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UNIVERZITET CRNE GORE
CENTAR ZA DOKTORSKE STUDIJE
KOMISIJI DOKTORSKIH STUDIJA ODRŽIVI RAZVOJ

Predmet: Predlog Komisije za ocijenu podobnosti doktorske teze

Predlažem Komisiju za ocjenu podobnosti doktorske teze pod nazivom „**Utvrđivanje prisustva rezistencije na antibiotike kod bakterija u vodama rijeke Bojane i plažama Ulcinja primjenom tehnike sekvenciranja cijelog genoma**“ kandidata mr Osmana Šurle u sastavu:

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2. **Prof. dr Svetlana Perović**, redovni profesor Prirodno-matematičkog fakulteta Odsjek za biologiju, Univerzitet Crne Gore (član komisije)
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Prof. dr Aleksandra Martinović

Aleksandra Martinović

Podgorica, 16.01.2023. godine

PRIJAVA TEME DOKTORSKE DISERTACIJE

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NASLOV PREDLOŽENE TEME	
Na službenom jeziku	Utvrđivanje prisustva rezistencije na antibiotike kod bakterija u vodama rijeke Bojane i plažama Ulcinja primjenom tehnike sekvenciranja cijelog genoma
Na engleskom jeziku	Determination of antimicrobial resistance in bacteria in the waters of the Bojana River and the beaches of Ulcinj based on whole genome sequencing
Obrazloženje teme	
<p>Slatkovodni i morski ekosistemi su veoma važne komponente cikličnog kruženja vode. Oni su takođe i pogodno stanište, izvor hrane i vode za piće za mnoge organizme, a i za humanu populaciju. U posljednje vrijeme, u fokusu pažnje naučne i stručne javnosti posebno mjesto zauzima oblast koja se odnosi na prekomjernu upotrebu antibiotika i posljedica takve upotrebe. Antibiotici, kao kontaminanti, mogu dospjeti u vodene ekosisteme iz različitih izvora, uzrokujući pojavu antibiotske rezistencije u populaciji mikroorganizama koji ih nastanjuju. To za posledicu ima evidentno širenje antibiotske rezistencije kod ljudi i uzgojenih životinja. Nekoliko antibiotika</p>	

i sa njima povezani geni rezistencije kod bakterija otkriveni su u ovim ekosistemima kroz brojne istraživačke programe, a potencijalno predstavljaju značajan problem za javno zdravlje. Prisustvo antibiotika i drugih kofaktora otpornosti može podstaći razvoj gena otpornosti u hromozomima ili mobilnim genetičkim elementima kod bakterija koje se nalaze u vodenim ekosistemima.

Geni otpornosti na antibiotike u bakterijama životne sredine se mogu prenijeti na klinički važne patogene. Međutim, nacionalne ili međunarodne vlasti odgovorne za kontrolu kvaliteta vodenih tijela trenutno ne prate antibiotike i njihove gene otpornosti. Oni nisu uključeni na listu zagađivača u Evropskoj okvirnoj direktivi o vodama i američkoj listi pokazatelja kvaliteta vode za zagađivače.

Geni otpornosti na antibiotike su prirodno prisutni kod bakterija vodenih ekosistema ali se njihova frekvencija, učestalost kao i nove forme ovih gena mogu povećati dodatnim unosom antibiotika. Iz ovog razloga je neophodno uvesti praćenje ovih parametara kao standardnu proceduru za praćenje stanja u životnoj sredini. Dobijene podatke bi trebalo iskoristi u donošenju zakonskih regulativa i kreiranju programa za održivo upravljanje vodenim resursima.

Ovaj rad je zasnovan na navedenim činjenicama i ima za cilj da utvrdi prisustvo gena rezistencije na antibiotika u vodenim ekosistemima rijeke Bojane i plažama Ulcinja. Kroz ovo istraživanje će se utvrditi prisustvo ovih gena na više pažljivo odabranih lokacija, a takođe će se pratiti i njihove sezonske promjene u toku godine.

Pregled istraživanja

Brza pojava antimikrobne rezistencije u mikroflori ljudi i životinja je stvar globalne zabrinutosti. Glavni uzročnik ove pojave je prekomjerna upotrebe antibiotika (Grenni et al., 2018; Laxminarayan, 2014; Sousa et al., 2018), što podrazumjeva unos velike količine gena otpornosti na antibiotike u životnu sredinu, uključujući i vodene ekosisteme. Kontaminacija vode se uglavnom javlja kao posljedica ispuštanja otpada porijeklom od uzgojnih životinja u poljoprivredi (He et al., 2020), efluenta iz bolnica i postrojenja za prečišćavanje otpadnih voda (Osinska et al., 2020; Rizzo et al., 2013), uključujući i one od proizvođača antibiotika (Hassoun-Kheir et al., 2020). Postrojenja za prečišćavanje otpadnih voda nisu u stanju da potpuno eliminišu antibiotike jer nisu dizajnirani za njihovo uklanjanje (Wang & Chen, 2020).

Od vremena kada je penicilin korišćen za liječenje ljudskih infekcija 1940. godine, stotine antibiotika su izolovani ili sintetizovani i korišćeni u kliničkoj medicini, poljoprivrednoj sadnji, stočarstvu, akvakulturi i drugim poljima (Wang et al, 2020). Međutim, većina različitih vrsta antibiotika koji se koriste u različitim oblastima će na kraju dospjeti u životnu sredinu u nemetabolizovanom obliku kroz različite oblike otpada, kao što su poljoprivredne i farmaceutske otpadne vode, ljudski i životinjski feces (Zhang et al, 2022). S obzirom da rijeka Bojana protiče kroz Crnu Goru i Albaniju, velika je vjerovatnoća da se na ovom putu unosi značajna količina antibiotika, koja pomoću riječnog toka dospjeva u more.

Studije su dokazale da geni otpornosti na antibiotike mogu opstati u okolini i da se mogu širiti u njoj, oslanjajući se na mobilne genetske elemente (npr. sekvencu umetanja, integrone i plazmide) horizontalnim transferom gena između različitih bakterijskih zajednica, koje mogu imati štetniji uticaj na ekološku sredinu i zdravlje ljudi nego sami antibiotici (Zhang et al, 2021; Corcoll et al, 2014). Pored toga, faktori životne sredine kao što su temperatura, hranljive materije i teški metali mogu uticati na horizontalni tranfer gena bakterijskih zajednica u vodi i sedimentima (Zhang et al, 2022).

Antimikrobna rezistencija je sada prepoznata kao jedna od 10 najvećih pretnji globalnom zdravlju, sa trenutnim trendovima otpornih infekcija kod ljudi i uzgojnih životinja koje ukazuju na potencijalnu postantibiotsku eru. Društveni i ekonomski teret antimikrobne rezistencije se još uvijek utvrđuje, ali neke stroge projekcije predviđaju da će otporne bakterijske infekcije postati vodeći uzrok smrti širom svijeta do 2050. godine (Liguori et al, 2022).

Globalni i nacionalni akcioni planovi za borbu protiv antimikrobne rezistencije su generalno

obuhvaćeni u okviru One Health inicijative (ljudi–životinje–životna sredina); (Hermando-Armado et al, 2019). Međutim, sve više se prihvata činjenica da više pažnje treba usmjeriti na ekološku dimenziju ovog problema. Potreba da se bolje razumije uloga životne sredine u širenju bakterija otpornih na antibiotike i gena rezistencije na antibiotike unutar i između ljudi, biljaka i životinja naglašena je u Nacionalnom akcionom planu SAD za borbu protiv bakterija otpornih na antibiotike, gdje je ključni cilj ažuriranje podataka za 2020. godinu i veći nadzor. U sektoru životne sredine, različiti su putevi razvoja i širenja antimikrobne rezistencije, ali veliki broj istraživanja je pokazalo da vodena sredina predstavlja objedinjujući put prenosa. Uticaj antimikrobne rezistencije iz životne sredine na ljude može se ostvariti kroz kontakt sa vodom ili aerosolima. Ovo uključuje i kontaminiranu vodu za piće, hranu ili vodu za rekreaciju, što može dovesti do kolonizacije kože, gastrointestinalnog, urogenitalnog i respiratornog sistema i/ili infekcije rezistentnim bakterijama (Price et al, 2012; Leonard, 2015; Xie et al, 2019; Nordstorm, 2013). Uprkos dokazima da vodena sredina igra važnu ulogu, neophodne su studije koje kvantifikuju tu ulogu i povezuju je sa mogućim rizicima, što dalje naglašava potrebu za uspostavljanje dugoročnih uporedivih podataka praćenja u okviru One Health inicijative. Osnovni kamen spoticanja za unapređenje praćenja antimikrobne rezistencije vodenog okruženja je nedostatak dogovorenih ciljeva i standardizovanih metoda, uključujući nedostatak podataka o benčmarkingu i pragovima za informisanje o evolucionim, epidemiološkim i drugim naporima modeliranja rizika (Liguori et al, 2022).

Razumijevanje prisustva patogena i determinanti antimikrobne rezistencije u površinskim vodama pomaže u informisanju o rizicima u širokom spektru primjena i obezbeđuje integrativni pristup javnom zdravlju. Prepoznajući značajan zdravstveni uticaj koji voda iz životne sredine ima na ljude, životinje i životnu sredinu (Sanganyado, 2019; Wang, 2016; Zang 2009) Nacionalni sistem za praćenje antimikrobne rezistencije (NARMS) istražuje površinske vode kao potencijalni ekološki modalitet za praćenje antimikrobne rezistencije u okviru One Health inicijative. Ova strategija zahtjeva metodološke pristupe koji mogu analizirati antimikrobnu rezistenciju u vodenom ekosistemu koji je složen i razblažen. Trenutni naponi za praćenje NARMS-a koriste standardno *in vitro* testiranje osjetljivosti na antimikrobne lijekove da bi se generisale minimalne inhibitorne koncentracije i sekvenciranje cijelog genoma da bi se predvidjeli rezistentni fenotipovi direktno iz informacija sadržanih u genima (Nguyen, 2019; Tyson, 2018).

Cilj i hipoteze

Ciljvi rada su:

- Utvrđivanje prisustva i strukture gena rezistencije na antibiotike kod bakterija izolovanih sa odabranih lokacija rijeke Bojane i sa plaža u Opštini Ulcinj
- Praćenje longitudinalnih promjena u genima rezistencije na antibiotike duž rijeke Bojane
- Praćenje promjena u genima rezistencije na antibiotike na plažama Ulcinja
- Analiza uticaja rijeke Bojane na antimikrobnu rezistenciju morske vode na plažama Ulcinja
- Utvrđivanje sezonske promjenljivosti u odnosu na prisustvo ovih gena
- Utvrđivanje prisustva patogenih bakterija koje posjeduju gene otpornosti na antibiotike
- Formiranje baze podataka za dalje praćenje stanja u životnoj sredini
- Istraživanje mogućnosti za standardizaciju postupka za praćenje antimikrobne rezistencije u vodi

Svi pomenuti ciljevi će se realizovati na osnovu sledećih postavljenih hipoteza:

Hipoteza 1:

U rijeci Bojani i na plažama Ulcinja je preko otpada i otpadnih voda različitog porijekla ispuštena nepoznata količina antibiotika, čija je upotreba povećana za vrijeme pandemije virusom COVID 19.

