Gjorgjioska Rodne, Simo Georgiev and Apostol Cilevski (1997): Nutrition of some fish from the Mavrovo reservoir, Krmiva, Zagreb.
4. Nastova-Gjorgjioska Rodne, Simo Georgiev, Vasil Kostov (1997): Growth of *Leuciscus Cephalus* / Linnaeus, 1758 / from the river Babuna. Proceedings of the Second Limnological Congress of Biologists by Argentina.
5. Djorgjioska-Nastova, R., Kostov, V., Georgiev, S., (1997): Nutrition of chub *Leuciscus cephalus* Linnaeus, 1758 from the river Babuna. Fishing, 55, (1), 53-65 Zagreb.
6. Georgiev, S., Gorgioska-Nastova, R., Kostov, V., Despotovska, L. (1998): Determination of the quality of water from the river Vardar through the fish and the components of the diet from their digestive treatments as bioindicators. JSC Water Economy of the Republic of Macedonia, V counseling – Struga
7. Gorgioska-Nastova, R., Georgiev, S., Cilevski, A., Kostov, V., Cilev, G. (1998): The quality composition of the components of the diet of fish from the river Vardar as an indicator for determining fishing revisers from the aspect of sports fishing. International scientific gathering 'Perspectives and improvement of planning and arrangement of space', Ohrid.

8. Georgiev, S., Kostov, V., Djordjioska- Nastova, R., (1998): Initial research on the length and weight growth of bream *Vimba vimba* Linnaeus 1758, from the river Vardar. Collection of labors dedicated to prof. Cyril Apostolski, Skopje.
9. Georgiev, S., Kostov, V., Djordjioska- Nastova, R., Cilevski, A., (1998): Reproduction of chub *Leuciscus cephalus* Linnaeus, 1758, from the river Babuna. Collection of labors dedicated to prof. Cyril Apostolski, Skopje.
10. Kostov V., Georgiev S., Gorgioska-Nastova, R., Naumovski M., (1998): First finding of the species *Gimnocephalus cernuus* Linnaeus 1758, in the waters of the Republic of Macedonia. Collection of labors dedicated to prof. Cyril Apostolski, Skopje.
11. Georgiev S., Kostov V., Gorgioska-Nastova, R., (1998): Ritroni in the Republic of Macedonia with unique aesthetic characteristics. International scientific gathering 'Perspectives and improvement of planning and arrangement of space', Ohrid.
12. Veljovic P., Radovic V., Radovanovic T., Cilevski A., Nastova-Gjorgjioska R.,: Application of zeolite as an additive in food during the intensive cultivation of *O. Mykiss* Rich.,. Collection of labors dedicated to prof. Kiril Apostolski, 1998, p. 43-50.
13. Veljovic P., Radovanovic T., Radovic V., Cilevski A., Nastoya-Gjorgjioska R.,. The health condition of the Ichtioph fauna on the Ibar River under conditions of hydro-pollution. Collection of labors dedicated to prof. Kiril Apostolski, 1998, p. 101-107
14. Gorgioska-Nastova, R. (1999): Ichthyofauna as a bioindicator for the ecological and toxicological condition of the river Vardar in the Republic of Macedonia. Doctoral dissertation. Institute of Biology, Novi Sad (handwriting)
15. Cilev G., Cilevski A., Sokarovski J., Sinovec Z., Nastova-Djordjioska R., Djorgovska N.,: The chemical composition and energy value of some types of feed produced in the Republic of Macedonia. Fodder, 2000, 42 (1) p. 41-46, Zagreb.
16. Nastova-Djordjioska R., Cilevski A., Georgiev S., Cilev G., Nutrition of the river fish ( *Barbus barbus* L.) in the Vardar River. Fodder, 2000,42 (3), p. 119-122, Zagreb
17. Nastova-Djordjioska R., Teodorovic, I., Djukic N., Maletin S., Boskova T., Zivic N.,: Assessment of the water quality of the lower Vardar river based on the accumulation of heavy waters "Water protection 2000", Mataruska Banja , 151-156, 2000.
18. Nastova-Djordjioska R., Kostov V., Zivkovic L., Nikolic L., Babic M.,: The concentration of heavy metals in tissues and organs *Barnus meridionalis* from the river Vardar. Eco-Conference 2000 Health food security - Proceedings, 241-247, Novi Sad, 2000
19. Nastova-Djordjioska R., Kostov V., Duraku S., Boskova T., Zivic N., Todorovic I., Miljanovic B.,: Composition and distribution of the ichtioph fauna of the river Vardar in R. Macedonia. The Proceedings of the Works were announced at the IV Yugoslav Symposium of the Fisheries of Yugoslavia. Vrsac, 20-22.09.2000 p. 62-68
20. Kostov V., Nastova-Djordjioska R., Naumovski M., Zivic N.,: Reproductive Characteristics of *Chondrostomus nasus* L. 1758 in the

Vardar River in Macedonia, Monograph, IV Yugoslav Symposium "Fisheries of Yugoslavia", 161-167, Vrsac, 2000.