Hipoteza 2:

Bakterije koje žive u vodama rijeke Bojane i plažama Ulcinja su razvile otpornost na antibiotike kao posledica javljanja novonastalih gena otpornosti na antibiotike u njihovom genomu.

Hipoteza 3:

Na antimikrobnu rezistenciju utiču različiti faktori koji se mijenjaju u longitudinalnom pravcu rijeke i u moru.

Hipoteza 4:

Na antimikrobnu rezistenciju utiču sezonske promjene u toku godine.

Materijali, metode i plan istraživanja

Sve aktivnosti vezane za izradu doktorske disertacije se mogu podijeliti na teorijsko, terensko i laboratorijsko istraživanje. Teorijsko istraživanje obuhvata pregled stručne literature i naučnih radova iz ove oblasti. Podaci iz različitih naučnih radova i stručne literature će se analizirati i koristiti za planiranje drugih aktivnosti i za izvođenje zaključka.

U okviru terenskog istraživanja će se vršiti analiza terena i odabir lokacija za uzimanje uzoraka. Na osnovu rezultata dobijenih tokom analize, definisano je planirano uzorkovanje vode na šest pažljivo odabranih lokacija. Freskanjel, Sveti Nikola i ušće rijeke Bojane su tri lokacije sa kojih će se uzorkovati riječna voda. Mala plaža, Velika plaža i Valdanos su tri lokacije sa kojih će se uzorkovati morska voda. Sa ovih lokacija će se uzimati uzorci po standardizovanoj metodi za uzorkovanje površinskih voda koja podrazumjeva uzimanje uzorka od 500ml do 2l u sterilnoj boci, 30 cm ispod površine vode.

Prikupljeni uzorci će se transportovati u laboratoriji gdje će biti podvrgnuti filtraciji. Filtracija uzoraka vode sa terena upotrebom nitroceluloznog filtera, veličine pora od 0,22 μm , u sistemu za membransku filtraciju vode sa vakum pumpom, omogućava zadržavanje prisutnih mikroorganizama u ispitivanom uzorku. Nakon toga, biće izvršena ekstrakcija cjelokupne DNK primjenom DNeasy PowerWater protokola. Izolovana DNK će zatim biti podvrgnuta analizi metagenoma postupkom sekvenciranja cijelog genoma (Whole Genome Sequencing). Za sekvenciranje genoma će se koristiti Illumina i Nanopor tehnologije za sekvenciranje genoma. Illumina predstavlja tehnologiju sekvenciranja druge generacija dok sekvenciranje pomoću Nanopor sekvencera predstavlja tehnologiju treće generacije. Paralelno će se koristiti obje metode i vršiće se upoređivanje dobijenih rezultata. Metode sekvenciranja cijelog genoma koje će biti primjenjene, omogućiće dobijanje podataka o diverzitetu vrsta i sojeva bakterija u analiziranim uzorcima i prisustvo gena rezistencije na antibiotike. Svi dobijeni podaci će se obrađivati pomoću posebnih softvera koji vrše analizu genskih sekvenci.

Postupak uzorkovanja i analiza uzorka biće ponovljeni više puta u toku godine. Planirano je da se uradi analiza za zimski, proljetni, ljetnji i jesenji period. Dobijeni rezultati će se upoređivati i

koristiće se za utvrđivanje sezonske promjenljivosti u genima otpornosti na antibiotike. Svi dobijeni podaci biće predstavljeni tabelarno i grafički primjenom Principal Component Analysis (PCA) softverskog statističkog programa koji omogućava međusobnu uporedivost rezultata na više nivoa. Ovakav prikaz će omogućiti bolju interpretaciju rezultata i preciznije izvođenje zaključaka.

Na kraju će se svi dobijeni podaci, sa stručnom interpretacijom i izvedenim zaključcima, koristiti za pisanje doktorske disertacije po strogo definisanim pravilima akademskog pisanja.

Očekivani naučni doprinos

Ovaj naučni rad će biti jedan od prvih naučnih radova o antimikrobnoj rezistenciji zasnovanoj na sekvenciranju cijelog genoma u Crnoj Gori. Omogućiće bolje razumjevanje procesa stvaranja antimikrobne rezistencije u životnoj sredini. Daće jako važne podatke o uticaju nekontrolisane upotrebe antibiotika na životnu sredinu. Takođe će omogućiti predviđanje mogućih štetnih uticaja i potencijalnih rizika za javno zdravlje stanovika ovog područja. Ovaj rad će dati veliki doprinos u otkrivanju gena otpornosti na antibiotike u vodi i omogućiće bolje razumjevanje uticaja različitih spoljašnjih faktora na ove gene. Nadalje, rad će pružiti saznanja o prisustvu i strukturi ovih gena kod bakterija koje žive u vodama rijeke Bojane i plažama Ulcinja. Takođe će se uspostaviti baza podataka koja će se koristiti za dalje praćenje stanja u životnoj sredini. Na osnovu tih podataka po prvi put steći će se uvid u stepen prisustva gena rezistencije ovih bakterija na antibiotike kao i o mogućim potencijalnim rizicima za horizontalni transfer gena na patogene bakterije. Time će moći da se predvide mogućnosti za pojavu patogenih bakterija otpornih na antibiotike i rizici od mogućih epidemija.

Dobijeni podaci će biti jako značajni za dalja istraživanja antimikrobne rezistencije u Crnoj Gori kao i za donošenje različitih strategija i regulativa za održivo upravljanje vodenim resursima.

Ovaj rad će dati i veliki doprinos u standardizaciji metoda i postupka za praćenje antimikrobne rezistencije u životnoj sredini, čime će se olakšati dalja istraživanje i omogućiti veća preciznost i efikasnost.

Spisak objavljenih radova kandidata

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SAGLASNOST PREDLOŽENOG/IH MENTORA I DOKTORANDA SA

Odgovorno potvrđujem da sam saglasan sa temom koja se prijavljuje.

Prvi mentor	Prof. dr Aleksandra Martinović	<i>Aleksandra Martinović</i>
Drugi mentor		
Doktorand	mr Osman Šurla	<i>O. Šurla</i>
IZJAVA		
Odgovorno izjavljujem da doktorsku disertaciju sa istom temom nisam prijavio/la ni na jednom drugom fakultetu.		
U Podgorici, 16.01.2023.		<u><i>Osman Šurla</i></u> Ime i prezime kandidata

Biografija

Prof. dr Nedeljko Latinović

Rođen sam 14. marta 1971. godine u Bihaću (BiH). Školske 1990/91. godine upisao sam Poljoprivredni fakultet Univerziteta u Beogradu, odsjek za voćarstvo i vinogradarstvo. Fakultetsku diplomu stekao sam 30. juna 1997. godine odbranom diplomskog rada pod nazivom "Ispitivanje prolećnog razvoja pčelinje zajednice u voćnoj paši". Postdiplomske studije iz oblasti fitofarmacije, upisao sam školske 1997/98. na Poljoprivrednom fakultetu u Novom Sadu. Magistarsku tezu pod nazivom: "Hemijsko suzbijanje bele leptiraste vaši citrusa *Dialeurodes citri* Ashmead (Homoptera, Aleurodidae)" odbranio sam 26.10.2001. godine. Doktorsku disertaciju pod naslovom: "Model zaštite vinove loze od ekzorioze u uslovima podgoričkog vinogorja", odbranio sam 15. marta 2007. godine, na Poljoprivrednom fakultetu u Beogradu, nakon čega sam promovisan u doktora biotehničkih nauka, oblast zaštita bilja i prehrambenih proizvoda. Specijalizacije iz oblasti Integralne zaštite bilja obavio sam u Italiji (2006), Sjedinjenim Američkim Državama (2006), Njemačkoj (2019), a iz oblasti registracije sredstava za zaštitu bilja u Sloveniji (2010, 2016) i Velikoj Britaniji (2013). Učestvovao sam na brojnim skupovima iz oblasti zaštite bilja i bezbjednosti hrane (Austrija, Italija, Grčka, Belgija, Luksemburg, Francuska, Hrvatska, Kipar, Mađarska, Litvanija, Njemačka, Srbija, Bosna i Hercegovina), gdje sam prezentovao radove putem postera i usmenih prezentacija. Do sada sam objavio preko 160 naučnih i stručnih radova u domaćim i međunarodnim časopisima i skupovima u zemlji i inostranstvu.

Član sam Odbora za strateško planiranje razvoja nauke i umjetnosti Univerziteta Crne Gore, član Komisije za doktorske studije Biotehničkog fakulteta i rukovodilac studijskog programa Biljna proizvodnja na Biotehničkom fakultetu od školske 2013/2014 godine.

Član sam predsjedništva Udruženja mikrobiologa Crne Gore, član Društva za zaštitu bilja Srbije i Međunarodnog savjeta za bolesti drveta vinove loze (ICGTD). Oženjen sam i imam dvoje djece.

PODACI O RADNIM MJESTIMA I IZBORIMA U ZVANJE Od 1. februara 1999. godine zaposlen sam u Biotehničkom institutu (sada fakultetu) u Podgorici kao istraživač saradnik iz oblasti fitofarmacije, a zvanje viši istraživač za fitofarmaciju na Univerzitetu Crne Gore stekao sam 09.07.2002. godine. U zvanje docenta za oblast Fitofarmacije (predmeti Fitofarmacija, Tehnologija zaštite bilja i Sredstva za zaštitu bilja) na Biotehničkom fakultetu izabran sam 25.12.2008. godine prema Odluci Univerziteta Crne Gore br. 01-2651, a u zvanje vanrednog profesora za predmete: Fitofarmacija, Tehnologija zaštite bilja i Sredstva za zaštitu bilja na Biotehničkom fakultetu, prema Odluci Univerziteta Crne Gore br. 08-577, izabran sam 26.02.2015. godine. Na Biotehničkom fakultetu u Podgorici angažovan sam kao nastavnik na osnovnim akademskim studijama, smjer Biljna proizvodnja na predmetu Fitofarmacija, a na specijalističkim studijama, smjer Zaštita bilja na predmetima Sredstva za zaštitu bilja i Tehnologija zaštite bilja. Na magistarskim akademskim studijama, smjer Zaštita bilja, nastavnik sam na predmetima Poljoprivredna toksikologija i Rezistentnost na pesticide, i 1/3 predmeta Metode istraživačkog rada u fitomedicini. Na master studijama po zadnjem akreditovanom programu predviđeno je da od školske 2020/2021 godine izvodim predavanja na sljedećim predmetima:

Sredstva za zaštitu bilja i Tehnologija zaštite bilja. Na doktorskim studijama sam predavač na predmetu Pesticidi i jedan od četiri predavača na predmetu Održiva poljoprivreda. Na osnovnim primjenjenim studijama u Bijelom Polju, smjer Kontinentalno voćarstvo saradnik sam na predmetu Bolesti voćaka.