21. Nastova-Gjorgjioska R., Kostov V.,: Nutrition and reproduction of *Leuciscus cephalus* L., from the river Vardar I symposium on animal husbandry with international participation, May 23-25, Struga, 2001

22. Kostov V., Naumovski M., Nastova-Gorgjioska R. : Seasonal fertilization of the *Chondrostoma nasus* L. in the river Vardar I Symposium on livestock with international participation, May 23-25, Struga, 2001

23. Kostov V., Naumovski M., Nastova-Djordjioska R., Reproductive Characteristics *A. bipunctatus* Bloch., 1782 in the river Vardar in Macedonia. Scientific Meeting 'Zasavica 2001', June 27-30, Sremska Mitrovica, 2001.

24. Kostov V., Naumovski M., Nastova-Djordjioska R., Antropogenic influence on the ichthyofauna of the river Vardar, Eko-konferencija 2001, 26-29 September, Novi Sad.

25. Kostov V., Naumovski M., Nastova-Gjorgjioska R., Description of the biomanipulation applied in the accumulation of Strezevo. Reports and Announcements, VIII Consultation on Water Economy in the Republic of Macedonia Macedonia, October 24-27, Struga, 2001

26. Nastova-Djordjioska R., Kostov V., Lokoska L., Noveska V. : Assessment of water quality of the accumulation Strezevo in R. Macedonia according to physico-chemical and bacteriological parameters. Conference on current problems of water use and protection; 11-14.06.2002 Vrnjacka Banja; Proceedings, p. 84-90.

27. Nastova-Djordjioska R., Kostov V. : Longitudinal classification of Vardar based on the content of heavy metals in musculature in black barbell (*Barbus peloponnesius* L.). Fodder 2003, 45 (5), p. 277-281.

28. Nastova-Giorgjioska R. : Long-term distribution and storage of the black barb (*Barbus meridionalis*, Risso) from the river Vardar. Scientific conference with international participation: Ecology, agrarian production, sustainable development; 04-05.05.2004 Stara Zagora; Ecology and fodder, year. III, No. 2, Sofia 2004.

29. Nastova-Djordjioska R., Lokoska L., Noveska V. : The quality of the water, its evaluation from the microbiological aspect, at the accumulation "Tikvesh", R. Macedonia. Proceedings "Water Protection", 2004; p. 267-272.

30. Nastova-Djordjioska R., Maletin S.,: Ecological research of certain fish species in the Strezevo accumulation in R. Macedonia. Collection of short contents from the Symposium Veterinary and Animal Husbandry in the Production of Healthy Food. (with international participation), Herceg Novi 21-25 June 2004

31. Nastova-Giorgjioska R., Kostadinova G., Petkov G.: Accumulation of heavy metals by the ecotropical chain on *Barbus meridionalis* Risso from the river Vardar in R. Macedonia. Scientific conference with international participation; 29.09.2005 Stara Zagora; Ecology and fever; year. IV, No. 3, Sofia 2005.

32. Nastova-Djordjioska R., Kostoski G. : Saprobiological analysis of water from the Tikvesh Reservoir based on a study of the

- zooplankton fauna. III Symposium of Livestock Production with International Participation, Ohrid 2007. Proceedings, pp. 751-756.
33. Nastova-Djordjioska R. : Analysis of distribution and nutrition of the *Gobio gobio* L. in the river Vardar in R. Macedonia. Symposium on Fisheries, 01-03.02.2007 Belgrade.
34. Nastova-Djordjioska R. : Ecological research of fish species in the Strezevo Reservoir, Macedonia. XII European Congress of Ichthyology; 13.09.2007 Cavtat; Book of Abstracts, p. 115.
35. Nastova-Djordjioska R. : Saprobiological assessment of water quality of the Vardar River in the Republic of Macedonia based on bioindicator fish species. Simposium "Livestock, veterinary medicine and economics in the production of health-safe food", 22-29.06.2008 Herceg Novi.
36. Nastova-Giorgioska R. : Ecological approach to fish farming in hot-water fish farms. Jubilee Scientific Conference with international participation: 80 years of agrarian science in the Rhodopes; 25-26.09.2008 Smolyan, R. Bulgaria; Proceedings, p. 122-125.
37. Nastova R., Cilev G. : Fauna and ecological analysis of the fish in the Tikvesh storage lake in the Republic of Macedonia. IV Balkan Conference of Animal Science BALNIMALCON, 14-16.05.2009 Stara Zagora, Bulgaria; Proceedings, pp. 354-357.
38. Nastova, R. (2009): Primary Production in the Tikvesh Accumulation. Proceedings of the IV International symposium on livestock breeding Ohrid, 09-12.09.2009, p.201.
39. Nastova R., Nikolova N. : Pumpkinseed (*Lepomis gibbosus* L. 1758) - unwelcome inhabitant of the ichthyofauna in the Reservoir Strezevo and R. Macedonia. Biotechnology in Animal Husbandry, 2011; Belgrade-Zemun, Serbia; Vol. 27 (4), pp. 1531-1535.
40. Nastova R., Kostov V., Nikolova N. : Influence of a different water exchange rate on the growth of Rainbow Trout (*Salmo trutta*). Journal of Animal Science, Vol. 2, No. 4, pp. 409-412 (2012).
41. Nastova R., Nikolova N. : Daphnia Test - a Shortcut for Human Health Protection Assessment. Bulgarian Journal of Agricultural Science, Sofia, Bulgaria. Also published in: Animal Science, Vol. LVI, pp. 349-353 (2012).
42. Nastova R., Nikolova N., Kostov V. : Fish as a healthy food - ecotoxicological point of view. I International Symposium, XVII Scientific Advice of Agronomists of Republika Srpska; 19-22.03.2012 Trebinje, Bosnia and Herzegovina. Collection of abstracts.
43. Nikolova N., Kostadinov T., Nastova R. : The effect of hens' age and weight classes on the internal composition of eggs. International scientific conference "Modern Zootechnology - Factor of Sustainable Development", 26-27.04.2012 Jasi, Romania.
44. Nastova R., Kostov V., Nikolova N. : Are Macedonian Freshwater Ambient Criteria for Trace Metals Protective for Human Health? BALWOIS 2012; 28.05-02.06.2012 Ohrid, R. Macedonia; Proceedings: Proceeding. 881.
45. Nastova R., Nikolova N. : Influence of water flow on caliphite trout

growth. 19th International Conference: Feedings 2012; 30.05-01.06.2012 Opatija, Croatia.

46. Nastova, R., Nikolova, N., Kostov, V. (2013): Daphnia test-a shortcut for human health protection assessment. Scientific Labors, Series D. Animal science. Vol.LVI, p. 349-353
47. Nastova R., Kostov V., Gjorgovska N. : Examination of the content of heavy metals and pesticides in fish in the accumulation Strezhevo, in the Republic of Macedonia. Scientific Labors, Series D: Animal Science, Vol. LVI: 354-357 (2013).
48. Nastova R., Kostov V., Gjorgovska N. : Dynamics of primary production in the accumulation Strezhevo, in the Republic of Macedonia. Scientific Labors, Series D: Animal Science, Vol. LVII, pp. 274-277 (2014).
49. Nastova R., Gjorgovska N., Kostov V. : Selenium supplementation in fish nutrition. Scientific Journal "Agro Life", Vol. 3, No. 1: 104-107 (2014).
50. Nastova R., Kostov V., Gjorgovska N., Levkov V. : Benthic status as a indicator of water quality assessment in Strezhevo accumulation. Journal of Animal Science, Vol. 4 (1): 37-43 (2014).
51. Nastova, R., Kostov, V., Gjorgovska, N. (2014): Dynamics of primary production in accumulation "Strezevo" in the Republic of Macedonia. Animal Science Vol.LVII
52. Kapetanovic, D. et all (Nastova, R.) (2014): Water quality of mining impacted rivers in the north-eastern Macedonia: II Microbiological water quality of the rivers Bregalnica, Zletovska and Kriva- Preliminary results (abstract) International scientific workshop "Influence of active mines on freshwater ecosystems, May 12-16.
53. Valic, D. et all (Nastova, R.) (2014): Hematological assessment of Vardar chub (*Squalius vardarensis*) from three rivers in the north-eastern Macedonia (abstract) International scientific workshop "Influence of active mines on freshwater ecosystems, May 12-16 .
54. Smrzlic, I. et al. (Nastova, R.) (2014): Molecular characterization of the metazoan parasites of the Vardar chub (*Squalius vardarensis*) from three rivers in north-eastern Macedonia (abstract). International scientific workshop "Influence of active mines on freshwater ecosystems, May 12- 16.
55. Kostov V., Nastova R., Gjorgovska N., Ushlinovska I.: First record of common bream, *Abramis brama* (Linnaeus, 1758), introduced to the basin of the Vardar river, Republic of Macedonia. Journal of Animal Science, Vol. 5 (2): 113-118 (2015).
56. Gjorgovska, N., Filev, K., Levkov, V., Nastova, R. (2015): Effect of supplemented isoflavones in feed on plasma and egg cholesterol concentration in ISA brown layers. Veterinary ir zootechnika (Vet Med Zoot) T.70 (92).
57. Gjorgovska, N., Filev K., Levkov, V., Nastova, R., Kostov, V.Gjorgjievski, S., Grigorova, S., (2016): Effects of different supplemental inclusion of the enriched diet on productivity and egg structure.Bulletin UASVM Animal science and biotechnologies 73 (1): 72-76