RADOVI U NAUČNIM ČASOPISIMA NA SCI I SCIE LISTAMA posljednjih 5 godina

Q1 Rad u vodećem međunarodnom časopisu

Gonzalez-Dominguez, E., Caffi, T., Paolini, A., Mugnai, L., **Latinović, N.**, Latinović, J., Languasco, L. and Rossi, V. (2022): Development and validation of a mechanistic model that predicts infection by *Diaporthe ampelina*, the causal agent of Phomopsis cane and leaf spot of grapevines. *Frontiers in Plant Science* (section Plant Pathogen Interactions). Vol. 13, article 872333.

González-Domínguez, E., Caffi, T., Languasco, L., **Latinovic, N.**, Latinovic, J., Rossi, V. (2021): Dynamics of *Diaphorte ampelina* conidia produced on grape canes overwintered in the vineyard. *Plant Disease*. 105(10), 3092-3100.

Kavran, M., Pajović, I., Petrić, D., Ignjatović-Ćupina, A., **Latinović, N.**, Jovanović, M., Quarrie, S.A., Zgomba, M. (2020): Aquatain AMF efficacy on juvenile mosquito stages in control of *Culex pipiens* Complex and *Aedes albopictus*. *Entomologia Experimentalis et Applicata*, 168(2), 148-157.

Latinović, J., **Latinovic, N.**, Jakse, J., Radisek, S. (2019): First report of *Erysiphe elevata* causing powdery mildew on *Catalpa bignonioides* in Montenegro. *Phytopathologia Mediterranea*. 58(3): 693-698.

Popovic, T., **Latinović, N.**, Pesic, A., Zecevic, Z., Krstajic, B., Đukanovic. S. (2017): Architecting an IoT-enabled platform for precision agriculture and ecological monitoring: A case study. *Computers and Electronics in Agriculture* (ISSN: 0168-1699). Volume 140, Pages 255-265.

Latinović, N. and Latinović, J. (2017): Influence of rainfall on development of esca disease. *Phytopathologia Mediterranea* (ISSN 0031-9465), 56, 3, 537-538.

Latinović J., Kandić, B. and **Latinović, N.** (2017): Survey on the distribution of fire blight pathogen, *Erwinia amylovora*, on pome fruits in Montenegro. *Phytopathologia Mediterranea* (ISSN 0031-9465), vol. 56, No. 2, 322.

Q2 Rad u eminentnom međunarodnom časopisu

Latinovic, J., **Latinović, N.**, Jakse, J. and Radisek, S. (2019): First Report of White Rust of Rocket (*Eruca sativa*) Caused by *Albugo candida* in Montenegro. *Plant Disease* (ISSN: 0191-2917). Vol. 103, No. 1, p 163.

Latinovic, J., Radisek, S., Bajceta, M., Jakse, J. and **Latinović, N.** (2019): Viruses associated with fig mosaic disease in different fig varieties in Montenegro. *The Plant Pathology Journal* (ISSN 1598-2254). Vol. 35, No. 1, p. 32-40.

Latinovic, J., Sabovljevic, M., Vujicic, M., **Latinovic, N.**, Sabovljevic, A. (2022): Effects of the leafy liverwort extract on plant pathogenic fungi causing olive fruit rot and gray mold of strawberry. *Phytopathologia Mediterranea*, Vol 61, No 1. 225-226.

Vujanovic, V., Kim, S.H., Latinovic, J., Latinovic, N. (2020): Natural Fungicolous Regulators of *Biscogniauxia destructiva* sp. nov. that causes Beech Bark Tarcrust in Southern European (*Fagus sylvatica*) Forests. *Microorganisms*, 8(12), 1999.

Jaćimović, Ž., Kosović, M., Kastratović, V., Holló, B.B., Mészáros Szécsényi, K. Miklós Szilágyi, I., Latinović, N., Vojinović-Ješić, Lj., Rodić, M. (2018): Synthesis and characterization of copper, nickel, cobalt, zinc complexes with 4-nitro-3-pyrazolecarboxylic acid ligand. *Journal of Thermal Analysis and Calorimetry* (ISSN: 1388-6150). Vol. 133, No. 1, 813-821.

Latinović, J., **Latinović, N.**, Karaoglanidis, G. S. (2017): First Report of Brown Rot Caused by *Monilinia fructicola* on Nectarine Fruit in Montenegro. *Plant Disease* (ISSN: 0191-2917), June, Volume 101, Number 6, Page 1045.

Jaćimović, K.Ž., Giester, G., Kosović, M., Bogdanović, A.G., Novaković, B.S., Leovac, M.V., **Latinović, N.**, Holló, B.B., Mészáros Szécsényi, K. (2017): Pyrazole-type complexes with Ni(II) and Cu(II), Solvent exchange reactions in coordination compounds. *Journal of Thermal Analysis and Calorimetry* (ISSN: 1388-6150). Volume 127, Issue 2, pp 1501–1509.

Q3 Rad u međunarodnom časopisu

Kosović, M., Novaković, S., Jaćimović, Ž., **Latinović, N.**, Marković, N., Đorđević, T., Libowitzky, E., Giester, G. (2020): Synthesis, crystal structure and biological activity of copper(II) complex with 4-nitro-3-pyrazolecarboxylic ligand. *Journal of the Serbian Chemical Society*. 85 (7) 885–895.

Latinovic, N., Sabovljevic S.M., Vujicic, M., Latinovic, J., Sabovljevic, D.A. (2019): Growth supression of plant pathogenic fungi using bryophite extracts. *Bioscience Journal* (ISSN 1981-3163). 35(4), p. 1213-1219.

Q4 Rad u međunarodnom časopisu

Sabovljević, M.S., Tomović, G., Niketić, M., Lazarević, P., Lazarević, M., Latinović, J., **Latinović, N.**, Kabaš, E., DJurović, S.Z., Kutnar, L., Skudnik, M., Pantović, J., Stevanoski, I., Vukojičić, S. & Veljić, M. (2020): New records and noteworthy data of plants, algae and fungi in SE Europe and adjacent regions, 1. *Botanica Serbica*, 44(1): 81-87.

Latinovic, N., Sabovljevic S.M., Vujicic, M., Latinovic, J., Sabovljevic, D.A. (2019): Bryophyte extracts suppress growth of plant pathogenic fungus *Botrytis cinerea*. *Botanica Serbica* (ISSN: 1821-2158). 43(1):9-12.

Latinović, N., Novaković B.S., Bogdanović, A.G., Kastratović, V., Giester, G. and Jaćimović, K.Ž. (2019): Crystal structure of dihydrazinium 1H-pyrazole-3,5-dicarboxylate, C₅H₁₂N₆O₄. *Zeitschrift für Kristallographie - New Crystal Structures* (1433-7266). 234(5), 957-958.

Latinović, N., Sabovljević D.A., Latinović, J., Vujičić, M. & Sabovljević S.M. (2018): Experimental approaches on biotic relationships among bryophytes and fungi in the controlled conditions. *Botanica Serbica* (ISSN: 1821-2158). Vol. 42 (supplement 1), 194-195.

Dr Svetlana Perović, redovni profesor

Posao: Prirodno-matematički fakultet, Studijska grupa za biologiju, Univerzitet Crne Gore, Džordža Vašingtona bb, 81000 Podgorica, Crna Gora.

Tel/fax: +382 20 243 816

Kuća: Jovana Tomaševića br. 11/II, 81000 Podgorica, Crna Gora

E-mail: svetlanap@ucg.ac.me; svetlanaperov@gmail.com

Mob.tel. +382 69 079 844

Rođena: 24. juna, 1973. godine, Podgorica, Crna Gora.

Akademsko zvanje:

Diplomirani biolog: Stekla na Prirodno-Matematičkom fakultetu, Odsjek za Biologiju, Univerziteta Crne Gore, aprila, 1996.god.

Magistar bioloških nauka, smjer Biologija mikroorganizama, postala marta, 2001.god. na Katedri za mikrobiologiju, Instituta za botaniku i Botaničke bašte Jevremovac, Biološkog fakulteta, Univerziteta u Beogradu.

Magistarska teza: Mikrobiološki testovi za detekciju inhibitora genotoksičnog efekta zagađivača životne sredine, Mentor: Prof. Dr Draga Simić.

Doktor bioloških nauka, smjer Biologija mikroorganizama, postala decembra, 2006.god. na Katedri za mikrobiologiju, Biološkog fakulteta, Univerziteta u Beogradu.

Doktorska disertacija: Primjena integralnog pristupa i analize diverziteta bakterijskih zajednica u procjeni ekotoksikološkog stanja Skadarskog jezera. Mentor: Prof. Dr Jelena Knežević-Vukčević.

Područje istraživanja: Mikrobiologija, ekološka mikrobiologija, ekotoksikologija i zaštita životne sredine.

Naučno- istraživački rad:

Doktorat: Analize ekološkog i ekotoksikološkog stanja akvatičnih ekosistema primjenom baterije mikrobioloških testova i bio-testova na višim organizmima (Comet assay, Citotoksični test na ćelijskim linijama RTG-2 i RTL-W1, EROD test i dr) i komparativna analiza genetske raznolikosti mikroorganizama u vodi i sedimentima akvatičnog ekosistema Skadarskog jezera, primjenom klasičnih metoda i molekularno-genetičkih: izolacija DNK iz prirodnih uzoraka, sedimenata i vode, PCR tehnika, elektroforeza TTGE (Temporal Temperature Gel Electrophoresis), RFLP (Restriction Fragment Length Polymorphism), izolacija rezistentnih bakterija na živu.

Magistratura: Tema magistarske teze je iz oblasti bioaktivnih supstanci, naročita pažnja se poklanja supstancama biljnog porijekla (tanini, terpenoidi, fenoli, flavonoidi i dr.) sa inhibitornim ili modulatornim efektom na genotoksične agense i njihovoj primjeni u biomedicini i poljoprivredi.

Radno iskustvo: Od 1996. godine zaposlena na Univerzitetu Crne Gore i izvodi nastavu iz predmeta:

- Mikrobiologija, PMF, Studijska grupa za biologiju, Univerzitet Crne Gore
- Industrijska mikrobiologija, MTF, Hemijska tehnologija, Univerzitet Crne Gore
- Zaštita životne sredine, PMF, Studijska grupa Biologija, Univerzitet Crne Gore
- Biologija s humanom genetikom, Medicinski fakultet, grupa Stomatologija i Medicina
- Odabrana poglavlja iz Mikrobiologije, PMF, postdiplomske studije
- Tehnike u ekotoksikologiji, PMF, doktorske studije

Značajnije publikacije:

S. Krivokapic, M. Otovic, S. Perovic, B. Damjanovic Vratnica (2022): Total phenols, flavonoids, anthocyanins and antioxidant activity of wild pomegranate (*Punica granatum* l.) biowaste from Montenegro, *Agriculture and Forestry*, 68 (2), pp. 157-165.

S. Krivokapić, M. Vlaović, B. Damjanović-Vratnica, A. Perović and S. Perović (2021): Biowaste as a Potential Source of Bioactive Compounds—A Case Study of Raspberry Fruit Pomace. *Foods* 10 (4): 706

S. Jokanovic, K. Kajan, S. Perovic, M. Ivanic, V. Mačić, S. Orlić (2021): Anthropogenic influence on the environmental health along Montenegro coast based on the bacterial and chemical characterization. *Environmental Pollution*, 271, 116383.

S. Perovic, B. Sljukic, M. Šrut, A. Perovic, G. Klobucar (2020): Evaluation of DNA damage in haemolymph of freshwater mussels *Unio pictorum* from Skadar Lake. *Biologia*, 75, pp.431-436.

Miljan Bigovic, Milovan Roganovic, Ivana Milasevic, Dijana Djurovic, Vjeroslava Slavic, Milica Kosovic, Mia Vlahovic, Svetlana Perovic, Andrej Perovi, Vlatko Kastratovic, Zorica Potpara, Milica Martinovic, Snezana Pantovic (2020): Physico-chemical characterization of Igalo Bay Peloid (Montenegro) and assessment of the pollution of potentially toxic elements in the sampling area. *Farmacia*, 68 (3), pp. 560-571.

Slađana Krivokapić, Tijana Pejatović, Svetlana Perović (2020): Chemical Characterization, Nutritional Benefits And Some Processed Products From Carrot (*Daucus Carota* L.). *Agriculture and Forestry*, 66 (2), pp. 191-216.

S. Perovic, S. Pantovic, A. Perovic, V. Zivkovic, B. Damjanovic-Vratnica (2019): Evaluation of antimicrobial activity and activity on the autonomic nervous system of the lavender essential oils from Montenegro. *Progress in nutrition* 21(3), pp. 584-590.

A. Šcepanovic, S. Krivokapic, V. Scepanovic, V. Zivkovic, S. Perovic (2019): Chemical constituents and biological potential of essential oils of *Helichrysum italicum* (Roth) g. don from Montenegro. *Agriculture and Forestry*, Vol 65 (2), pp. 53-58.

S. Perović, G. Veinović, J. Antić Stanković (2018): A A Review on Antibiotic Resistance: Origin and mechanisms of bacterial resistance as biological phenomenon. *Genetika*, Vol. 50 (3), pp. 1124-1135. <https://doi.org/10.2298/GENSR1801209S>. ISSN 0534-0012.

I. Bošković, D. Đukić, P. Mašković, L. Mandić, S. Perović (2018): Phytochemical composition and antimicrobial, antioxidant and cytotoxic activities of *Anchusa officinalis* L. extracts. *Biologia*. Vol. 73 (11), pp. 1035-1041. doi 10. 2478/s11756-018-0124-4. Springer ISSN: 0006-3088 (Print); 1336-9563 (electronic version).

I. Bošković, D. Đukić, P. Mašković, L. Mandić, S. Perović, A. Govedarica Lučić, Z. Malešević (2018): Mineral composition of plant extracts from the family Boraginaceae. *Archives for Technical Sciences*, Vol. 19 (1), 85-90. DOI: 10.7251/afts.2018.1019.085B. ISSN 1840-4855.

B. Damjanović Vratnica, S. Perović, Ž. Lepojević (2016): Supercritical fluid extraction of fennel (*Foeniculum vulgare* mill.) seed from Montenegro: antimicrobial activity. In: Edward Roj (ed.) *Supercritical fluid applications*, Publisher: New Chemical Syntheses Institute, Pulawy. pp. 61-75. ISBN 978-83-935354-1-5.

B. D. Vratnica, D. Sukovic, S. Perović (2016): Essential oils components and antimicrobial activity of Peppermint (*Mentha piperita*) from Montenegro, *Agricult. Forest* ISSN 0554-5579.

B.Damjanovic-Vratnica, S.Perović, T. Lu, R. Santos (2015): Effects of matrix pretreatment on the supercritical CO₂ extraction of *Saturaja montana*. *Chemical Industry and Chemical Engineering Quarterly*. (Chem Ind. Chem. Eng. Q.) (in press), 2015 OnLine First (00):34-34. DOI:10.2298/CICEQ150504034D, ISSN 1451-9372

Damjanović-Vratnica B., Caković, D., Perović, S. (2015) Composition and antimicrobial studies of essential oil of *Thymus vulgaris* from Montenegro, *Biologica Nyssana*, 6 (2): 13-19, ISSN: 2217-4606

B. Vuković Gačić, **S. Nikčević**, T. Berić-Bjedov, J. Knežević-Vukčević and D. Simić (2006): Antimutagenic effect of essential oil of sage (*Salvia officinalis* L.) and its monoterpenes against UV-induced mutations in *Escherichia coli* and *Saccharomyces cerevisiae*. *Food and Chemical Toxicology* 44, pp. 1730-1738.

A.Rastall, A.Neziri, Z.Vuković, S.Mijović, H.Hollert, **S.Nikčević**, L.Erdinger (2004):*The identification of Readily Bioavailable Pollutants In Lake Skadar using Semipermeable Membrane Devices (SPMD-s), Bioassays and Chemical Analysis*. *ESPR-Environ Sci & Pollut Res*, 11(4) 7A, 240-253.

R.Kostanjšek, A.Lapanje, D.Drobne, **S.Nikčević**, A.Perović, P.Zidar, J.Štrus, H.Hollert, G.Karaman (2005): *Bacterial community structure analyses used in a case study of lake pollution (Lake Skadar, Balkan Peninsula)*. *ESPR-Environ Sci & Pollut Res*, 12(6), 23A, 361-368.

B.Damjanovic-Vratnica, A.Perović, D.Šuković and **S. Perović** (2011): "Effect of vegetation cycle on chemical composition and antimicrobial activity of Wild-growing winter savory (*Satureja montana* L.) Essential oil". *Archive of Biological Sciences*, Vol. 63, Issue 4, pp. 1173-1181. ISSN 1821- 4339. JCR IF 2010=0.356.

S. Perovic, A. Perovic, L. Erdinger and H. Hollert (2013): Assessment of the mutagenic potential of sediments Skadar Lake using *Salmonella/microsomal assay*. *Arch. Biol. Sc.* Vol. 65 Issue 3; ISSN 1821- 4339. JCR IF 2010=0.356.

A. Perović, S. Perović, J. Vukić, D. Šuković, H. A. Leslie (2018): Toxicity evaluation of soils sampled in the vicinity of an Aluminum smelter in Montenegro using the Ames, Bioluminescence and DR-LUC bioassays. SETAC Europe 28th Annual Meeting, 13-17 May 2018 Rome. Abstract book pp. 257. ISSN 2309-8031 (print), Online ISSN 2310-3043.

A.Perovic, **S.Perovic**, L. Erdinger and H.Hollert (2012): "Assessment of genotoxic potential of the Lake Skadar sediments extracts using the comet assay with fish cell line RTL-W1 and Ames test", *Archive of Biological Sciences*, Vol. 64, Issue 1, pp. 249-256 ISSN 1821- 4339. JCR IF 2010=0.356.

S.Perovic, J.Rakocevic, A. Perovic (2011): *In vitro* bioassays as diagnostic tools for toxicological effects assessments of polluted environment and Triad approach. *Natura Montenegrina*, No. 10 (4), pp. 497-505. ISSN 1800-7155

J.Rakocevic and **S. Perovic** (2011): Toxicity assesment of Skadar Lake sediments using algal bioassays-preliminary study. *Natura Montenegrina* No. 10(4)č; pp. 507-514. ISSN 1800-7155

A. Perovic, **S. Perovic**, S. Krivokapic (2011): Model za razvoj edukativnih programa u oblasti zaštite životne sredine., *Zaštita prirode u 21. Vijeku*, Žabljak, Crna Gora

S. Perovic, R. Pajovic M. Bogdanovic, B. Damjanovic-Vratnica and A. Perovic (2011): "Potential Antibacterial activity of red wine phenolic extracts from Montenegro" *Microbiologia Balkanica* 2011, pp.

S. Perovic, M. Bozovic, D. Sukovic, V. Zivkovic, A. Perovic and B. Damjanovic-Vratnica (2011): "Chemical composition and antibacterial effect of the essential oil *Hyssopus officinalis* L. (*Lamiaceae*) from Montenegro", ISEO, Antalya, Turkey

B. Damjanovic, Vratnica and **S. Perovic** (2010): Influence of geographic origin on the amount and quality of Dalmatian sage essential oil. 6th Conference on Aromatic and Medicinal Plants of Southeast European Countries (AMAPSEEC). Antalya, Turkey.

Monitoring of the Lake Skadar by TRIAD approach and microbial diversity profiling. Prezentovala na SETAC 15th Europe Annual meeting, Lille, France, 2005.

A.Perović, **S.Nikčević**, N.Bushati, J.Wolz, T.B. Seiler, D.Šundić, L.Erdinger, H.Hollert: An evaluation of results from monitoring and eco-toxicity testing of the Skadar/Shkodra Lake by Triad approach. SETAC Europe 15th Annual Meeting, Lille, France, 2005; pp 330.

Recenziranje radova koji se nalaze u međunarodnim bazama podataka

Applied Microbiology and Technology. ISSN: 0175-7598 (Print) 1432-0614 (Online). Springer. IF 3.3. Manuscript AMAB-D-16-02503

Plant Foods for Human Nutrition. ISSN: 0921-9668 (Print) 1573-9104 (Online). Springer. IF 2.465. Manuscript QUAL-D-17-00296

Bilogia. ISSN: 0006-3088 (Print); 1336-9563 (electronic version). Springer. IF 0.696. Manuscript BIOL-D-18-00155

Plant Foods for Human Nutrition. ISSN: 0921-9668 (Print) 1573-9104 (Online). Springer. IF 2.465. Manuscript QUAL-D-18-00321

Central European Journal of Biology. Manuscript CEJB-D-10-00077; Article Type: Research Article. SCI journal. Impact Factor: 1.000 ISSN: 1895-104X; ISSN: 1644-3632

Natural Product Research: Manuscript GNPL -2011-1125.R2; Article Type: Research Article. SCI journal. Impact Factor: 1.009; ISSN: 1478-6419 (Print), 1478-6427 (Online)

Environmental Science and Pollution Research, ESPR. Manuscript ESPR-D-13-00354; Article Type: Research Article. SCI journal. Impact Factor: 2.651; ISSN: 0944-1344 (Print) 1614-7499 (Online)

Značajniji međunarodni Projekti:

EUREKA Σ!: „Aktivne supstance iz natkritičnih biljnih ekstrakata za visoko kvalitetne proizvode sa dodatom vrijednošću / Active substances from supercritical plant extracts for high value added products akronim GREENTECH.”