58. Gjorgovska N., Filev K., Levkov V., Gjorgjievski S., Kostov V., Nastova R. : The Effect of Feed Rich in DHA on Egg Production, Egg Components and DHA Content in Yolk. Bulgarian Journal of Agricultural Science, 22 (Supplement 1), 10-1 (2016).
59. Gjorgovska N., Filev K., Levkov V., Nastova R., Jusufi E. : Effects of Dietary Supplementation with Isoflavones on the Exterior Development and Tibia Bone Quality of Laying Hens. Slovak Journal of Animal Science, 49 (3): 112-115 (2016).
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61. Gjorgovska N., Filev K., Levkov V., Nastova R., Grigorova S. : Evaluating isoflavones on cholesterol deposition in egg yolk during the last phase of egg. Scientific Labors, Series D: Animal Science. Vol. LX: 81-84 (2017).
62. Gjorgovska N., Filev K., Grigorova S., Levkov V., Nastova R. : Deposition of Daidzein and Genistein in the Egg Yolk of Hens During Late Egg Production. 2nd International Balkan Agriculture Congress; 16-19.05.2017 Tekirdag, Turkey.
63. Gjorgovski B., Nastova R., Cvetkovic A.: THE IMPACT OF THE ZEOLITE ON THE GROWTH OF THE COMMERCIALY GROWN RAINBOW TROUT” Horizons Journal, 2024-2025. Vol 1, No 1 pp -129-138.
64. Bodan Gjorgovski, Rodne Nastova, Aleksandar Cvetkovikj. jTHE IMPACT OF THE MINERAL ZEOLITE ON FEED CONVERSION AND MORTALITY RATE ON COMMERCIALY GROWN RAINBOW TROUT (Влијанието на минералот зеолит врз конверзијата на храна и процентот на смртноста кај комерцијално одгледувана виножитна пастрмка). Vol. 14 No. 1-2 (2025): Macedonian Journal of Animal Science

### **PARTICIPATION IN SCIENTIFIC-RESEARCH PROJECTS:**

#### ***- national projects -***

1. Project for protection, revitalization and reintroduction of the Macedonian trout (*Salmo macedonicus* Karaman, 1924) in the waters of the Republic of Macedonia. (2010; participant) Organizer: Global Ecological Fund and Macedonian Fishing Federation.
2. Genetic and morphological characterization of trout of the genus *Salmo* in the Republic of Macedonia. (2011-2012; participant). Organizer: Cyril and Methodius University - Skopje.
3. Bacterial and parasitic communities in the chub fish as indicators of the state of the environment exposed to mining activities. (2012-2014; Head of the project) Organizer: University St. Cyril and Methodius - Skopje.
4. Determination of the ecological status of the Zingel balcanicus (Karaman, 1937) in the waters of the Republic of Macedonia. (2012; participant) Organizers: Global Ecological Fund and Macedonian

5. Fisheries Federation.

6. Biological, ecological and population research of the endemic fish species *Zingel balcanicus* Karaman 1937 (2015; participant)

Organizer: University of Ss. Cyril and Methodius - Skopje.

2017 – 2018 North Macedonia Institute of Animal science –  
Financed by: Ministry of Agriculture, Forestry and Water Economy,  
Project: Monitoring of water quality of reservoir Shum and hatchery  
Shum, toward conservation of nature and production of quality  
salmonids for stocking of open waters in the Republic of Macedonia  
– Project participant

7. 2019 North Macedonia University “Ss. Cyril and Methodius”-  
Skopje Project participant, Project: Periodical probiotic feed addition  
in carp intensive cage culture

8. 2022 North Macedonia Institute of Animal science, Project  
funded by MOEPP Project participant Fish expert Project: Meet  
“Vretenar”(Zingel balcanicus, Karaman 1937), the endemic and  
endangered fish in earth globe

9. 2026 Development of Infrastructure and Conditions for the  
Establishment of a Center for Hatchery Production and Innovative  
Technologies in Warm-Water Aquaculture at the Institute of Animal  
Science and Fisheries, UKIM – Skopje

#### **- international projects -**

1. Reproductive characteristics of endemic fish in the Adriatic and  
Aegean basin in Macedonia and Croatia (2008-2010; participant