EUREKA Σ!: Phyto-preparations - natural materials with supercritical extracts for controlled release of active components; SCIMPLANT

COST Action CA16110: (HUPLANT control): Control of Human Pathogenic Micro-organisms in Plant Production Systems

EU CBRN CoE Project 67: Strengthening CBRN Waste Management Capabilities in South-East and Eastern European Countries

EUREKA Σ!: " Comprehensive processing of plant extracts for high value added products. COMPLANT. Aktivni učesnik u projektu i koordinator ispred PMF-a.

Inovativni projekat: Balneološki efekti peloida, mineralne vode, ljekovitog i aromatičnog bilja na inflamatorni odgovor kod reumatoidnih i kardiovaskularnih oboljenja.

Bilateralni projekat (Crna Gora i Srbija): Ispitivanje hemipreventivnog potencijala ljekovitih i aromatičnih biljaka iz ruralnih regiona Crne Gore

Program monitoringa morskog ekosistema EPA: Pogram praćenja bioloških indikatora i biomarkera na zagađenje

Bilateralni projekat (Crna Gora i Hrvatska): „Filogenetska analiza diverziteta bakterijskih zajednica u sedimentu u Bokokotorskom zalivu- FILOSED“

Promovisanje mreža i razmjena u zemljama jugoistočne Evrope, Skadarsko jezero, Crna Gora, SRJ, nosilac projekta Regionalni centar za životnu sredinu i jugoistočnu Evropu, REC.

Integrated monitoring of the Skadar Lake, Njemačka Rektorska Konferencija, HRK (Hochschulrektorenkonferenz).

Triad projekat: Integrated sediment assessment of the Skadar Lake , Njemačka Rektorska Konferencija, HRK (Hochschulrektorenkonferenz).

Detekcija mikroorganizama indikatora ekotoksičnosti Skadarskog jezera, Bilateralni projekat, naučno-tehnološke saradnje između Republike Slovenije i teritorije Srbije i Crne Gore.

“Interdisciplinary assessment of water resource management in two transboundary lakes in South Eastern Europe (DRIMON)” (Norwegian Institute for Water Research and Research Council of Norway).

SEE-ERA NET: An Integrated Strategy to Assess and Evaluate Water Quality of Lake Shkodra

LMOCP (Labor Market Oriented Curriculum) Experimental Biology and Biotechnology. WUS-Austria Project.

NEWEN (Netherlands and Western Balkans Environmental Network) by LeAF- Lettinga Associates Foundation, Wageningen University and Research, Unesco-Institute for Hydraulic Engineering and Institute for Environmental Studies- Vrije Universiteit Amsterdam.

Bilateralni projekat (Crna Gora-Hrvatska): Implementacija biomonitoringa zagađenja vodenih ekosistema (sliva Skadarskog jezera) korišćenjem biomarkera i biotestova

Bilateralni projekat (Crna Gora-Slovenija): Procjena uticaja na okolinu u Goriškom regionu i regionu Skadarskog jezera kao posljedica poljoprivrednih aktivnosti

Bilateralni projekat (Crna Gora-Austrija): Identity and basic characterization of potential lactic acid bacteria starter cultures isolated from traditionally fermented milk products in Montenegro

Nacionalni projekat: Ekstrakcija, ispitivanje kvaliteta i biološka aktivnost farmakološki aktivnih supstanci odabranih aromatičnih biljnih vrsta sa područja Crne Gore

Nacionalni projekat: Sinteza i karakterizacija kompleksa nekih prelaznih metala sa novim ditiokarbamatoligandima

Nacionalni projekat: Primjena biotestova za ispitivanje uzročno posledične veze između zagađivača životne sredine i nivoa toksičnosti zemljišta Zetske ravnice i sedimenata Skadarskog jezera

Značajniji naučni boravci:

- *Zoološki Institut, Univerziteta Heidelberg, Laboratorije za Akvatičnu ekologiju i toksikologiju*
- *Univerzitetska klinika Heidelberg, Higijenski institut, Laboratorija za hemiju i mikrobiologiju*
- *Biotehnički fakultet, Odjeljak za Biologiju, Univerzitet u Ljubljani, laboratorija za mikrobiologiju*
- *Bioforsk, Norveški institut za Agrokulturu i Zaštitu životne sredine, Oslo.*



PERSONAL INFORMATION

Name	Martinovic Aleksandra
Address	Djoka Mirasevica M-2, 81 000 Podgorica, Montenegro
Telephone	+382 20 410773; cell: +382 69 737 403
Fax	+382 20 410 777
E-mail	aleksandra.martinovic@udg.edu.me ; sanja.martinovic.21@gmail.com
Nationality	Montenegrin
Date of birth	21 ST OF AUGUST 1974

WORK EXPERIENCE

Dates (from – to)	January 2020- up to now
Name and address of employer	University of Donja Gorica, Centre of Excellence for digitalization of microbial food safety risk assessment and quality parameters for accurate food authenticity certification
Type of business or sector	Management of research and networking activities
Occupation or position held	Director of the Centre of Excellence
Dates (from – to)	November 2019- up to now
Name and address of employer	E Co. Ltd., 55 Chislehurst Road, Chislehurst, BR7 5NP, United Kingdom
Type of business or sector	Project financed by UNDP: „Identification of Green Added Value Products and Feasibility Assessment of Related Value Chains”
Main activities and responsibilities	Consultant , Data collection, methodology development, analysis, reporting
Dates (from – to)	October 2013- up to now
Name and address of employer	<i>University of Donja Gorica, Faculty of Food Technology, Food Safety and Ecology</i> www.udg.edu.me
Type of business or sector	Teaching, research
Occupation or position held	Associate Professor
Main activities and responsibilities	Lecturing the Subjects: Control of Quality and Safety of Food products to graduate and postgraduate students; Basic Microbiology; Food Microbiology;
Dates (from – to)	January 2019- up to now
Name and address of employer	Ministry of Science Montenegro
Type of business or sector	Innovative- research project
Occupation or position held	Establishment the laboratory for innovations in food production INNOFODLAB
Main activities and responsibilities	Project Leader

<p>Dates (from – to)</p> <p>Name and address of employer</p> <p>Type of business or sector</p> <p>Occupation or position held</p> <p>Main activities and responsibilities</p>	<p>December 2018- up to now</p> <p>European Agency for Food Safety (EFSA)</p> <p>Research</p> <p>Project Leader</p> <p>National Dietary Surveys in Compliance with the EU Menu methodology</p> <p>-“The children’ survey”, including subjects from 1 to 9 years old”</p>
<p>Dates (from – to)</p> <p>Name and address of employer</p> <p>Type of business or sector</p> <p>Occupation or position held</p> <p>Main activities and responsibilities</p>	<p>November 2016- up to now</p> <p><i>European Agency for Food Safety (EFSA)</i></p> <p>Research</p> <p>Project Leader</p> <p>National Dietary Surveys in Compliance with the EU Menu methodology</p> <p>-“The adults’ survey”, including subjects from 10 to 74 years old”</p>
<p>Dates (from – to)</p> <p>Name and address of employer</p> <p>Type of business or sector</p> <p>Occupation or position held</p> <p>Dates (from – to)</p> <p>Name and address of employer</p> <p>Type of business or sector</p> <p>Occupation or position held</p> <p>Main activities and responsibilities</p>	<p>April 2018- up to now</p> <p>Food and Agriculture Organization of the United Nations, TCICD Division, Vialle delle Terme di Caracalla, 00153, Rome, Italy</p> <p>The Project I „Promoting sustainable Agri-food Value Chain s trough Linkages with Tourism,,</p> <p>The Project II „ Supporting Sustainable value Chain Integration in Montenegro’s Fruit and Vegetable Sector”.</p> <p>Liaison Officer (National Consultant)</p> <p>April 2016- up to now</p> <p>Producer Associations- Montenegro</p> <p>Development o geographical indication and branding of traditional food products</p> <p>Expert</p> <p>Elaboration of the Code of Practice (CoP) for selected products for Protection of Geographical Indications (GI), Njeguska prosciutto, Beef prosciutto, Stelja, Pljevaljski cheese, Kolasinski cheese.</p>
<p>Dates (from – to)</p> <p>Name and address of employer</p> <p>Type of business or sector</p> <p>Occupation or position held</p> <p>Main activities and responsibilities</p>	<p>September 2016- January 2018</p> <p>Instrument for Pre-Accession of the EU - IPA</p> <p>The Project „ValueCheese,,</p> <p>Project Leader</p> <p>The overall objective of the project is to transfer know-how for improved dairy production and valorisation of traditional dairy products in Montenegro, while the specific objective is to add value in cheese production in the North of Montenegro through cooperation between academic and business sector in the field of food safety, quality and product standardisation.</p>
<p>Dates (from – to)</p> <p>Name and address of employer</p> <p>Type of business or sector</p> <p>Occupation or position held</p> <p>Main activities and responsibilities</p>	<p>February 2015- October 2017</p> <p><i>European Commission Joint Research Centre (JRC) – Institute for Prospective Technological Studies (IPTS), Regional Rural Development Standing Working Group (SWG)</i></p> <p>The Project: „National policy instruments and EU approximation process: effects on farm holdings in the Western Balkan countries (EUWEB).</p> <p>Academic expert</p> <p>Preparation of the general overview of the existing policy instruments in Montenegro, analysis of the discrepancies between national agriculture and rural development policy and CAP 2014-2020 policy, contribution to the creation of the comparative cross-country harmonized database on the policy instruments and analysis of their effects on regional level, etc.</p>
<p>Dates (from – to)</p> <p>Name and address of employer</p> <p>Type of business or sector</p> <p>Occupation or position held</p> <p>Main activities and responsibilities</p>	<p>AUGUST 2011- December 2014</p> <p>The Project “Comparison of lamb carcass and meat quality of breeds in western Balkan and Norway achieving improved palatability, sale and sustainability” (ACRONYM: LAMBCAMEQU) in the frame of the HERD (High Education, Research and Development) program-Norway.</p> <p>Capacity building/research</p> <p>Expert</p> <p>Implementation of EU standards for carcass classification and estimation of the quality parameters of raw sheep/lamb. Better understanding the requirements for production of</p>

traditionally smoked and dried sheep meat. Better valorization and fulfillment of the necessary export requirements for dried lamb meat products produced in Western Balkan (WB).

Dates (from – to)	September 2014- December 2014
Name and address of employer	European Movement in Montenegro http://www.emim.org/index.php?lang=en
Type of business or sector	Elaboration of the study on European Common Agricultural Policy- CAP and the current state in Montenegro
Occupation or position held	Expert
Main activities and responsibilities	Elaboration of the study on European Common Agricultural Policy- CAP and the current state in Montenegro
Dates (from – to)	December 2013- March 2014
Name and address of employer	Ministry of Agriculture and Rural development Montenegro and World Bank- "Montenegro Institutional Development and Agriculture Strengthening" (MIDAS Project)
Type of business or sector	Elaboration of the Montenegrin Meat production and Processing Study
Occupation or position held	Expert
Main activities and responsibilities	Elaboration of the Meat production and Processing Study for the purpose of elaboration of the Montenegrin Strategy of Agriculture and Rural Development 2014-2020.
Dates (from – to)	August 2010- October 2013
Name and address of employer	FP7 AgriSciMont Project: Fostering a Science-based development of Montenegrin Agriculture. Biotechnical Faculty, Mihaila Lalica 1, 81000 Podgorica, Montenegro
Type of business or sector	Consultancy, capacity building
Occupation or position held	Food Safety Expert
Main activities and responsibilities	Strengthening of the capacities of Biotechnical Faculty and main agricultural stakeholders in Montenegro in the area of sustainable agriculture, food safety and future development strategies. Conduction of trainings and production of development strategy documents- especially related to the food production industry in Montenegro- SWOT analysis and recommendations.
Dates (from – to)	June 2010- May 2012
Name and address of employer	Delegation of the European Union in Montenegro, Vuka Karadzica 12, 81 000 Podgorica, Montenegro
Type of business or sector	Capacity building, trainings
Occupation or position held	Project Coordination Local Expert ,, Development of Food Safety Services in Montenegro,, EU funded project
Main activities and responsibilities	Coordination of the project activities, trainings of main stakeholders and food producers, training of laboratory personnel
Dates (from – to)	1-25th December 2011
Name and address of employer	SNV- Netherlands Development Organization Prve proleterske brigade 5, 2 nd floor, 81000 Podgorica, Montenegro
Type of business or sector	Reporting and recommendations
Occupation or position held	Local expert for Dairy Sector
Main activities and responsibilities	Conducting of the field study and elaboration of final report: „Cheese production in Montenegro and the degree of fulfillment of food safety standards,,
Dates (from – to)	2008- August 2010
Name and address of employer	Norwegian University of Life Sciences, Department of Chemistry, Biochemistry and Food science, P.O. Box 5003 · NO-1432 Ås, Norway
Type of business or sector	Research
Occupation or position held	Researcher
Main activities and responsibilities	Healthy cheese- development of new low-fat types of cheeses with increased benefit for human

health. Production of novel types of low-fat cheeses having health benefits- molecular and biochemical analyses

Dates (from – to)	15th August 2008- November 2008
Name and address of employer	Aquaculture Protein Centre (APC) P.O. Box 5003 · NO-1432 Ås, Norway
Type of business or sector	Research
Occupation or position held	Research Associate
Main activities and responsibilities	Optimization of methodology for chemical analysis of krill and fish.
Dates (from – to)	April 2007- 15th August 2008
Name and address of employer	Institute of Meat Hygiene and Technology, Kacanskog 13, 11 000 Belgrade, Serbia
Type of business or sector	
Occupation or position held	Director for the Development and Transfer of Technologies, Member of the Managing Board
Main activities and responsibilities	Manage and coordinate research projects, international cooperation, decision making. Optimization of the products from the quality and economical point. Managing the work of three Departments within the Sector: Department for Scientific- Technical cooperation Department for Technical- Technological projecting and Department for Consulting and introduction of Safety and Quality Systems
Dates (from – to)	January 2005- April 2007
Name and address of employer	Institute of Meat Hygiene and Technology, Kacanskog 13, 11 000 Belgrade, Serbia
Type of business or sector	Department for Scientific and Technical Cooperation
Occupation or position held	Scientific Associate, Member of the Managing Board
Main activities and responsibilities	Manage and coordinate research projects, international cooperation, decision making
Dates (from – to)	01/12/2005- 01/03/2006
Name and address of employer	Dime Consulting- Norway, www.dime.no
Type of business or sector	Consultancy
Occupation or position held	Advisor
Main activities and responsibilities	Collaboration between Ministry of Foreign Affairs of Norway and Ministry of Agriculture, Forestry and Water Power management, Serbia: Pre-project: " Establishing of Feed and Food safety Authority in Serbia"
Dates (from – to)	2000-2005
Name and address of employer	University of Montenegro, Biotechnical institute, Podgorica, Montenegro
Type of business or sector	Department for Animal Husbandry
Occupation or position held	Research Assistant in Food microbiology
Main activities and responsibilities	Research, product development
Dates (from – to)	20/05/2002-10/08/2002
Name and address of employer	Christian Hansen, Horsholm, Denmark
Type of business or sector	Department for Genetics and Microbiology
Occupation or position held	Collaborative Researcher
Main activities and responsibilities	Dairy microbiology and Food safety- as a part of Master thesis
Dates (from – to)	05/01/2004- 30/06/2004
Name and address of employer	University of Life Sciences – Norway –UMB, Department of Chemistry, Biotechnology and Food Science, Agricultural University of Norway, Ås, Norway
Type of business or sector	Department of Chemistry, Biotechnology and Food Science
Occupation or position held	Collaborative Researcher
Main activities and responsibilities	Dairy chemistry, cheese making technology, protection of the geographical origin of traditionally produced cheeses, sensory evaluation of dairy

products, Principal Component Analysis etc.- as a part of PhD thesis

Dates (from – to)
Name and address of employer
Type of business or sector
Occupation or position held
Main activities and responsibilities

1999-2000
Republic Meteorological Institute, Podgorica, Montenegro
Department for Water Microbiology
Graduate Assistant in water microbiology

EDUCATION AND TRAINING

Dates (from – to)
Name and type of organisation
providing education and training
Principal subjects/occupational
skills covered
Title of qualification awarded

April 2017
Norwegian University of Life Sciences, Department of Chemistry, Biotechnology and Food
Science, Ås, *Norway*
Food Molecular Microbiology, Food Technology

Philosophiae Doctor (Ph.D.) (second PhD degree)

Dates (from – to)
Name and type of organisation
providing education and training
Principal subjects/occupational
skills covered
Title of qualification awarded

October 2003- September 2005
University of Belgrade, Agricultural Faculty, Department of Industrial Microbiology, Institute of
Technology and Biochemistry, Nemanjina 6, 11080 Zemun- Belgrade,
Food Microbiology, Food safety, Food Technology

Philosopher Doctor (Ph.D.) in bioengineering- the field of Nutritional Technology Science
(First PhD degree)

Dates (from – to)
Name and type of organisation
providing education and training
Principal subjects/occupational
skills covered
Title of qualification awarded

October 2000- June 2003
University of Belgrade, Agricultural Faculty, Department of Industrial Microbiology, Institute of
Technology and Biochemistry, Nemanjina 6, 11080 Zemun- Belgrade,
Food Microbiology, Food safety, Food Technology

Master of Science (M. Sc.) in bioengineering- the field of Nutritional Technology Science

Dates (from – to)
Name and type of organisation
providing education and training
Principal subjects/occupational
skills covered
Title of qualification awarded

October 1994- February 1999
Faculty of Mathematics and Natural Sciences, Department of Biology- Ecology Group, University
of Montenegro, Podgorica, Montenegro
Microbiology, Ecology

Bachelor of Sciences (B.Sc.)- Graduate Biologist

Dates (from – to)
Name and type of organisation
providing education and training
Principal subjects/occupational
skills covered
Title of qualification awarded

July 2003
Kornacky Food Safety Associates, LLC, Madison, Wisconsin, USA,
Marshfield Clinic, Madison, Wisconsin, USA
Food Safety

Training course Certificate in Food Safety Microbiology

Dates (from – to)
Name and type of organisation
providing education and training
Principal subjects/occupational
skills covered
Title of qualification awarded

August 2003
Texas A&M University, Poultry Science Department, College Station, Texas, USA

Food Safety

Food Borne Pathogens and Molecular Microbiology program Certificate

Dates (from – to)	November, 2007
Title of qualification awarded	Certificate of attendance to the International Seminar on food safety ISO 22000, ISO 14001 and Integrated referent standard ISO 22001
Dates (from – to)	November, 2003
Title of qualification awarded	TOEFL examinee's original score record- total score 593
Dates (from – to)	December, 2003
Title of qualification awarded	GRE report of scores verbal 410, quantitative 730, analytical writing 4.0

PROFESSIONAL APPOINTMENTS

- Member of the Working Group for the negotiations of Montenegro with EU for the Chapter 12- Food Safety, Veterinary and Phytosanitary policy
- **Chair** of the Special Interest Group (SIG) Global Harmonization and of Task
 - Team (TT) Scientific Committees at the *European Federation of Food Science and Technology*- www.effost.org
- **Meeting Coordinator** for the Global Harmonization Initiative (GHI)
- **GHI Ambassador for Montenegro**- www.globalharmonization.net
- **Chair** of the Sub Group- *Hygienic design of the meat processing equipment* at the European Hygienic Engineering and Design Group (EHEDG)- www.ehedg.org
- Member of the Federation of European Microbiologists
- Member of the Montenegrin Microbiological Society
- Member of the Microbiological Society of Serbia

Honors and professional recognition

British Council ELT Scholarship, April 2000
 Federation of European Microbiologists (FEMS) Fellowship, 2001
 Microbiological Society of Serbia
 INCO junior grant to attend the 1st Congress of European Microbiologists, May 2003
 USDA Young Scientist Program Grant, June 2003
 Research Council of Norway, Fellowship, August 2003

Personal skills and competences

Mother tongue(s) **Serbian, Montenegrin**

Other language(s)

English

Russian

Understanding		Speaking		Writing
		Listening	Reading	
C2 Proficient user	C2 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user
C1 Proficient user	C1 Proficient user	A1 Basic user	A1 Basic user	B1 Independent user

Norwegian

A1	Basic user	A1	Basic user	A1	Basic user	A1	Basic user	A1	Basic user
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Technical skills and competences	Competent with most Microsoft computers programs and office hardware, Unscrambler and SAS statistical program, analytical instruments.
Social skills and competences	<p><i>Team work:</i> I have worked in different research teams in several research projects.</p> <p><i>Communication skills:</i> (1) working close to research groups, Government bodies, professors domestically and internationally, food producers (2) lectures as the part of different training activities, presentations, etc.</p> <p><i>Intercultural skills:</i> I experienced successful working abroad where I worked with a team composed of colleagues of different nationalities. I am also active in participating in various international projects and multilateral activities.</p>
Organizational skills and competences	<p>Coordination and administration of projects and the budgets involved.</p> <p>Good ability to think and work independently.</p> <p>Good ability to think and work as a part of team.</p>
Other skills and competences	<p>Hard-working, resourceful, creative, and solution-oriented person, I was frequently able to come up with new and innovative approaches to my assigned projects and to face up the deadlines.</p> <p>Ability for problem solving, intuition and perseverance</p>
DRIVING LICENCE(S)	A and B
ANNEXES	LIST OF PROJECTS, PUBLICATIONS

ANNEX 1- RESEARCH AND DEVELOPMENTAL PROJECTS

Date from –Date to	Location	Company & reference person	Position	Description
June 2022- To date	Montenegro	Food and Agriculture organization of the United Nations (FAO) MS Adrienne Farkas Adrienne.Farkas@fao.org	National Consultant on Nutrition	<ul style="list-style-type: none"> ▪ Development of national report on nutrition and food systems, ▪ Development of national Food-Based Dietary Guideline (FBDG), • Support the mapping of relevant stakeholders who should be involved in the development of FBDGs. • Identify technical and institutional gaps in developing national FBDG and needs for capacity development.
Jan 2023- To date	Montenegro Austria Serbia	ANSO- Chinese Academy of Science	Project Leader	Integrated Monitoring, Bridging the Knowledge Gap and Control of Foodborne Viral And Bacterial Contamination In Food Supply Chain (ViFoodFree NET) (FoodHub as a project leader)
Jan 2023- To date	Montenegro Italy	MINISTRY OF Science and Technological Development, Montenegro	Project Leader	Project: Valorization and innovation of Montenegro traditional fermented foods (FoodValue)
January 2022- To date	Montenegro	UNITED NATIONS DEVELOPMENT FUND- UNDP Ms Ana Tabas ana.tabas@undp.org	National expert	<ul style="list-style-type: none"> ▪ Support development of gender-sensitive adaptation goals, targets and indicators for agriculture sector and identify entry points for integrating gender-sensitive climate adaptation measures for NAP Montenegro
January 2020- To date	Montenegro	Ministry of Science Montenegro Foundation of the Center of Excellence <i>In line with the Smart Specialization Strategy</i>	Project Leader- Center Director	Establishment of Centre of excellence for digitalization of microbial food safety risk assessment and quality parameters for accurate food authenticity certification- FoodHub
December 2018- To date		<i>European Food Safety Agency- EFSA</i> Joanna Swarczewicz joanna.swarczewicz@efsa.europa.eu	Project Leader	National Dietary Surveys in Compliance with the EU Menu methodology -“The children’ survey”, including subjects from 1 to 9 years old”
Jan 2021- To date	Montenegro	<i>German Ministry of Economy</i>	Project leader	

Curriculum Vitae

Aleksandra Martinovic

	Germany			FoodDecide project within the program "Strengthening Germany in the European Research and Education Area" to promote research and development projects between Germany and the Western Balkans.
December 2018- To Date		European Food Safety Agency- EFSA Joanna Swarczewicz (joanna.swarczewicz@efsa.europa.eu)	Project Leader	National Dietary Surveys in Compliance with the EU Methodology - "The adults' survey", including subjects from 10 to 74 years old"
October 2021- January 2022	Montenegro	Capital City Podgorica Secretariat for Entrepreneurship Mr Kemal Grbović ceamnets@gmail.com	Expert for capacity building and mentoring of beneficiaries in dairy sector	<ul style="list-style-type: none"> ▪ Relevant and up-to-date trainings that are be tailor made according to the needs and level of expertise of 20 participants from dairy sector. ▪ Mentoring and expert support to participants to help them further develop their services/products and utilize the new knowledge and equipment in the best possible manner.
September- December 2021		Food and Agriculture organization of the United Nations (FAO) MS Adrienne Farkas Adrienne.Farkas@fao.org	National expert	Geographical Indications Country Expert Work under the overall supervision of the FAO Assistant Director-General/Regional Representative for Europe and Central Asia (REU), the technical guidance and supervision of the Policy Officer. To provide report that will contribute to the position paper on the Geographical indications and appellations of origin as intellectual property instruments.
October- January 2021	Montenegro	UNITED NATIONS DEVELOPMENT FUND- UNDP Ms Ana Tabas ana.tabas@undp.org	Coordinator	Coordinator of the Working group for the specific priority area identified by S3 Strategy- 1.Sustainable agriculture and food value chain <ul style="list-style-type: none"> • Support in coordination of the innovation working groups and other relevant stakeholders within the Entrepreneurial Discovery Process; Support to the Ministry of Economic Development in preparation of the regular reports on implementation of the Strategy of Smart Specialization 2019-2024; Development of the Operational programme content based on S3 concept including criteria, goals, performance indicators for

				specific priority area;
June 2021- To date	Montenegro Germany	Stärkung Deutschlands im europäischen Forschungs- und Bildungsraum – German Federal Ministry of Education and Research funds Center of Excellence, BfR and University of Hannover	Project Leader- Montenegro	Digitale Technologien zur Entscheidungsunterstützung im Bereich der Lebensmittelsicherheit- FoodDecide Responsibilities: Project coordination, mentoring and research.
April 2020- December 2020	Montenegro	Enhancement of Business Environment and Competitiveness of the Private Sector of Montenegro- a project co-funded by the European Union and Montenegro and led by Expertise France consortium in partnership with Business France.	Project Leader	<ul style="list-style-type: none"> A set of activities for the cooperation with the food producers and market chains has been initiated. The application of one Montenegrin dairy industry initiated the cooperation via the application for vouchers announced by the BeSME project (https://www.besmeproject.com/)- The action was implemented with the collaboration of national goat cheese producing plant. The interventions in production technology and food safety were made, resulting in significant improvements of the quality of the products, personal and environmental hygiene and good manufacturing practice
January 2020- December 2021	Montenegro	Ministry of Science Montenegro Innovative Project <i>In line with the Strategy on innovation activities (2016-2020)</i>	Project Leader	„Establishment the laboratory for innovations in food production“ INNOFOODLAB The overall objective of InnoFoodLab is to impact scientific development in Montenegro, integrate science and agricultural production and form a base for modern, efficient, sustainable and knowledge-based food production via the improvement of the current status and development of new products based on native resources. In other words, the objective is to generate and apply knowledge of food science and food technology for optimal conservation and utilization of the nation's food resources.
Apr 2018 – December 2018	Montenegro	FAO- Food and Agriculture Organization of the United Nations, TICCD Division Ms Emille Vandecastelaere Agribusiness economist- nvestment Center and Agro-Industries Divisions	Liaison Officer (National Consultant)	The Project I „Promoting sustainable Agri-food Value Chain through Linkages with Tourism,“ The Project II „ Supporting Sustainable value Chain Integration in Montenegro's Fruit and Vegetable

Curriculum Vitae

Aleksandra Martinovic

		Emilie.Vandecandelaere@fao.org		Sector'.
Sept 2016 - 2018	Montenegro	EU – IPA Ms Birgit Möller Directorate for Finance and Contracting of the EU Assistance Funds (CFCU) birgit.moller@mif.gov.me	Project Leader	Instrument for Pre-Accession of the EU – IPAThe Project: Value Cheese. Responsibilities: The overall objective of the project is to transfer know-how for improved dairy production and valorization of traditional dairy products in Montenegro, while the specific objective is to add value in cheese production in the North cooperation between academic and business sector in the field of food safety, quality and product standardization
Feb 2015 - 2018		European Commission Joint Research Centre (JRC) – Institute for Prospective Technological Studies (IPTS), Regional Rural Development Standing Working Group (SWG) Mr Boban Ilic, SWG Secretary General, boban.ilic@swg-seerural.org	Academic expert	The Project: National policy instruments and EU approximation process: effects on farm holdings in the Western Balkan countries (EUWEB). Responsibilities: Preparation of the general overview of the existing policy instruments in Montenegro, analysis of the discrepancies between national agriculture and rural development policy and CAP 2014- 2020 policy, contribution to the creation of the comparative cross- country harmonized database on the policy instruments and analysis of their effects on regional level, etc.
March 2015 – December 2018	Montenegro	FAO- Food and Agriculture Organization of the United Nations, TCICD Division Ms Emilie Vandecandelaere Agribusiness economist- investment Center and Agro- industries Divisions Emilie.Vandecandelaere@fao.org	Liaison Officer (National Consultant)	The Project: FAO/EBRD-Upgrade of Meat Quality Standards in Montenegro & Exchange of Lessons in Western Balkans. Responsibilities: Provision of qualitative and quantitative data and assistance in its analysis for the meat sector in Montenegro, identification of the stakeholders and field visits, participation in defining the scope and methodology for the meat production value chain regarding quality, safety, market positioning and management, support in the identification of the needs for flexibility rules based on field data, participation in the elaboration of the Code of Practice (CoP) for selected pilot products for Protection of Geographical Indications (GI), etc.
Aug 2011- Dec 2014	Norway- Montenegro	Norwegian University of Life Sciences Prof. dr Bjørg Egelandssdal bjorg.egelandssdal@nmbu.no	Expert	The Project: “Comparison of lamb carcass and meat quality of breeds in western Balkan and Norway achieving improved palatability, sale and sustainability” (ACRONYM: LAMBCAMEQU) in

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				the frame of the HERD High Education, Research and Development) program-Norway. Capacity building/research Responsibilities: Implementation of EU standards for carcass classification and estimation of the quality parameters of raw sheep/lamb. Better understanding the requirements for production of traditionally smoked and dried sheep meat. Better valorization and fulfillment of the necessary export requirements for dried lamb meat products produced in Western Balkan (WB).
Sept 2014 - Dec 2014	Montenegro	European Movement in Montenegro Ms Mila Brnović mila.brnovic@emim.org	Project Manager	The Project: Elaboration of the study on European Common Agricultural Policy- CAP and the current state in Montenegro
Dec 2013 - Mar 2014	Montenegro	Ministry of Agriculture and Rural development Montenegro and World Bank Mr Milos Sturanovic milosh@t-com.me	Expert	The Project: "Montenegro Institutional Development and Agriculture Strengthening" (MIDAS Project) Elaboration of the Montenegrin Meat production and Processing Study Responsibilities: Elaboration of the Meat production and Processing Study for the purpose of elaboration of the Montenegrin Strategy of Agriculture and Rural Development 2014-2020.
Aug 2010 - Oct 2013		Biotechnical Faculty, University of Montenegro Prof. dr Milan Markovic mmarkoni63@gmail.com	Food Safety Expert	The Project: FP7 AgriSciMont Project: Fostering a Science-based development of Montenegrin Agriculture. Biotechnical Faculty, Mihaila Lalica 1, 81000 Podgorica, Montenegro Responsibilities: Strengthening of the capacities of Biotechnical Faculty and main agricultural stakeholders in future development strategies. Conduction of trainings and Montenegro in the area of sustainable agriculture, food safety and production of development strategy documents- especially related to the food production industry in Montenegro- SWOT analysis and recommendations.
Jun 2010 - May 2012		EU Commission Montenegro Bul. Džordža Vasiingtona	Project Coordination Local Expert	The Project: Capacity building, trainings Development of Food Safety Services in

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		E-mail: longo.cristiano@gmail.com		Montenegro. Responsibilities: Coordination of the project activities, trainings of main stakeholders and food producers, training of laboratory personnel.
Dec 2011	Montenegro	SNV- Netherlands Development Organization Ms Slavica Pavlovic SPavlovic@snvworld.org	Local expert for Dairy Sector	Reporting and recommendations Responsibilities: Conducting of the field study and elaboration of final report: „Cheese production in Montenegro and the degree of fulfillment of food safety standards,,
Dec 2005 - Mar 2006	Serbia	Ministry of Foreign Affairs of Norway and Ministry of Agriculture, Forestry and Water Power management, Serbia Through Dime Consulting Ms Ivana Dulic Markovic ivana.dulic@seedev.org	Advisor	Responsibilities: Collaboration between Ministry of Foreign Affairs of Norway and Ministry of Agriculture, Forestry and Water Power management, Serbia: Pre-project: " Establishing of Feed and Food safety Authority in Serbia"

ANNEX 2- RELEVANT PUBLICATIONS- last 10 yrs***Editor-in-Chief- a book printed abroad with international distribution***

1. Ensuring Global Food Safety- Exploring Global Harmonization, 2nd Edition (2022)., edited by: **Aleksandra Martinovic**, Sangsuk Oh and Huub L.M. Lelieveld, (2021)- ELSEVIER

<https://www.elsevier.com/books/ensuring-global-food-safety/martinovic/978-0-12-816011-4>

Chapter in the book with international distribution

2. **Aleksandra Martinovic**, Slavko Mirecki (2021). **Chapter 11** - Food, nutrition, and health in Montenegro, In Nutritional and Health Aspects of Traditional and Ethnic Foods, Nutritional and Health Aspects of Food in the Balkans, Academic Press, Pages 165-186, ISBN 9780128207826, <https://doi.org/10.1016/B978-0-12-820782-6.00003-7>.

First author:

1. **Martinovic, A.**, Cabal, A., Nisic, A., Sucher, J., Stöger, A., Allerberger, F., & Ruppitsch, W. (2021). Genome Sequences of *Lactococcus garvieae* and *Lactococcus petauri* Strains Isolated from Traditional Montenegrin Brine Cheeses. *Microbiology resource announcements*, 10(31), e0054621. <https://doi.org/10.1128/MRA.00546-21>
2. **Martinovic, A.**, Narvhus, J., Abrahamsen, R.K., Østlie, H.M. and Skeie, S.B. (2018), Application of indigenous strains of lactic acid bacteria for semi-industrial production of autochthonous Montenegrin Njeguši cheese. *Int J Dairy Technol*, 71: 683-692. <https://doi.org/10.1111/1471-0307.12480>
3. **Martinovic, A.**, Brede, M.E., Vegarud, G.E., Østlie, H.M., Narvhus, J. and Skeie, S. (2016). Survival of lactic acid and propionibacteria in low- and full-fat Dutch-type cheese during human digestion ex vivo. *Letters in Applied Microbiology* 62:404—410. ISSN 0266-8254, doi:10.1111/lam.12561. <https://pubmed.ncbi.nlm.nih.gov/26950045/>
4. **Martinovic, A.**, Moe, KM, Romeih, E, Basheer, A, Vogensen, FK, Østlie, H & Skeie, S (2013). Growth of adjunct *Lactobacillus casei* in Cheddar cheese differing in milk fat globule membrane components. *International Dairy Journal* 31:70-82. <https://www.sciencedirect.com/science/article/abs/pii/S0958694613000526?via%3Dihub>

Lead author:

1. Ruppitsch, Werner, Andjela Nisic, Patrick Hyden, Adriana Cabal, Jasmin Sucher, Anna Stöger, Franz Allerberger, **and Aleksandra Martinović**. 2021. "Genetic Diversity of *Leuconostoc mesenteroides* Isolates from Traditional Montenegrin Brine Cheese" *Microorganisms* 9, no. 8: 1612. <https://doi.org/10.3390/microorganisms9081612>.
2. Ruppitsch W, Nisic A, Stöger A, Allerberger F, **Martinovic A.** (2020). Draft genome sequences of five *Enterococcus faecium* isolates from traditional Montenegrin brine cheese. *Microbiol Resour Announc* 9:e00353-20. <https://doi.org/10.1128/MRA.00353-20>. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7206497/>

Other publications

1. Barjaktarović Labović, S., Mugoša, B., Andrejević, V., Banjari, I., Jovićević, Lj., Djurović, D., **Martinovic, A.**, Radojlović, J. (2018): Food hygiene awareness and practices before and after intervention in food services in Montenegro. *Food Control* 85:466-471. <https://www.bib.irb.hr/901784>.
2. Tomašević, I., Bursać Kovačević, D., Jambrak, A. R., Zsolt, S., Dalle Zotte, A., **Martinovic, A.**, Prodanov, M., Sołowiej, B., Sirbu, A., Subić, J., Roljević, S., Semenova, A., Kročko, M., Duckova, V., Getya, A., Kravchenko, O., Djekić, I. (2020). Comprehensive insight into the human route of food safety culture in Central and Eastern Europe. *Food Control*, 114, doi.org/10.1016/j.foodcont.2020.107238.
3. Vladimir Tomovic; Branislav Šojić; Marija Jokanović; Snežana Škaljac; Maja Ivić; Mila Tomović; Igor Tomašević; Slavša Stajić, **Aleksandra Martinović** (2019). Mineral contents in pork and edible offal from indigenous pigs. Vol. 11 No. 1 (2019): *Journal of Engineering & Processing Management*.
4. Tomovic, V., Jokanovic, M., Tomovic, M., Lazovic, M., Šojic, B., Škaljac, S., Ivic, M., Kocic-Tanackov, S., Tomaševic, I., **Martinovic A.** (2017). Cadmium in liver and kidneys of domestic Balkan and Alpine dairy goat breeds from Montenegro and Serbia. *Food Addit. Contam.* 10:137–142.
5. Tomović V, Jokanović M, Tomović M, Lazović M, Šojić B, Škaljac S, Ivić M, Kočić, Tanackov S, Tomašević I, **Martinovic A.** (2016). Cadmium and lead in female cattle livers and kidneys from Vojvodina, northern Serbia. *Food Addit. Contam. Part B.* 10:1-5. doi:10.1080/19393210.2016.1245216.
6. Vladana Grabež, Milena Bjelanović, Jens Rohloff, **Aleksandra Martinović**, Per Berg, Vladimir Tomović, Biljana Rogić, Bjørg Egelanddal. (2019). The relationship between volatile compounds, metabolites and sensory attributes: A case study using lamb and sheep meat, *Small Ruminant Research*, Volume 181, Pages 12-20, ISSN 0921-4488, <https://doi.org/10.1016/j.smallrumres>.
7. Bojanic, M., Rasovic, Mayrhofer, S., **Martinovic, A.**, Dürr, K., & Domig, K. J. (2017). Lactococci of Local Origin as Potential Starter Cultures for Traditional Montenegrin Cheese Production. *Food technology and biotechnology*, 55(1), 55–66. <https://doi.org/10.17113/ftb.55.01.17.4854>
8. Bojanic Rasovic, M.; Mayrhofer, S.; Ochome, A.A.M.; Ajanovic, E.; Zunabovic, M.; **Martinovic, A.**; Domig, K.J. Diversity of lactic acid bacteria isolated from traditional Montenegrin dairy products. *Genetika* 2018, 50, 465–482
9. Cabal, A., **Martinovic, A.** (2022). Special Issue 'One Health meets Omics: The way forward to investigate zoonosis'. *Journal of Applied Microbiology*, 3, p. 1144-1145. <https://doi.org/10.1111/jam.15768><https://sfamjournals.onlinelibrary.wiley.com/doi/10.1111/jam.15768>
10. Šojić, B.; Tomović, V.; Savanović, J.; Kocić-Tanackov, S.; Pavlić, B.; Jokanović, M.; Milidrag, A.; **Martinović, A.**; Vujadinović, D.; Vukić, M. (2021). Sage (*Salvia officinalis* L.) Essential Oil as a Potential Replacement for Sodium Nitrite in Dry Fermented Sausages. *Processes* 9:424. <https://doi.org/10.3390/pr9030424>.
11. Tomović, Vladimir; Šojić, Branislav; Savanović, Jovo; Kocić-Tanackov, Sunčica; Pavlić, Branimir; Jokanović, Marija; Đorđević, Vesna; Parunović, Nenad; **Martinović, Aleksandra**; Vujadinović, Dragan. (2020). "New Formulation towards Healthier Meat Products: *Juniperus communis* L. Essential Oil as Alternative for Sodium Nitrite in Dry Fermented Sausages. *Foods* 9 8: 1066. <https://doi.org/10.3390/foods9081066>.
12. A. Despotovic, V. Tomovic, N. Stanišić, M. Jokanovic, B. Šojic, S. Škaljac, S. Kocic-Tanackov, I. Tomaševic, S. Stajic, **A. Martinovic**, N. Hromiš (2018). Qualität essbarer Innereien von Swallow-Belly Mangalica-Schweinen aus Intensivproduktion – Untersuchungen an Schweinen, die mit 100 kg Lebendgewicht geschlachtet wurden. *Fleischwirtschaft*, 12, 103-108. (Edible offal quality of Swallow-Belly Mangalica pigs reared under an intensive production system – investigation on pigs slaughtered at 100 kg live weight. *Fleischwirtschaft International* 5:49-54, in German).
13. Bjelanović, M., Grabež, V., Vučić, G., **Martinovic, A.**, Lima, R.M., Marković, B., Egelanddal, B. (2015). Effects of different production systems on carcass and meat quality of sheep and lamb from Western Balkan and Norway. *Biotechnology in Animal Husbandry* 31:203-221.

14. Stojkovic, S., Grabež, V., Bjelanovic, M., Mandic, S., Vucic, G., **Martinovic, A.**, Håseth, T.T., Velemir, A. Egeland, B. (2015). Production process and quality of two different dry-cured sheep hams from Western Balkan countries. *LWT Food Sci. Technol.* 64:1217–1224.
15. Tomovic V, Jokanovic M, Pihler I, Vasiljevic I, Skaljac S, Sojic B, Tomasevic I, Tomovic M, **Martinovic_A**, Lukac D. (2015). Cadmium levels of edible offal from Saanen goat male kids. *Procedia Food Sci.* 5:289–292.
16. Lakićević, B., **Martinovic, A.**, Velebit, B., Lilić, S., Borović, B., Ikonić, P., Janković, V. (2014). Implementation of classical, molecular biological and immunoenzymatic methods in isolation and detection of *Listeria monocytogenes*. *Food and feed research*, 41:19-29.
17. Davide Porcellato, Hilde M. Østlie, Mona E. Brede, **Aleksandra Martinovic** and Siv B. Skeie (2013). Dynamics of starter, adjunct non-starter lactic acid bacteria and propionic acid bacteria in low-fat and full-fat Dutch-type cheese. *Int Dairy J.*
18. Grigoriy Ternovskoy, Lina Kuznetsova, Alexander Shleikin, **Aleksandra Martinovic**, Ludmila Oreshko (2013). Application of sour dough in the production of gluten free bread. *Acta Sci. Pol., Technol. Aliment.* 12:355-358.